Chingford Development Site, St Martin's Road, Nottingham

Ground Conditions Desk Study

Creating homes and places where people want to live

February 2018

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Executive Summary and Conceptual Site Model

SITE INFORMATION AND SETTING	
Report Purpose	Phase 1 desk study and preliminary risk assessment.
Client	Nottingham City Homes Limited.
Site Name and Location	Chingford Development Site, off St Martin's Road, Bilborough, Nottingham. The nearest postcode is NG8 3AR, and the approximate National Grid Reference of the site centre is 452120E, 341720N.
Proposed Development	It is understood that the eastern and southwestern parts of the site will be developed for a residential housing with gardens, roads and other associated infrastructure. The northwestern part of the site will be retained as an area of enhanced public open space.
PHASE 1 (DESK STUDY + WALK-OVER)	
Current Land Use and Description	The site is located within a well-established residential area of Nottingham, and comprises an irregular-shaped, well-maintained area of grassed land. A small, vegetated mound of soil, approximately 1m high and 5m long, is located in the eastern corner of the site. At the time of the walkover, a burnt-out motor scooter was noted in the southwest of the site. A cricket strip is present in the western part of the site.
Site History	The site was originally part of a larger area of agricultural land, and has remained undeveloped to the present day. Historical land use in the surrounding areas was also initially agricultural, with St Martin's Church and its associated graveyard and rectory bounding the site to the north. Over the decades the surrounding areas have been progressively developed for housing, with the present-day surrounding street layout and the school to the east of the site having been established by 1973.
Unexploded Ordnance	A Preliminary UXO Risk Assessment for the site carried out by 1st Line Defence, a Home Office-approved UXO contractor, indicates that the site is at low risk from UXO and no further action is required.
Geology	The BGS mapping indicates that there are no superficial deposits underlying the majority of the site. However, Head deposits encroach beneath a small area adjacent to the eastern part of the northern site boundary. The solid geology underlying the site is shown to comprise sandstones of the Lenton Sandstone Formation and mudstones, siltstones and sandstones of the Edlington Formation underlying the central and northern parts of the site, and dolostones of the Cadeby Formation underlying the southern and eastern parts of the site. There are no faults beneath, or within influencing distance of, the site.
Mining or Mineral Extraction	A Coal Authority mining report for the site states that the property is in a surface area that could be affected by underground mining in three seams of coal at depths of 80m to 250m. However, any movement in the ground due to coal mining activity should by now have stopped. There are no known mine entries within, or within 20 metres of, the boundary of the property. The Coal Authority has not received any damage notices or claims for properties within 50m of the subject property.
Ground Stability	The Groundsure report indicates that hazards posed by shrink-swell clays, running sands, compressible ground, ground dissolution features, landslides and collapsible deposits range from very low to negligible. There are no known natural underground cavities within 500m of the site.
Hydrogeology	The Lenton Sandstone Formation and the Cadeby Formation are classified as being Principal Aquifers, whilst the Edlington Formation is a Secondary B Aquifer. The site is not located within a groundwater Source Protection Zone (SPZ). There are no active, licensed groundwater abstractions within 1km of the site.

Hydrology	There are no significant surface water features on, or within the vicinity of, the site. There are no licensed surface water abstractions within 1km of the site, and no active discharge consents within 250m of the site.
Flood Risk	The site is in Flood Zone 1.
Radon	The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level, and basic radon protective measures will need to be installed in new properties.
Waste Management	There are no records of landfills or other waste management sites within 250m of the site. There are no records relating to the storage of radioactive materials within 500m of the site. The site is not within 500m of a COMAH, NIHSS site or Hazardous Substances Planning Consent.
Geotechnical Hazards from Desk Study	Potential geotechnical hazards based on the expected ground conditions are listed below. • Uncontrolled deposition of Made Ground – excessive settlement or differential settlement of foundations, roads and infrastructure elements. • Attack of buried concrete by aggressive ground conditions – the development site may contain unknown Made Ground and potentially sulphate-bearing soils. • Collapse of excavations in loose Made Ground or natural sands. • Running sands, loose landfill and shallow groundwater, leading to difficulty with excavation due to trench collapse. • Ground subsidence due to potential historic, shallow coal workings beneath the site.
Possible Contaminant Linkages of Moderate or Greater Risk Level	No significant pollution linkages have been identified at the site, although some highly-localised contamination may be present in the immediate vicinity of the burnt-out motor scooter present during the walkover in the southwest of the site.
Conclusions	Based on historic land uses and its current operational use, the overall risk from land contamination at the site is considered to be **very low** for the current land use and **very low to low** for a re-developed site. However, this assessment would need to be confirmed by appropriate intrusive investigation, testing and risk assessment. It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.
FUTURE CONSIDERATIONS	
Further Work	In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. Based on the current data, this site investigation is proposed to comprise: • the carrying out of a detailed Coal Mining Risk Assessment for the site to determine the likelihood that shallow mine working may underlie the site; • the excavation of trial pits to allow collection of samples for geotechnical and chemical analysis, to assess trench stability, over break potential and ease of excavation, and to allow soil infiltration rate testing to be undertaken; • the undertaking of soil infiltration rate testing; • dynamic sampling, to allow collection of samples for geotechnical and chemical analysis of shallow soils, to allow in-situ testing (SPTs) to be undertaken to assess the density of the underlying shallow soils to aid foundation design, and to allow the installation of gas and groundwater monitoring wells; • gas concentration and groundwater level monitoring; • geotechnical testing of soils and rock; and • contamination analyses of soil and groundwater.

This Executive Summary forms part of Hydrock Consultants Limited document number CDS-HYD-XX-DS-RP-GE-0001_S2_P1 and should not be used as a separate document.

1.0 INTRODUCTION

1.1 Terms of Reference

In January 2018, Hydrock Consultants Limited (Hydrock) was commissioned by Mr Casey Harper of Nottingham City Homes Ltd to undertake a desk study for an area of open land known as the Chingford Development Area, off St Martin's Road, Nottingham.

The site covers approximately 6.04 ha, and currently comprises an irregular-shaped area of open, well-maintained, grassed land.

It is understood that the eastern and southwestern parts of the site will be developed for a residential housing with gardens, roads and other associated infrastructure. The northwestern part of the site will be retained as an area of enhanced public open space.

A site location plan, a current site features plan, a topographic survey produced by Site Vision Surveys, and a proposed, indicative site layout plan, provided by the Client, are presented in Appendix A.

1.2 Objectives

The objectives of this investigation are to assess the readily available information on the likely ground conditions at the site.

1.3 Scope

The scope of work for this commission comprises:

- a desk study and site walk-over reconnaissance to determine the nature of the site and its surroundings, including current and former land uses, geology, hydrogeology, hydrology and geo-environmental data; and
- reporting on findings.

See Appendix E for detailed reporting methodology.

1.4 Approach

The work has been carried out in general accordance with recognised best practice as detailed in guidance documents such as the CLR 11 *Model Procedures* (Environment Agency 2004). The technical details of the approach and the methodologies adopted are given in Appendix E.

A recognised phased approach has been followed and this Phase 1 desk study and walk-over provides a preliminary assessment of the site conditions and the important factors that may require further investigation to reduce uncertainty. Recommendations for further work are listed at the end.

2.0 PRELIMINARY INVESTIGATION (PHASE 1 STUDY)

A number of desk study sources have been used to assemble the following information, including a proprietary environmental data report which has been obtained for the site (dated 30th January 2018), and these are presented in Appendix D.

2.1 Site Referencing

The site is referenced in Table 2.1.

Table 2.1: Site Referencing Information

Item	Brief Description
Site name	Chingford Development Site.
Site location and National Grid Reference.	Off St Martin's Road, Bilborough, Nottingham. The nearest postcode is NG8 3AR, and the approximate National Grid Reference of the site centre is 452120E, 341720N.

A site location plan is provided in Appendix A.

2.2 Site Description and Walk-Over Survey

A walk-over survey was undertaken in January 2018 to visually assess potential hazards and receptors. A summary of the site conditions at the time of the walkover is presented in Table 2.2, and selected walk-over photographs are presented in Appendix B.

Table 2.2: Site Description

Item	Brief Description
Site access	The site is accessed via secured, steel double gates directly off St Martin's Road to the north.
Site area	Approximately 6.04 ha.
Elevation & topography	The site slopes gently from a high point in the northwest corner at 86.5m OD to 80m OD in the east and 79.5m OD in the south.
Present land use	The site comprises an irregular-shaped, well-maintained area of grassed land. A small, vegetated mound of soil, approximately 1m high and 5m long, is located in the eastern corner of the site. At the time of the walkover, a burnt-out motor scooter was noted in the southwest of the site. A cricket strip is present in the western part of the site.
Vegetation	The majority of the site is covered by grass, although trees and bushes are present along most of the site boundaries. No evidence was noted suggesting the presence of Japanese Knotweed or other invasive species. However, this report should not be considered to be a formal survey of such species.
General site sensitivity	The site lies in a well-established residential and industrial area. There are no Designated Environmentally Sensitive Areas in the vicinity of the site.

Item	Brief Description
Site boundaries and surrounding land	The site boundaries are mostly formed by hedgerows and lines of trees, although wire fencing separates the field from the adjacent school development in the southeast. The remainder of the site is bound by residential properties, except for the part of the southern boundary in the west of the site which is bound by a part of the field that is not to be incorporated into the development plan.

2.3 Site History

A study of historical Ordnance Survey maps (Appendix C) has been undertaken to identify any former land uses at the site and surrounding areas which may have geotechnical or geo-environmental implications for the proposed development. The key findings are summarised in

Table 2.3.

Table 2.3: Key Features from Historical Mapping

Map Edition and Scale	Key Features on Site	Key Features off Site
1882, 1900 & 1915 (1:2,500) & 1884 , 1885, 199 & 1921 (1:10,560)	The site is agricultural land divided into fields, with a track shown running northwest-southeast through the approximate centre of the site.	St Martin's Church and its associated graveyard and rectory bound the site to the north, with low density housing beyond. Land use in the remaining areas surrounding the site is entirely agricultural, except for a large area of woodland (Bilborough Wood / Shepherd's Wood) located approximately 150m to the south. A water-filled excavation is present approximately 30m to the north of the eastern part of the site.
1938 (10,560)	No significant changes.	Denewood Crescent is shown for the first time, bounding the site to the east, with school buildings beyond.
1954 (1:1,250), 1954 & 1955 (1:2,500) & 1955 (1:10,560)	The track is no longer shown, nor are some of the internal field boundaries.	The present-day housing to the south (Chingford Road) and west (Wigman Road) have been established. The woodland has been cut down to leave open land. A large pond is shown approximately 130m to the north of the site.
1960-64 (1:1,250), 1959-64 (1:1,2500) & 1967 (1:10,560)	No significant change.	The housing to the north (Yatesbury Crescent) has been built, necessitating the infilling of the excavation formerly located 30m to the north of the site, with a small area to the west of the housing marked as allotment gardens. The area of woodland formerly located to the south is now occupied by a miniature golf course, a playing field and pavilion, a sports stadium, and schools.
1968-73	The site is marked as a playing field.	The present-day layout of the surrounding areas has been established. The 1973 maps show the large pond formerly located 130m to

Map Edition and Scale	Key Features on Site	Key Features off Site
(1:1,250), 1989-93 (1:2,500) & 1973, 1989, 2002, 2010 & 2014 (1:10,000)		the north has been built over, and the adjacent school is shown for the first time.

2.4 Unexploded Ordnance/Bombs

In general accordance with CIRIA Report C681 (Stone *et al* 2009), a non-specialist UXO screening exercise has been carried out for the site.

There is no indication of former military use from the desk study. However, screening against the Zetica regional bomb risk map (Nottinghamshire) indicates the site to be in an area where the bomb risk is moderate.

Since the available records of aerial bombing are interpreted by Zetica as moderate bomb risk, a Preliminary UXO Risk Assessment for the site has been undertaken by 1st Line Defence, a Home Office-approved UXO contractor. The UXO risk assessment concluded that the site is at low risk from historic aerial bombing, and that no further action is required.

Copies of both the Zetica map and the Preliminary UXO Risk Assessment are included at Appendix D.

2.5 Geology

The general geology of the site area is shown on the British Geological Survey's (BGS) 1:50,000 geological map of Derby (Sheet 125) and is summarised in Table 2.4.

Table 2.4: Geology

Location	Age	Stratigraphic Name	Description
Underlying the majority of the northern half of the site.	Guadalupian Epoch (Early Triassic)	Lenton Sandstone Formation	Red-brown with buff mottling, argillaceous, fine to medium-grained, cross-stratified sandstones with subordinate beds of mudstone and conglomerate.
Present as an east-west band through the centre of the site, and a north-south band through the east of the site.	Guadalupian Epoch - Lopingian Epoch (Early Triassic)	Edlington Formation	Red-brown mudstone with subordinate siltstone and sandstone. Dolostone and gypsum/anhydrite locally common.
Underlying the southern and eastern parts of the site.		Cadeby Formation	Grey to buff grey, commonly oolitic or granular, dolostone with subordinate mudstone, dolomitic siltstone and sandstone.

The BGS mapping indicates that there are no superficial deposits underlying the majority of the site. However, Head deposits (typically poorly sorted and poorly stratified deposits of sand and gravel, locally with lenses of silt, clay or peat and organic material) may encroach beneath a small area adjacent to the eastern part of the northern site boundary

A small area of Made Ground, consisting of a mound of vegetated, excavated soils, is present in the eastern corner of the site. However, the historical maps do not include any evidence to suggest that significant quantities of Made Ground may be present elsewhere beneath the remainder of the site.

There are no faults beneath, or within influencing distance of, the site.

2.6 Mining or Mineral Extraction

A Coal Authority Mining Report has been obtained for the site, Ref. 51001780302001. The key findings are summarised below.

- The property is in a surface area that could be affected by underground mining in three seams of coal at 80m to 250m depth, and last worked in 1935. However, any movement in the ground due to coal mining activity should by now have stopped.
- The property is not in an area where the Coal Authority has plans to grant a licence to remove coal.
- The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.
- The property is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future.
- No notices have been given, under Section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.
- There are no known mine entries within, or within 20 metres of, the boundary of the property.
- The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.
- The Coal Authority has no record of a mine gas emission requiring action.
- The property has not been subject to remedial works by, or on behalf of, the Coal Authority, under its Emergency Surface Hazard Call Out procedures.
- The property is not in an area where a notice to withdraw support has been given. The property is not in an area where a notice has been given under Section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

2.7 Ground Stability

The Groundsure report indicates that hazards posed by shrink-swell clays, running sands, compressible ground, ground dissolution features, landslides and collapsible deposits range from very low to negligible.

There are no known natural underground cavities within 500m of the site.

2.8 Hydrogeology

The aquifer designations given in Table 2.6 are based on the Environment Agency interactive aquifer designation map. Additional information on the hydraulic characteristics of the geological units has been abstracted from Allen et al (1997) and Jones et al (2000).

Table 2.6: Hydraulic Characteristics of Strata

Stratum	Aquifer Designation	Hydraulic Characteristics
Lenton Sandstone Formation	Principal Aquifers	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale.
Cadeby Formation		
Edlington Formation	Secondary B Aquifer	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

The site is not located within a groundwater Source Protection Zone (SPZ). There are no active, licensed groundwater abstractions within 1km of the site.

2.9 Hydrology and Flooding

There are no significant surface water bodies on, or within 500m of, the site.

There are no licensed surface water abstractions within the 1km of the site.

There are no active licensed discharge consents within 500m of the site.

The desk study information indicates the proposed development is in Flood Zone 1 (with low probability of flooding) and the area is less than 1 ha so no consultation with the Environment Agency is required. However, the main flood risk issue to consider is the management of surface water run-off. Further advice is given in the Agency standing advice on development and flood risk, general surface water drainage information. If a known drainage problem exists, consultation with the Local Planning Authority will be required to determine any flood risk measures required.

The environmental data report indicates that the site is located within 50m of an area susceptible to groundwater flooding within unconfined aquifers (Clearwater flooding).

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

2.10 Waste Management and Hazardous Substances

There are no records of landfills or other waste management sites within 250m of the site.

There are no records relating to the storage of radioactive materials within 500m of the site.

The site is not within 500m of a COMAH, NIHSS site or Hazardous Substances Planning Consent.

2.11 Previous Evidence of Known Contamination Events

There are no records of significant contamination events within 250m of the site.

2.12 Natural Soil Chemistry

Information contained within the environmental data report (Appendix D) gives indicative natural concentration values (estimated) for the natural soils at the site for a selection of Contaminants of Potential Concern. These have been reproduced in Table 2.7 below.

Table2.7: Natural Soil Chemistry

Element	Arsenic	Cadmium	Chromium	Lead	Nickel
Concentration (mg/kg)	<15 - 25	<1.8	40 - 90	<100	<15 - 30

The above values may act as guidance, indicating expected natural background concentration levels, and thereby provide a baseline estimate that can be used to assess the significance of the results of any chemical soil testing data acquired during future ground investigations at the site.

2.13 Radon

The radon risk has been assessed in the Groundsure report.

The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level, and as a consequence basic radon protective measures will need to be installed in new properties constructed at the site.

2.14 BGS Borehole Archive

There are three logs available from the BGS archives for exploratory holes drilled in the vicinity of the site. All three were located within the grounds of the adjacent Westbury School, and the reported ground conditions are described below.

- Borehole No. 4 (BGS Ref. SK54SW83), located 15m from the site boundary: Topsoil to 0.3m below ground level (bgl); over sand to 1.22m bgl; over sandy clay/silt to 2.13m bgl; over soft sandstone with thin clay bands to 3.05m bgl (end of borehole).
- Borehole No. 2 (BGS Ref. SK54SW82), located 45m from the site boundary: Topsoil to 0.3m bgl; over gravelly sand to 0.84m bgl; over red firm clay to 1.22m bgl; over soft (becoming hard at 3.65m bgl) sandstone with thin clay bands to 20.0m bgl (end of borehole).
- Borehole No. 1 (BGS Ref. SK54SW81), located 55m from the site boundary: Topsoil to 0.3m bgl; over sand to 1.22m bgl; over sandy clay 1.83m bgl; over soft sandstone with thin clay bands to 3.05m bgl (end of borehole).

3.0 PRELIMINARY CONCEPTUAL SITE MODEL

3.1.1 Potential Contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from on-site or off-site sources.

Potential On-Site Sources of Contamination

- Any Made Ground that may potentially underlie the site, possibly containing elevated concentrations of metal and metalloids, PAHs, petroleum hydrocarbons and asbestos.
- There may be some shallow soil contamination in the immediate vicinity of the burnt-out motor scooter noted in the southwest of the site during the site walkover. However, if contamination is proven to be present it is likely to be highly localised and easily dealt with through excavation of the affected soils.
- Elevated concentrations of metals within natural soils.

Given the known history of the site and the anticipated ground conditions underlying the site, risks from methane and carbon dioxide are considered to be very low. However, this will need to be confirmed as part of any subsequent ground investigation.

It should be noted that the site is in a radon-affected area, and basic radon protection measures will need to be incorporated into new buildings constructed at the site.

Potential Off-Site Sources of Contamination

No potentially significantly sources of off-site contamination have been identified.

In the absence of any nearby recorded landfills, risks from such sources are not considered further. Although a large pond was formerly present 130m to the north of the site, the age of the fill (pre-1973), and the fact that the area of the pond was subsequently developed for housing, indicates that gas risks from this source are also considered low.

3.1.2 Potential Receptors

- Humans (neighbours, site end users).
- Development end use (buildings, utilities and landscaping).
- Existing and proposed planting.
- Groundwater: Principal Aquifer status of the underlying strata.

As there are no surface water features present at, or in the vicinity of, the site these are not considered to be a viable receptor for any contamination that might originate at the site.

It should be noted that health and safety risks to site contractors and maintenance workers have not been assessed during these works and will need to be considered separately.

3.1.3 Potential Pathways

- Humans: ingestion, skin contact, inhalation of dust and indoor and outdoor air.
- Buildings: direct contact with substances deleterious to building materials.
- Buildings: ground gas ingress via permeable soils and/or construction gaps.
- Plant life: root uptake.
- Plant uptake: methane ingress to the root zone.
- Underlying groundwater: migration of contaminants via leachate dispersion through the unsaturated zone in the underlying aquifer.

3.1.4 Summary of Potential Contaminant Linkages

Table 3.1 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in CLR 11 and additional risk assessment is required.

Linkages has been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but with the addition of a 'no linkage' category. More details are given in Appendix E including descriptions of typical examples of probability and consequences.

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

		Consequence			
Probability	*product*	**Severe**	**Medium**	**Mild**	**Minor**
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table 3.1: Exposure Model – Preliminary Risk Assessment of Source-Pathway-Receptor Contaminant Linkages

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments
Made Ground, possibly containing elevated concentrations of metals, metalloids, PAHs and petroleum hydrocarbons.	Humans: ingestion, skin contact, inhalation of dust.	Human health (neighbours, site end users).	Unlikely	Medium	Very low	The site is historically undeveloped land, and significant quantities of Made Ground are unlikely. Some highly-localised soil contamination may be present in the southwest of the site, in the immediate vicinity of the burnt-out motor scooter. Intrusive ground investigation and chemical soil testing will be required to accurately determine the actual risks to the end users of the proposed residential development.
	Underlying groundwater: migration of contaminant into the underlying aquifers.	Groundwater: Principal aquifer status of the underlying strata.				
	Plant life: root uptake.	Planting.				
Asbestos-containing materials (ACM) in the Made Ground.	Fugitive dust.	Human health (neighbours, site end users)	Unlikely	Severe	Low	The site is historically undeveloped land, and significant quantities of Made Ground are unlikely. Intrusive ground investigation and chemical soil testing will be required to accurately determine the actual risks to the end users of the proposed residential development.
Ground gases (gases carbon dioxide and methane) from organic materials present in the general Made Ground.	Migration through soils or groundwater to indoor air.	Development end use (buildings, utilities and landscaping)	Unlikely	Severe	Low	In the apparent absence of any significant source of ground gases at, or in the vicinity of, the site, it is considered that risks from ground gases are likely to be very low. However, this will need to be confirmed through intrusive ground investigation, gas monitoring and risk assessment.
		Humans: (asphyxiation or explosion)				

3.2 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions are listed below.

- Uncontrolled deposition of Made Ground – excessive settlement or differential settlement of foundations, roads and infrastructure elements.
- Attack of buried concrete by aggressive ground conditions – the development site may contain unknown Made Ground and potentially sulphate-bearing soils.
- Collapse of excavations in loose Made Ground or natural sands.
- Running sands, loose landfill and shallow groundwater, leading to difficulty with excavation due to trench collapse.
- Ground subsidence due to potential historic, shallow coal workings beneath the site.

4.0 DESK STUDY CONCLUSIONS

Table 3.1 is a summary of the geo-environmental risks identified and the overall risk associated with the site has been designated using qualitative judgement according to the risk categories given in Table 4.1.

Based on historic land uses and its current operational use, the overall risk from land contamination at the site is considered to be **very low** for the current land use and **very low to low** for a re-developed site. However, this assessment would need to be confirmed by appropriate intrusive investigation, testing and risk assessment.

It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.

Table 4.1: Assessed Overall Risk Categories for the Site from Land Contamination

Risk Category	Definition
Very High Risk	A significant contaminant linkage, including actual evidence of significant harm or significant possibility of significant harm, is clearly identifiable at the site (e.g. from visual or documentary evidence) under current conditions, with potential for legal and/or financial consequences for the site owner or other Responsible Person. Remediation advisable based on acute impacts being likely. Immediate action should be considered.
High Risk	A contaminant linkage is identifiable at the site under current and future use conditions. Although likely, there is no obvious actual evidence of significant harm or significant possibility of significant harm under current conditions. Extent of risk is therefore subject to confirmation by investigation and risk assessment and most likely to be deemed significant. Realisation of the risk is likely to present a substantial liability to the site owner or other Responsible Person. Remediation required for redevelopment and may also be required under Part 2A for existing receptors.
Moderate Risk	A contaminant linkage is identifiable at the site under current and future use conditions. However, it is not likely to be a significant linkage under current conditions. It is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Actual extent of risk subject to confirmation by additional investigation and risk assessment and most likely to lie between no possibility of harm (under current conditions) and significant possibility of significant harm (under conditions created by new use). Remediation may be required for redevelopment.
Low Risk	Potential pathways and receptors exist but history of contaminative use or site conditions indicates that contamination is likely to be of limited extent and below the level of possibility of harm. It is unlikely that the site owner or other Responsible Person would face substantial liabilities from such a risk. Precautionary investigations and risk assessment advisable on change of use. Any subsequent remedial works are likely to be relatively limited.
Very Low Risk	No contaminant linkage likely to exist under current or future conditions, but this cannot be completely discounted. If harm is realised, it is likely at worst to be mild or minor. Site not capable of being determined under Part 2A where the Local Authority inspects the site. Precautionary investigations and risk assessment advisable on change of use. Otherwise no further action recommended.
No Risk	No contaminant linkage exists.

5.0 UNCERTAINTIES AND LIMITATIONS

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instruction of Mr Casey Harper of Nottingham City Homes Limited (the Client), under the terms of appointment for Hydrock. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared and provided. Should the Client require to pass copies of the report to other parties for information, the whole of the report should be so copied, but no professional liability or warranty shall be extended to other parties by Hydrock in this connection without the explicit written agreement thereto by Hydrock.

The report may be assigned by the Client by way of absolute legal agreement to a purchaser of all or part of the site to which the report refers ("The Site") without the consent of Hydrock being required and such assignment shall be effective upon written notice thereof being given to Hydrock. No further assignments shall be permitted, unless expressly agreed in writing by Hydrock. In the event of the Client entering into a legal joint venture to develop The Site, the report can be regarded as having been issued by Hydrock jointly in favour of the Client and the joint venture partner, and in respect of the report Hydrock would owe the joint venture partner the same duty of care that Hydrock owed to the Client when Hydrock was instructed to prepare the report subject to all the matters contained or referred to in the report.

This report details the findings of work carried out in February 2018. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, all potential environmental constraints or liabilities associated with the site may not have been revealed.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness. It is assumed that previous reports provided have been assigned to the Client and can be relied upon. Should this not be the case Hydrock should be informed immediately as additional work may be required.

The work has been carried out in general accordance with recognised best practice. The various methodologies used are explained in Appendix E. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance. Where the phrase 'suitable for use' is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

The preliminary risk assessment process may identify potential risks to site demolition and redevelopment workers. However, consideration of occupational health and safety issues is beyond the scope of this report.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal survey of these potential hazards.

Any site boundary line depicted on plans does not imply legal ownership of land.

6.0 RECOMMENDATIONS FOR FURTHER WORK

In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. Based on the current data, this site investigation is proposed to comprise:

- the carrying out of a detailed Coal Mining Risk Assessment for the site to determine the likelihood that shallow mine working may underlie the site;
- the excavation of trial pits to allow collection of samples for geotechnical and chemical analysis, to assess trench stability, over break potential and ease of excavation, and to allow soil infiltration rate testing to be undertaken;
- the undertaking of soil infiltration rate testing;
- dynamic sampling, to allow collection of samples for geotechnical and chemical analysis of shallow soils, to allow in-situ testing (SPTs) to be undertaken to assess the density of the underlying shallow soils to aid foundation design, and to allow the installation of gas and groundwater monitoring wells;
- gas concentration and groundwater level monitoring;
- geotechnical testing of soils and rock; and
- contamination analyses of soil and groundwater.

7.0 REFERENCES

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Appendix A

Drawings

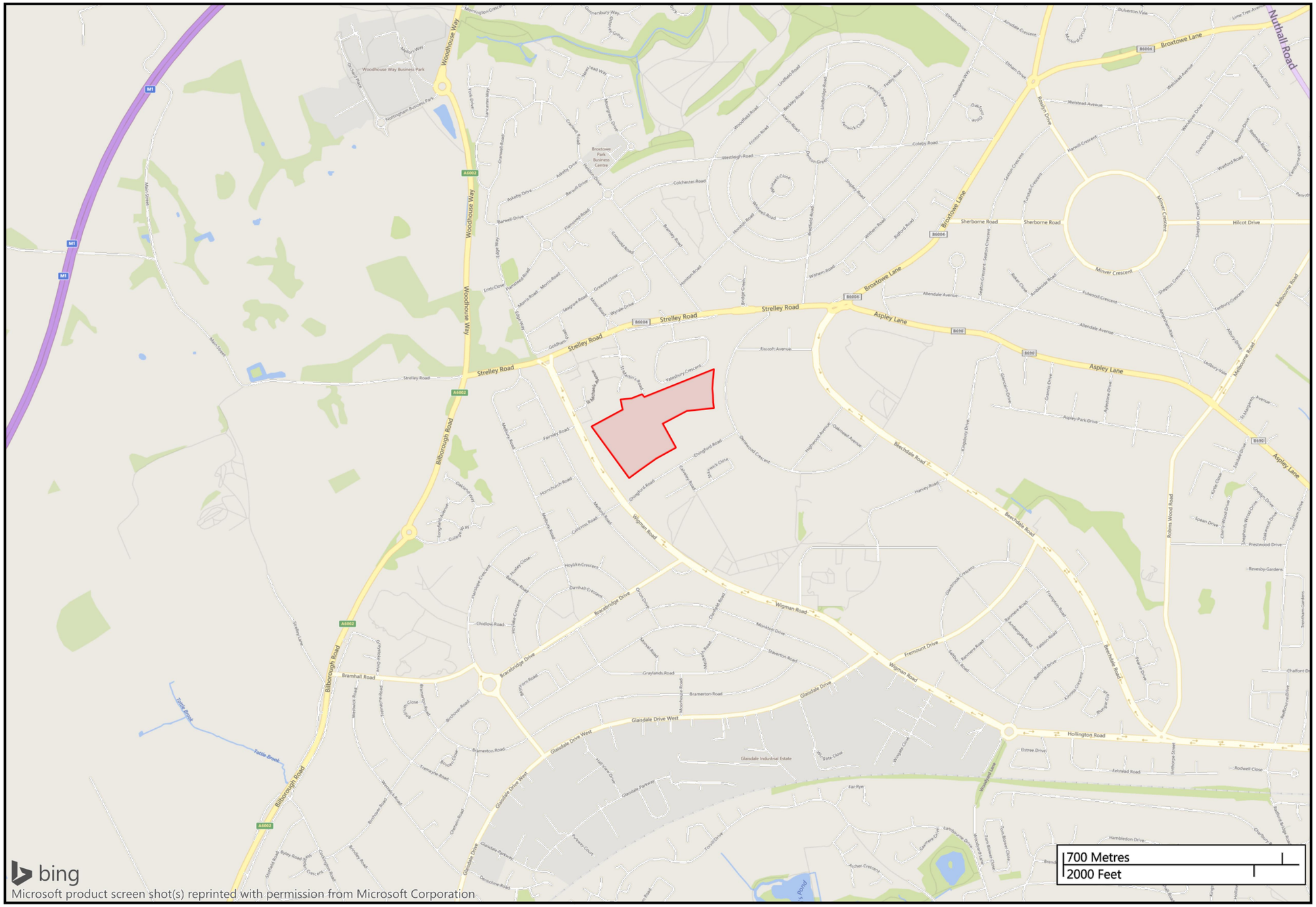
Drawings included in this report:

CDS-HYD-XX-ZZ-DR-GE-1001 – Site Location Plan

CDS-HYD-XX-ZZ-DR-GE-1002 – Site Features Plan

Topographical Survey Drawing Ref. 0118-HYK-11114

Indicative Proposed Site Layout (provided by Client)



Rev	Date	Description	By	Ckd

Architect :

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stoke@hydrock.com
www.hydrock.com

Client :

NOTTINGHAM CITY HOMES

Project Title:

CHINGFORD DEVELOPMENT SITE

Drawing Title:

Site Location Plan

Reference:

CDS-HYD-XX-ZZ-DR-GE-1001

Hydrock Job No:

C-08250-C

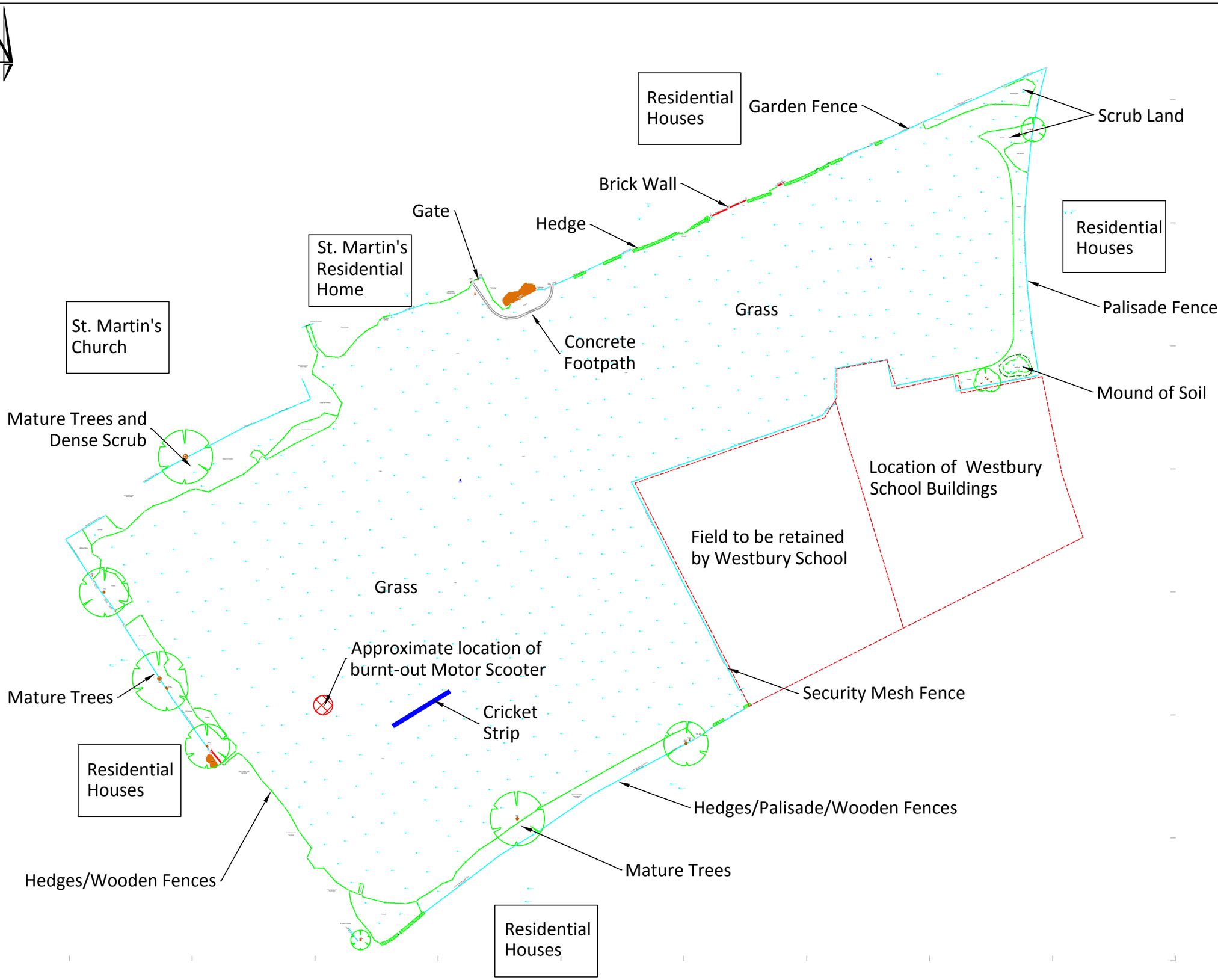
Drawn	Checked	Scale @ A3	Date	Issue Date
TW	AC	As Shown	23/02/18	23/02/18

Revision: P1

Status: S2

Notes:

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.



Rev	Date	Description	By	Ckd

Architect :

Hydrock

Hydrock Consultants Ltd
4 Lakeside
Festival Park
Stoke-on-Trent
ST1 5RY
T +44 (0)1782 261919
stoke@hydrock.com
www.hydrock.com

Client : Nottingham City Homes
Creating homes and places where people want to live

Project Title:
CHINGFORD DEVELOPMENT SITE, NOTTINGHAM

Drawing Title:
Site Features Plan

Reference:
CDS-HYD-XX-ZZ-DR-GE-1002

Hydrock Job No:
C-08250-C

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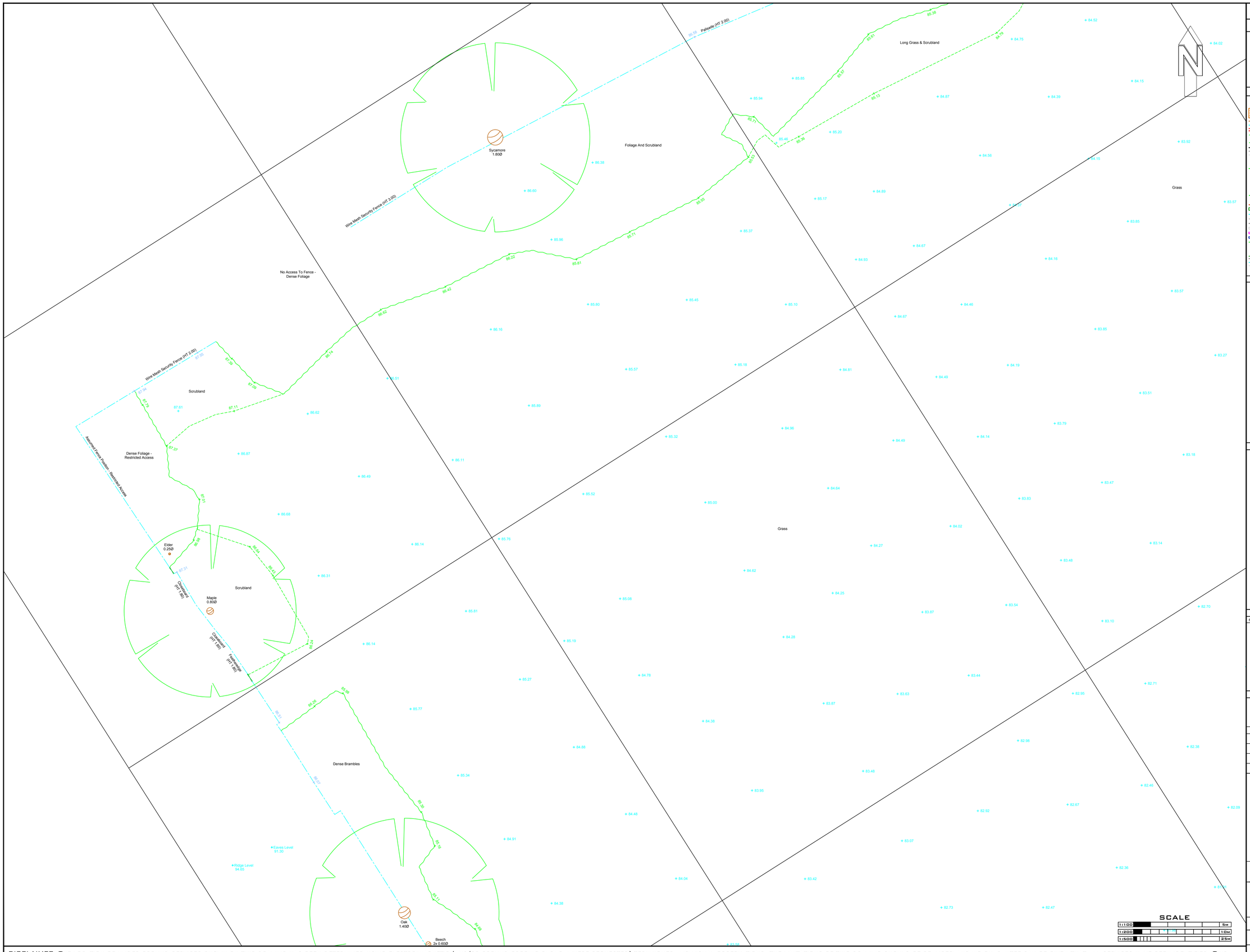
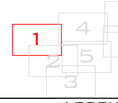
Revision: P1

Status: S2



THE NAME IN SURVEYS

SHEET LAYOUT



LEGEND

- Survey Station (SVS01 152.000)
- Level
- Building
- Canopy
- Fence
- Wall
- Hedge
- Kerb
- Drop Kerb
- Kerb Top
- Manhole (MH CL DD.DD)
- Verge
- Tree (Shown To Scale)
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- Pipe
- Ventilation
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- Vapour Recovery
- Gauge Line
- Telemetry
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- Historical By Layer
- End Of Trace
- Do Not Drill / Banded Pipes
- Tank - W= Water U=Unknown F=Foam P=Product D=Concrete
- Stantion
- Pump Island
- Borehole (BH 150.00)

ABBREVIATIONS

A/C	AIR CONDITIONER	OSA	OFF SURVEY AREA
A/R	ASSUMED ROUTE	OSBM	ORDNANCE SURVEY BENCH MARK
AV	AIR VALVE	PL	PIT LEVEL
BOLL	BOLLARD	PR	PIPE RISER
ILLU BOLL	ILLUMINOUS BOLLARD	P&R FENCE	POST & RAIL FENCE
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BTIC	BRITISH TELECOM COVER	RE	RODDING EYE
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CTV	CABLE TV	SAP	SAPLING
CP	CATCHPIT	S/C	SOUND CONNECTED
CONC	CONCRETE	SEC FENCE	SECURITY FENCE
CL	COVER LEVEL	SL	SPOT LIGHT
D	DEPTH / DEEP	SP	SOIL PIPE
D/CHAN	DRAINAGE CHANNEL	ST	STOP TAP
DP	DOWN PIPE	STN	STATION (DATUM POINT)
EC	ELECTRICITY COVER	SV	STOP VALVE
ER	EARTH ROD	SVP	SOIL VENT PIPE
EP	ELECTRICITY POLE	TBM	TEMPORARY BENCH MARK
EOT	END OF TRACE	TCL	TREE CANOPY LEVEL
FFL	FINISHED FLOOR LEVEL	TOW	TOP OF WALL LEVEL
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MTR	METER	WP	WASTE PIPE
MW	MONITORING WELL	U/S	UNDERSIDE
OH	OVERHEAD	Ø	DIAMETER

UTILITY NOTES

STATION COORDINATES

STATION	EASTINGS	NORTHINGS	LEVEL	DESCRIPTION
SVS01	452075.950	341835.240	81.176	Peg
SVS02	452109.064	341745.420	82.852	Peg

TOPOGRAPHICAL NOTES

ALL LEVELS ARE IN METERS RELATED TO OSGB36 DATUM USING LEICA VIVA GNSS RECEIVER. COORDINATE GRID IS RELATED TO OSGB36 DATUM USING LEICA VIVA GNSS RECEIVER. SITE CENTERED AROUND SVS01. NO SCALE FACTOR APPLIED.

TREE SPECIES ARE INDICATED WHERE KNOWN HOWEVER IT IS RECOMMENDED THAT EXPERT IDENTIFICATION IS CONSULTED IF CRITICAL.

REV	DATE	DESCRIPTION

SURVEYS
SITE VISION SURVEYS LIMITED
UTILITY | TOPOGRAPHICAL | MAPPING
T: 01788 575036 W: SVSLTD.NET

CLIENT: Hydrock

SITE LOCATION:
CHINGFORD DEVELOPMENT
ST MARTINS ROAD
NOTTINGHAM

DRAWING TITLE: TOPOGRAPHIC SURVEY

SURVEYED BY:	DRAWN BY:	APPROVED BY:
LN/LC	LN	SF

DRAWING NO:	SURVEY DATE:
0118-HYK-11114	24-01-2018

SCALE:	SHEET NO:	REV:
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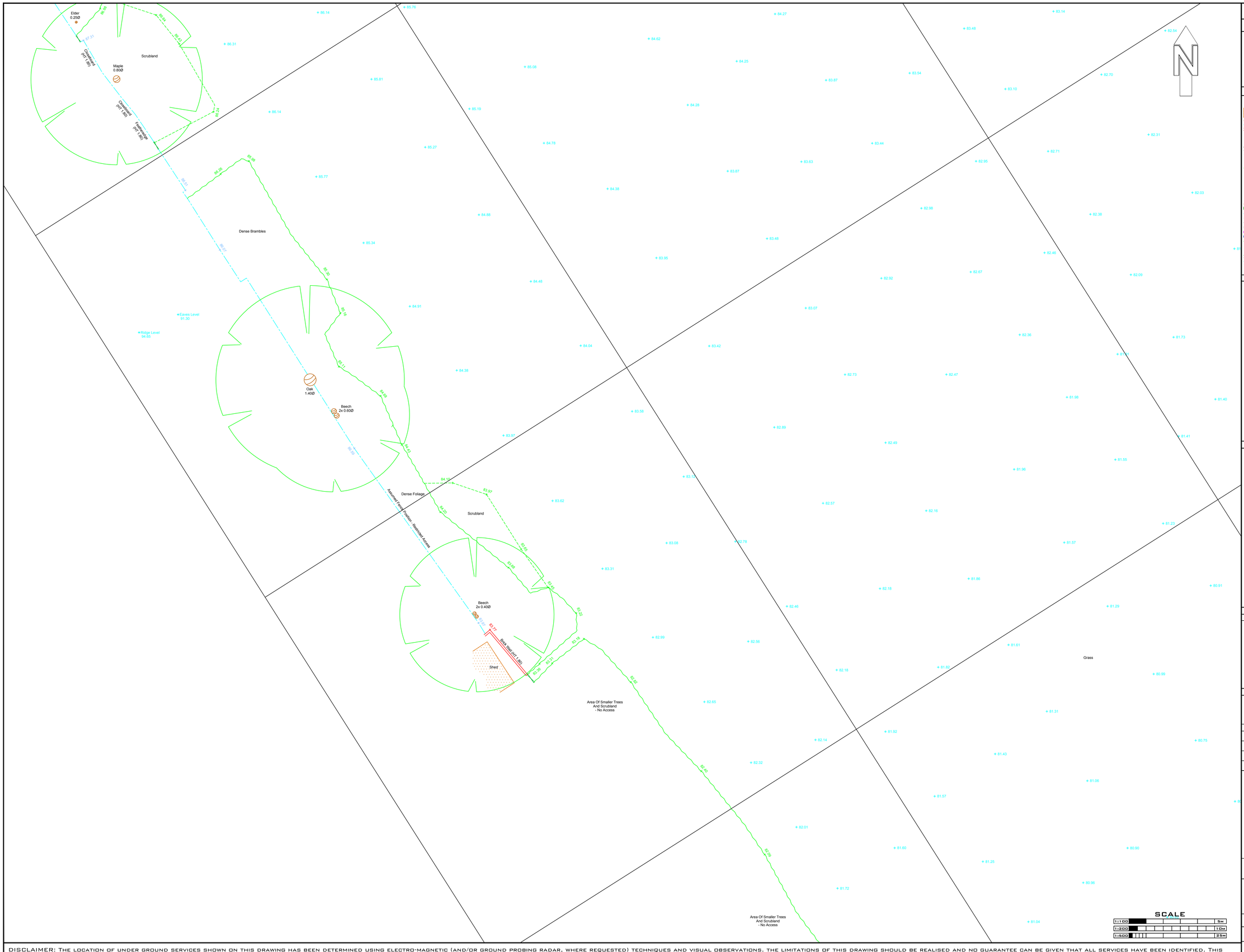
DISCLAIMER: THE LOCATION OF UNDER GROUND SERVICES SHOWN ON THIS DRAWING HAS BEEN DETERMINED USING ELECTRO-MAGNETIC (AND/OR GROUND PROBING RADAR, WHERE REQUESTED) TECHNIQUES AND VISUAL OBSERVATIONS. THE LIMITATIONS OF THIS DRAWING SHOULD BE REALISED AND NO GUARANTEE CAN BE GIVEN THAT ALL SERVICES HAVE BEEN IDENTIFIED. THIS DRAWING MAY NOT INCLUDE THE LOCATION OF ALL PUBLIC SERVICES THAT MAY CROSS THE SITE AND THEREFORE THE RELEVANT SERVICE DRAWINGS SHOULD BE OBTAINED FROM THE APPROPRIATE UTILITY COMPANY AND USED IN CONJUNCTION WITH THIS DRAWING. ADDITIONAL SERVICES, STRUCTURES OR OTHER BELOW GROUND OBSTRUCTIONS NOT INDICATED ON THIS DRAWING MAY BE PRESENT ON SITE. REFERENCE SHOULD BE MADE TO HISTORICAL PLANS AND AS BUILT DRAWINGS. EXCAVATIONS IN THE VICINITY OF SERVICES SHOULD BE CARRIED OUT WITH DUE DILIGENCE REF: HSG47 DOCUMENT 'AVOIDING DANGERS FROM UNDERGROUND SERVICES'. LOCATION ACCURACY IS DETERMINED BY REFERING TO MANUFACTURERS GUIDELINES FOR THE SYSTEMS DEPLOYED. REFERENCE SHOULD BE MADE TO THE LATEST VERSION OF SVS LTD SITE PROCEDURES DOCUMENT FOR UTILITY LOCATION SURVEYS.



SCALE

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1:200	10M
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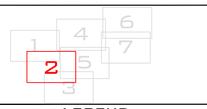
THE NAME IN SURVEYS

SHEET LAYOUT



LEGEND

- SVS01 102.000 — Survey Station
- Level
- Building
- Canopy
- Fence
- Wall
- Hedge
- Kerb
- Drop Kerb
- Kerb Top
- MH CL DD.DD — Manhole
- Verge
- Tree (Shown To Scale)
- Tree Canopy
- Foliage
- Furniture
- Gate
- Step
- Line Markings
- Overheads
- Speed Hump
- Gully Run
- Drainage Channel
- Banks
- Trench Scar
- Contour Major
- Contour Minor
- Cabinet
- Foul Drainage
- Surface Drainage
- Combined Drainage
- Electricity
- Electricity High Voltage
- Traffic Signals
- Gas
- Water
- Cable Television
- Close Circuit Television
- Communication
- British Telecom
- Compressed Air
- Offset Fill-Line
- Oil Pipe
- Pipe
- Ventilation
- Fuel Line
- Vapour Recovery
- Gauge Line
- Telemetry
- Fibre Optics
- Unknown
- Overhead Line
- Historical By Layer
- End Of Trace
- Do Not Drill / Banded Pipes
- T TANK * - W= Water U=Unknown F=Foam P=Product D=Concrete
- Stantion
- Pump Island
- BH 100.00 — Borehole

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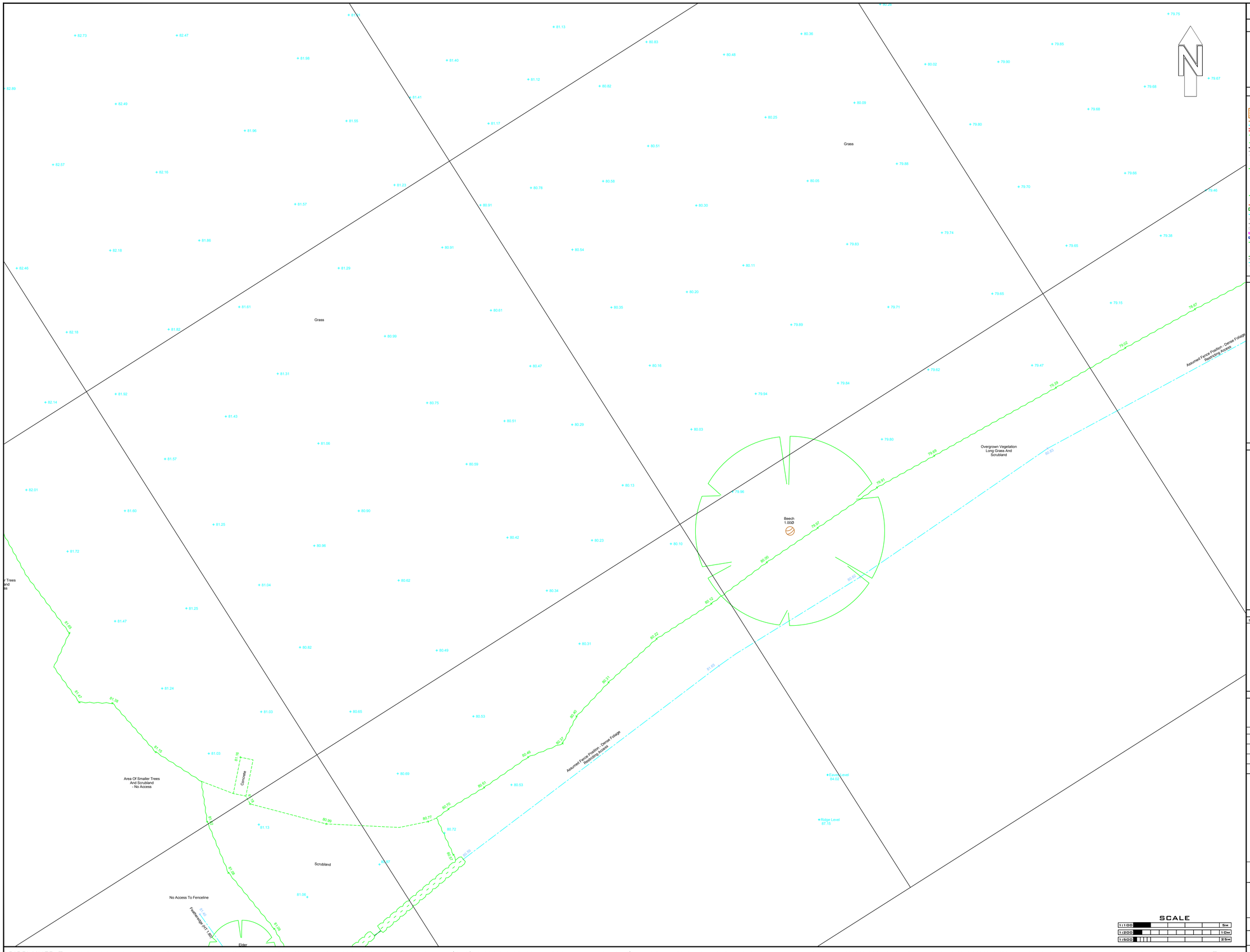

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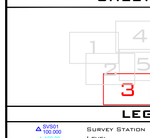

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CLIENT: Hydrock

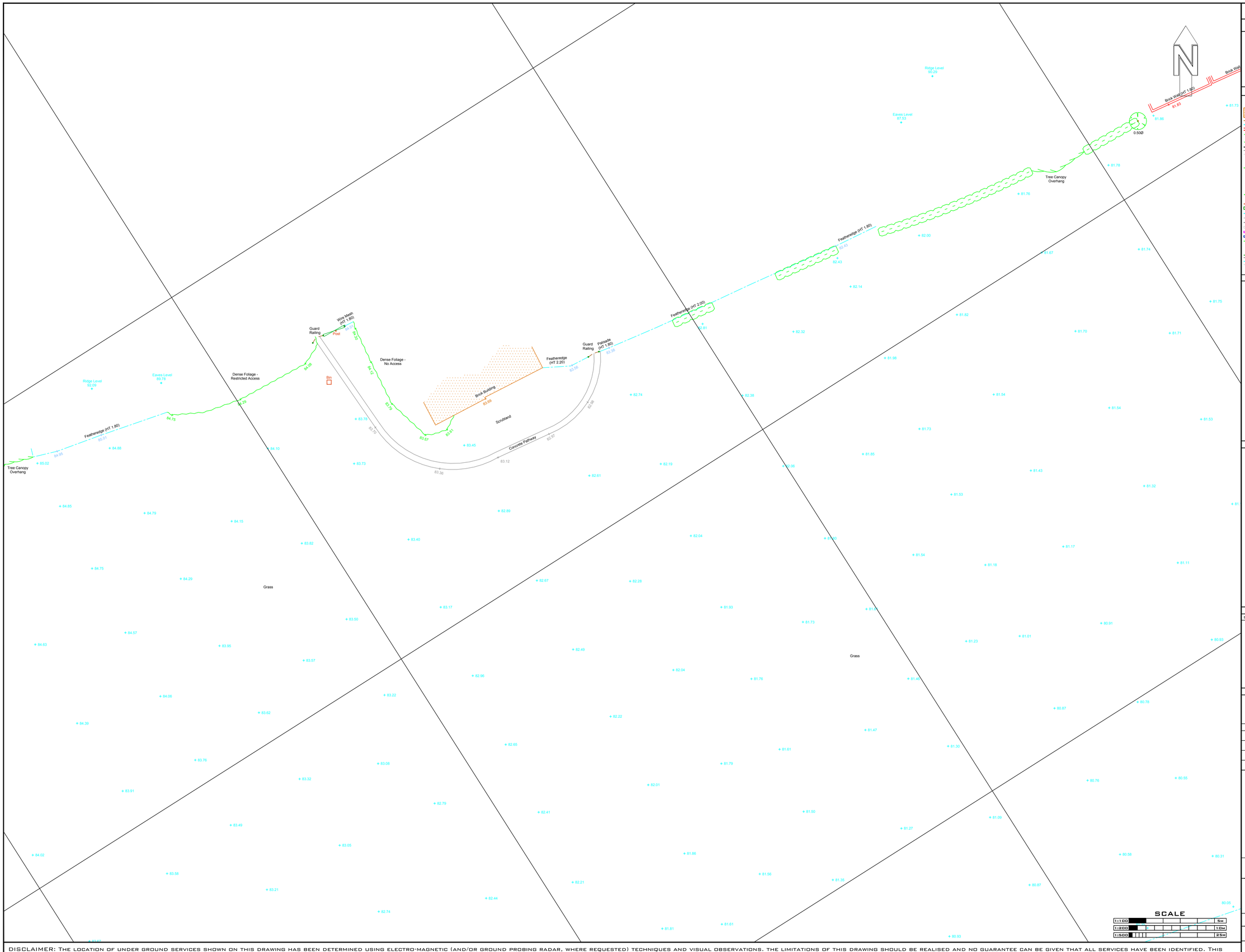
SITE LOCATION:
CHINGFORD DEVELOPMENT
ST MARTINS ROAD
NOTTINGHAM

DRAWING TITLE: TOPOGRAPHIC SURVEY

SURVEYED BY:	DRAWN BY:	APPROVED BY:
LN/LC	LN	SF

DRAWING NO:	SURVEY DATE:
0118-HYK-11114	24-01-2018

SCALE:	SHEET NO:	REV:
1:200 @A1	3 OF 7	



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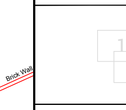
THE NAME IN SURVEYS

SHEET LAYOUT



LEGEND

Survey Station SVS01 102.000
Level
Building
Canopy
Fence
Wall
Hedge
Kerb
Drop Kerb
Kerb Top
Manhole MH CL DD.DD
Verge
Tree (Shown To Scale)
Tree Canopy Foliage
Furniture
Gate
Step
Line Markings
Overheads OH
Speed Hump
Gully Run
Drainage Channel
Banks
Trench Scar
Contour Major
Contour Minor
Cabinet

Foul Drainage
Surface Drainage
Combined Drainage
Electricity E
Electricity High Voltage HV
Traffic Signals TL
Gas GAS
Water W
Cable Television CATV
Close Circuit Television CCTV
Communication COMM
British Telecom BT
Compressed Air A
Offset Fill-Line O
Oil Pipe OIL
Pipe P
Ventilation V
Fuel Line F
Vapour Recovery VR
Gauge Line GA
Telemetry T
Fibre Optics FO
Unknown UNK
Overhead Line OH
Historical by Layer
End Of Trace UNK

Do Not Drill / Banded Pipes
T TANK * - W= Water U=Unknown F=Foam P=Product D=Concrete
Stantion
Pump Island
BH 100.00 Borehole

ABBREVIATIONS

A/C	AIR CONDITIONER	OSA	OFF SURVEY AREA
A/R	ASSUMED ROUTE	OSBM	ORDNANCE SURVEY BENCH MARK
AV	AIR VALVE	PL	PIT LEVEL
BOLL	BOLLARD	PR	PIPE RISER
ILLU BOLL	ILLUMINOUS BOLLARD	P&R FENCE	POST & RAIL FENCE
BH	BOREHOLE	RET WALL	RETAINING WALL
BTIC	BRITISH TELECOM COVER	RE	RODDING EYE
C/BOX	CONTROL BOX	RS	ROAD SIGN
C/B FENCE	CLOSEBOARD FENCE	RWP	RAIN WATER PIPE
CR	CABLE RISER	S/A	SOAK AWAY
CTV	CABLE TV	SAP	SAPLING
CP	CATCHPIT	S/C	SOUND CONNECTED
CONC	CONCRETE	SEC FENCE	SECURITY FENCE
CL	COVER LEVEL	SL	SPOT LIGHT
D	DEPTH / DEEP	SP	SOIL PIPE
D/CHAN	DRAINAGE CHANNEL	ST	STOP TAP
DP	DOWN PIPE	STN	STATION (DATUM POINT)
EC	ELECTRICITY COVER	SV	STOP VALVE
ER	EARTH ROD	SVP	SOIL VENT PIPE
EP	ELECTRICITY POLE	TBM	TEMPORARY BENCH MARK
EOT	END OF TRACE	TCL	TREE CANOPY LEVEL
FFL	FINISHED FLOOR LEVEL	TOW	TOP OF WALL LEVEL
F/BED	FLOWER BED	TFR	TAKEN FROM RECORDS
FH	FIRE HYDRANT	THL	THRESHOLD LEVEL
FS	FIRE SWITCH	TL	TRAFFIC LIGHT
GV	GAS VALVE	TP	TELEGRAPH POLE
G	GULLY	TPAR	TIMBER POST & RAIL
G-RUN	GULLY RUN	UTL	UNABLE TO LOCATE
HT	HEIGHT	UTR	UNABLE TO RAISE
IC	INSPECTION COVER	UTS	UNABLE TO SURVEY
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KD	KERB OUTLET	VR	VAPOUR RECOVERY
LP	LAMP POST	VP	VENT PIPE
MB	MULTI-ROLE	WH	WATER HETER
MH	MANHOLE	WD	WASH OUT
MKR	MARKER	WFD	WATER FILLED CHAMBER
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UTILITY NOTES

STATION COORDINATES

STATION	EASTINGS	NORTHINGS	LEVEL	DESCRIPTION
SVS01	452275.950	341835.240	81.176	Peg
SVS02	452109.064	341745.420	82.852	Peg

TOPOGRAPHICAL NOTES

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SITE VISION SURVEYS LIMITED
UTILITY | TOPOGRAPHICAL | MAPPING
T: 01788 575036 W: SVSLTD.NET

CLIENT: Hydrock

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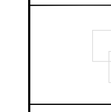

LEGEND

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Drop Kerb
Kerb Top
Manhole
Verge
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Foliage
Furniture
Gate
Step
Line Markings
Overheads
Speed Hump
Gully Run
Drainage Channel
Banks
Trench Scar
Contour Major
Contour Minor
Cabinet

Foul Drainage
Surface Drainage
Combined Drainage
Electricity
Electricity High Voltage
Traffic Signals
Gas
Water
Cable Television
Close Circuit Television
Communication
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Compressed Air
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1:200 @A1	5 OF 7	

SCALE
1:100 5M
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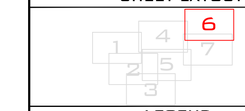

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Drainage Channel
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Trench Scar
Contour Major
Contour Minor
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Foul Drainage
Surface Drainage
Combined Drainage
Electricity
Electricity High Voltage
Traffic Signals
Gas
Water
Cable Television
Close Circuit Television
Communication
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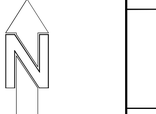

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- Surface Drainage
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- Close Circuit Television
- Communication
- British Telecom
- Compressed Air
- Offset Fill-Line
- Oil Pipe
- Pipe
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1:200 10m
1:500 25m

DISCLAIMER: THE LOCATION OF UNDER GROUND SERVICES SHOWN ON THIS DRAWING HAS BEEN DETERMINED USING ELECTRO-MAGNETIC (AND/OR GROUND PROBING RADAR, WHERE REQUESTED) TECHNIQUES AND VISUAL OBSERVATIONS. THE LIMITATIONS OF THIS DRAWING SHOULD BE REALISED AND NO GUARANTEE CAN BE GIVEN THAT ALL SERVICES HAVE BEEN IDENTIFIED. THIS DRAWING MAY NOT INCLUDE THE LOCATION OF ALL PUBLIC SERVICES THAT MAY CROSS THE SITE AND THEREFORE THE RELEVANT SERVICE DRAWINGS SHOULD BE OBTAINED FROM THE APPROPRIATE UTILITY COMPANY AND USED IN CONJUNCTION WITH THIS DRAWING. ADDITIONAL SERVICES, STRUCTURES OR OTHER BELOW GROUND OBSTRUCTIONS NOT INDICATED ON THIS DRAWING MAY BE PRESENT ON SITE. REFERENCE SHOULD BE MADE TO HISTORICAL PLANS AND AS BUILT DRAWINGS. EXCAVATIONS IN THE VICINITY OF SERVICES SHOULD BE CARRIED OUT WITH DUE DILIGENCE REF: HSG47 DOCUMENT "AVOIDING DANGERS FROM UNDERGROUND SERVICES". LOCATION ACCURACY IS DETERMINED BY REFERING TO MANUFACTURERS GUIDELINES FOR THE SYSTEMS DEPLOYED. REFERENCE SHOULD BE MADE TO THE LATEST VERSION OF SVS LTD SITE PROCEDURES DOCUMENT FOR UTILITY LOCATION SURVEYS.

Chingford Road Site - Draft Development Principles

Key

- Potential New Housing (164)
- Listed Buildings
- Retained/Enhanced Public Open Space
- Potential New Vehicular Access
- New Green Link / Corridor

STRELLEY ROAD

YATESBURY CRESCENT

DENEWOOD CRESCENT

St Martin's Cottages

St Martin's Church

Old Rectory

Key View

Enhanced Public Open Space

Westbury School

WIGMAN ROAD

CHINGFORD ROAD

Bilborough Park

(Indicative Layout for Illustrative Purposes Only)

Nottingham City Council

Appendix B

Site Walkover Photographs

Plate 1: Site entrance.

Plate 2: Looking towards overgrown area in the northwestern site boundary.

Plate General view of the site, looking towards the southwest.

Plate 3: Undergrowth on the northern site perimeter.

Plate 4: Looking towards the northwestern corner of the site.

Plate 5: Burnt-out motor scooter in southwest of the site.

Plate 6: Looking east towards the school development.

Plate 7: General view, looking towards the south.

Appendix C

Historical Ordnance Survey Maps

Groundsure

INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES
1:1,2500

NATIONAL GRID
1:1,250 & 1:2,500

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COUNTY SERIES 1:2,500

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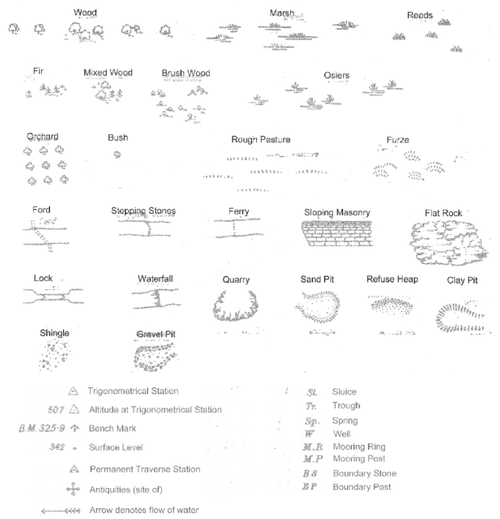

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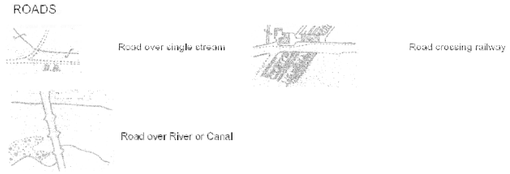

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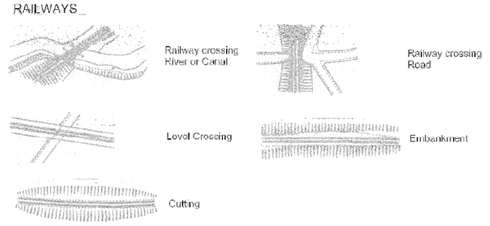


ABBREVIATIONS

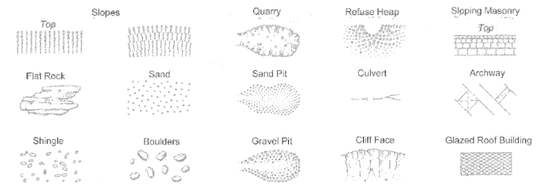
Trigonometrical Station
507 Altitude at Trigonometrical Station
B.M.325·9 Bench Mark
342 Surface Level
Permanent Traverse Station
Antiquities (site of)
Arrow denotes flow of water

Sl Sluice
Tr Trough
Sp Spring
W Well
M.B Mooring Ring
M.P Mooring Post
B S Boundary Stone
B P Boundary Post

NATIONAL GRID 1:2,500 & 1:1,250

GENERAL FEATURES

Non-coniferous Trees
Coniferous Trees
Surveyed Trees
Orchard Trees
Coppice, Osier
Scrub
Bracken
Heath
Rough Grassland
Marsh, Saltings
Reeds
Slopes
Cliff
Cave Entrance
Rock
Boulders
Sloping Masonry
Roofed Building
Glasshouse
Archway
Change of boundary marking
see AREAS notes
Antiquity (site of)
Culvert
Direction of water flow
Electricity Pylon
ETL Electricity Transmission Line
Triangulation Station
ts Traverse Station (permanent)
Bench Mark
Surface Level
rp Revision Point (instrumentally fixed)
Revision Point & Bench Mark coincident



BOUNDARIES

England & Wales

County Boundary (geographical)
County & Civil Parish Boundary coterminous
Admin County or County Borough Boundary
London Borough Boundary
M B Bdy, U D Bdy, R D Bdy — County District Boundaries based on civil parish

England, Wales & Scotland

Civil Parish Boundary
Boro (or Burgh) Const & Ward Bdy / Co Const Bdy — Parly & Ward Boundaries based on civil parish
Boro (or Burgh) Const & Ward Bdy / Co Const Bdy — Parly & Ward Boundaries not based on civil parish

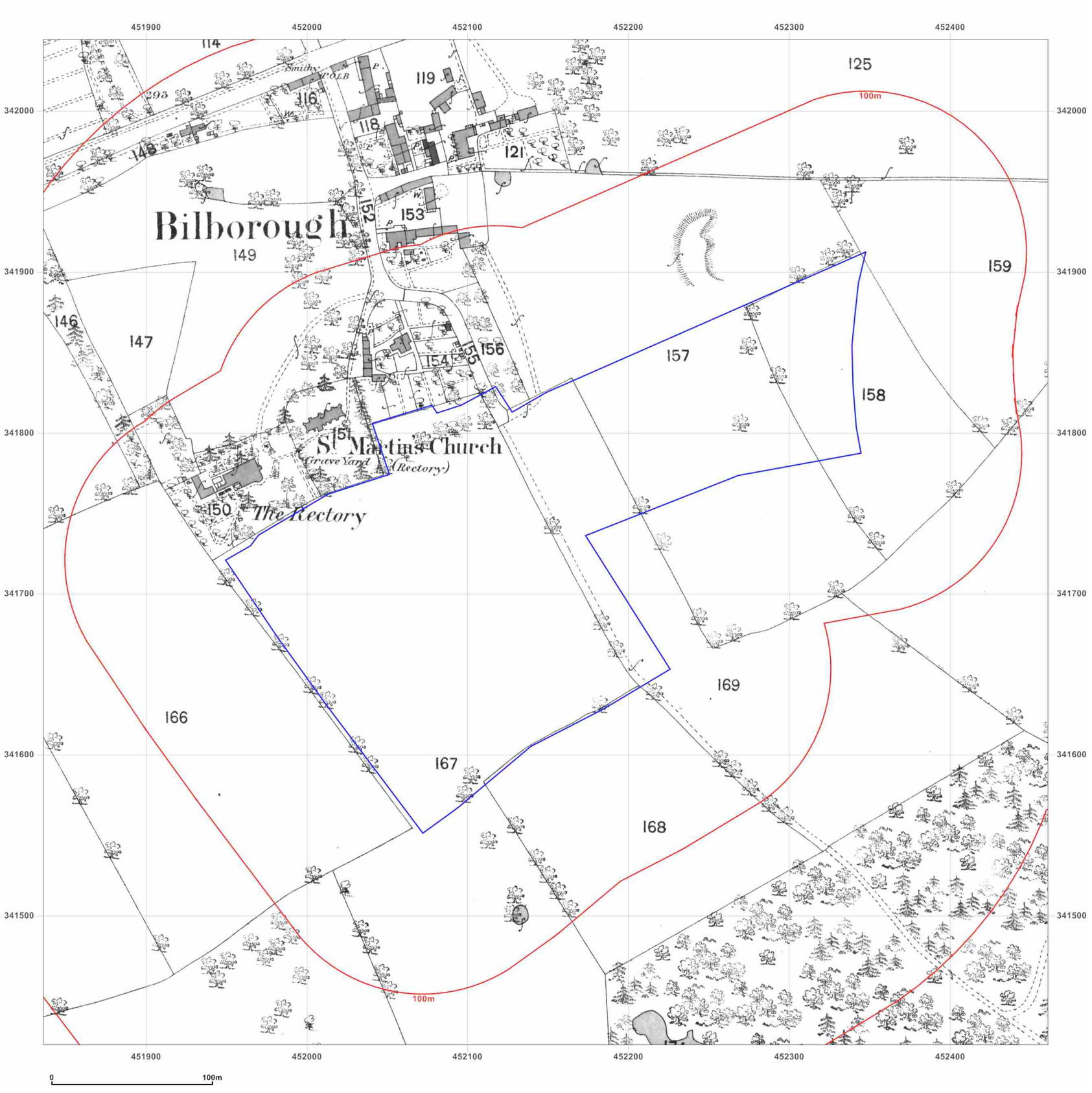
Scotland

* County Boundary (geographical)
† " " "
Co Cnl Bdy — * County Council Boundary
Co Cnl Bdy — † " " "
Co of City Bdy — * County of the City Boundary
Co of City Bdy — † " " " " "
Burgh Bdy — * Burgh Boundary
Burgh Bdy — † " "
Dist Bdy — * District Council Boundary
Dist Bdy — † " " "

* Not with parish † Coincident with parish

ABBREVIATIONS

B H Beer House
B M Bench Mark
B P Boundary Post
B S Boundary Stone
C Crane
C H Club House
Chy Chimney
Cn Capstan
D Fn Drinking Fountain
Dk Dock
El P Electricity Pillar or Post
E T L Electricity Transmission Line
F A Fire Alarm
F A P Fire Alarm Pillar
F B Filter Bed, Foot Bridge
F B M Fundamental Bench Mark
F S Flagstaff
F Sta Fire Station
G P Guide Post
G V C Gas Valve Compound
H Hydrant or Hydraulic
ha Hectares
L B Letter Box
L B Sta Lifeboat Station
L C Level Crossing
L G Loading Gauge
L Ho Lighthouse
L Twr Lighting Tower
m Metres
M H W Mean High Water
M H W S Mean High Water Springs
M L W Mean Low Water
M L W S Mean Low Water Springs
M P Mile or Mooring Post
M P U Mail Pick-up
M S Mile Stone
N T National Trust
N T L Normal Tidal Limit
N T S National Trust for Scotland
P Pillar, Pole or Post
P C Public Convenience
P C B Police Call Box
P H Public House
P O Post Office
Pp Pump
P T P Police Telephone Pillar
Resr Reservoir
R H Road House
rp Revision Point
S Stone
S B Signal Box
S L Signal Light
Sl Sluice
S P Signal Post
Spr Spring
S Sta Signal Station
T C B Telephone Call Box
T C P Telephone Call Post
Tk Tank or Track
Tr Trough
ts Traverse Station
W Well
W B Weighbridge
Wd Pp Wind Pump
Wks Works
Wr Pt Water Point
Wr T Water Tap



Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1882**

Scale: 1:2,500

Printed at: 1:2,500

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Edition 1882
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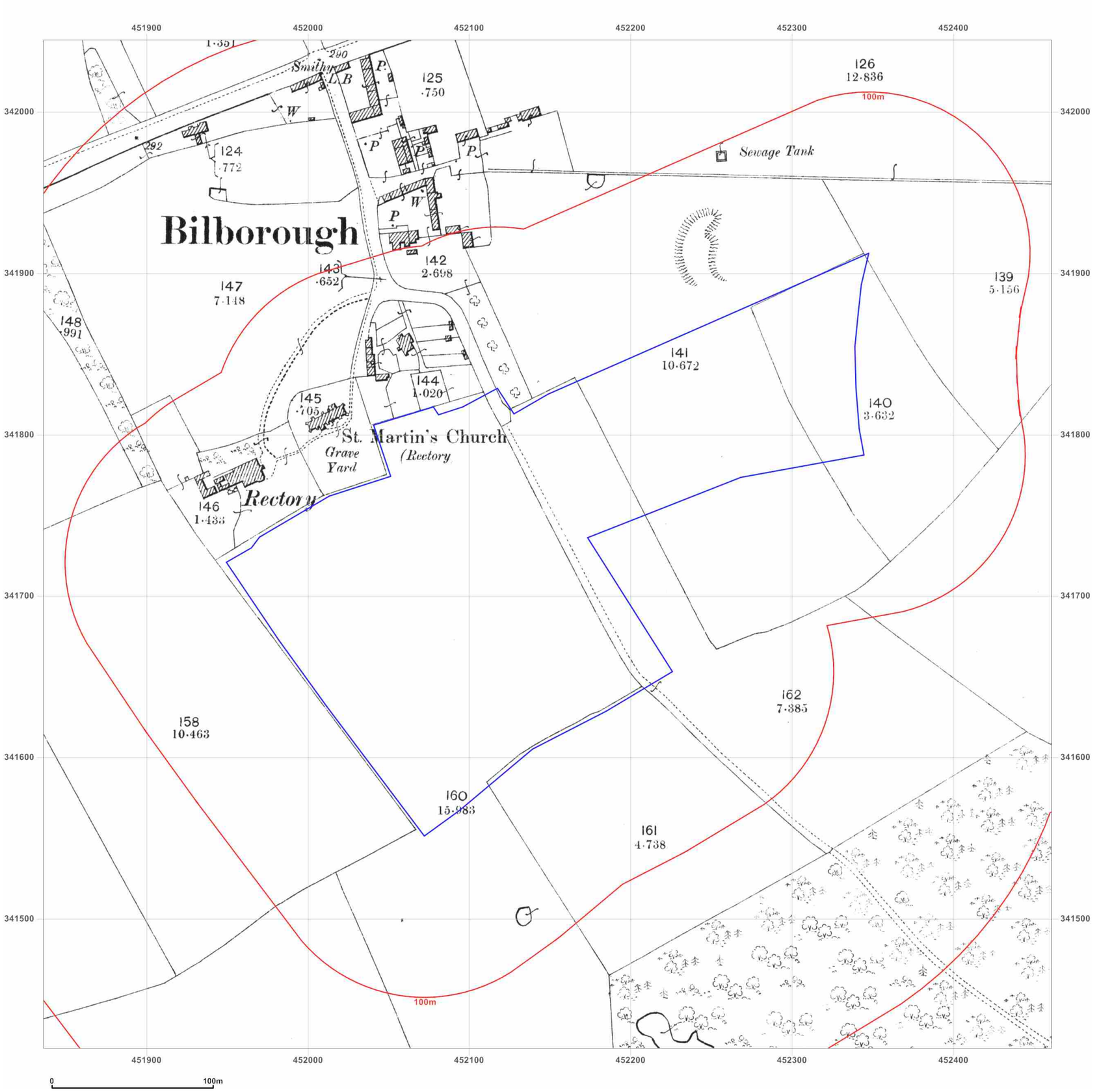

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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1900**

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Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1915**

Scale: 1:2,500

Printed at: 1:2,500

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Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1954**

Scale: 1:1,250

Printed at: 1:2,000

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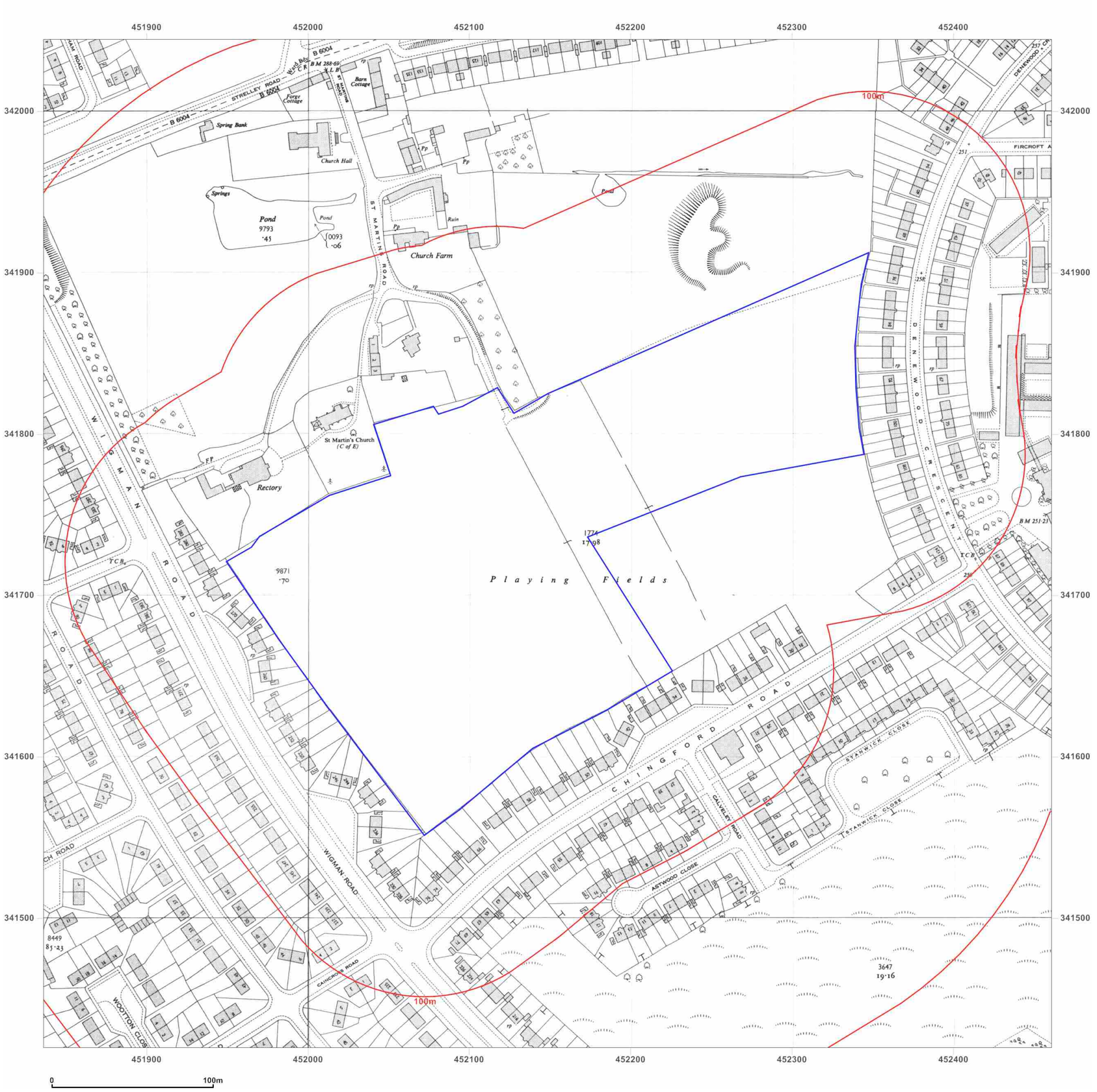

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Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1954**

Scale: 1:2,500

Printed at: 1:2,500

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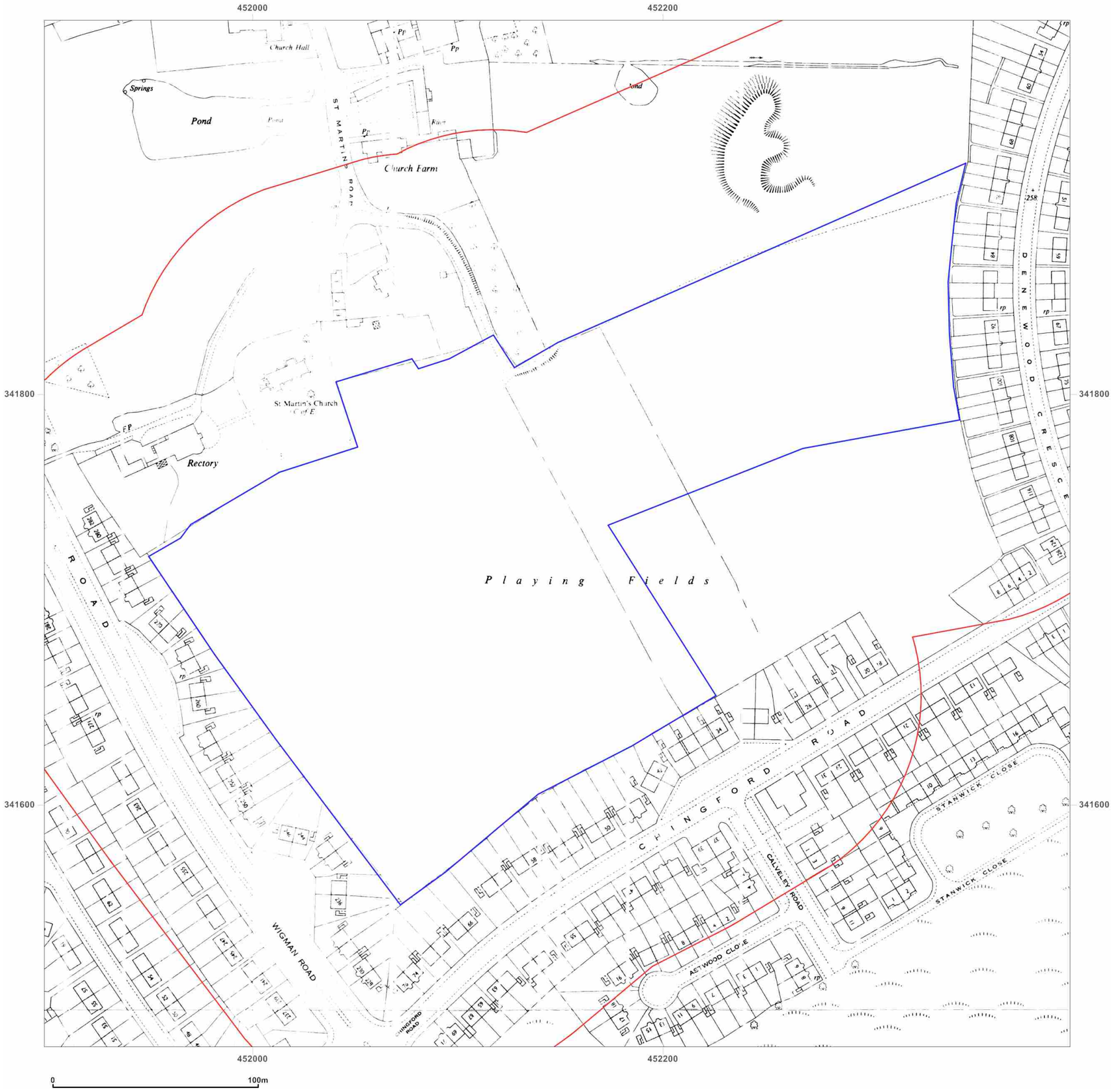

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OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

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Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1955**

Scale: 1:1,250

Printed at: 1:2,000

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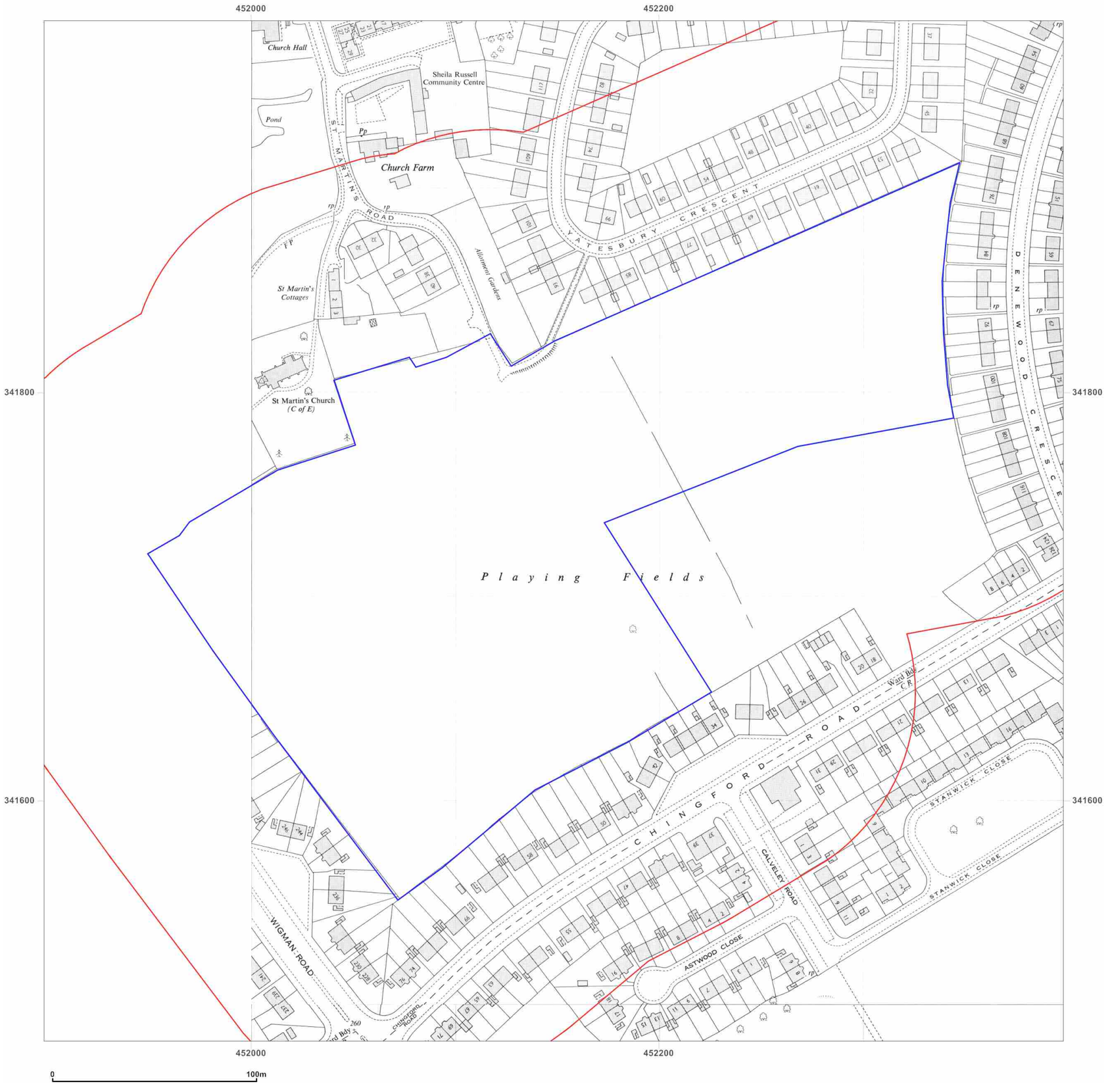

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Site Details:

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OFF ST MARTINS ROAD,
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Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1960-1964**

Scale: 1:1,250

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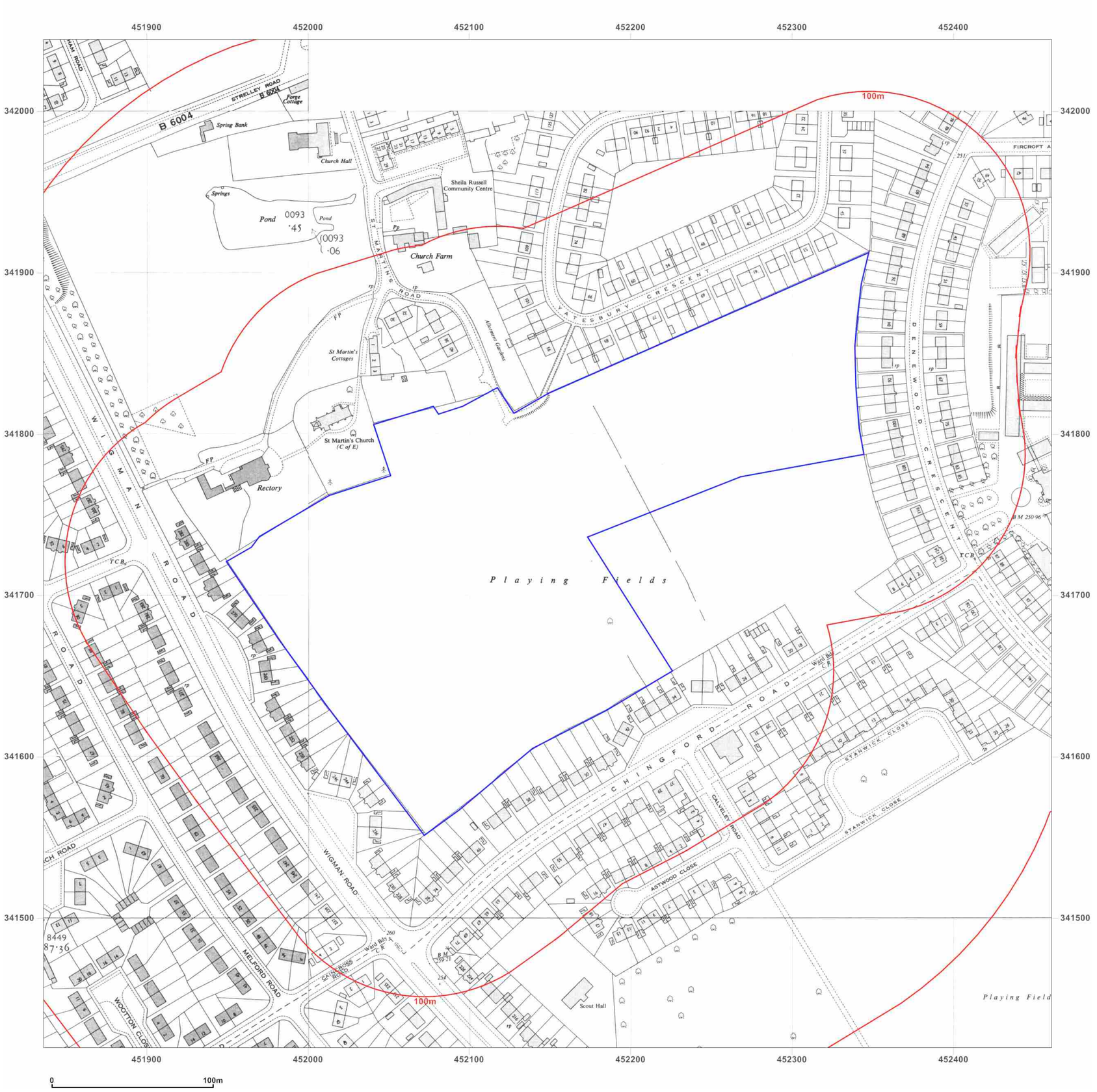

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OFF ST MARTINS ROAD,
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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1959-1964**

Scale: 1:2,500

Printed at: 1:2,500

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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1968-1971**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1967
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Surveyed 1968
Revised 1968
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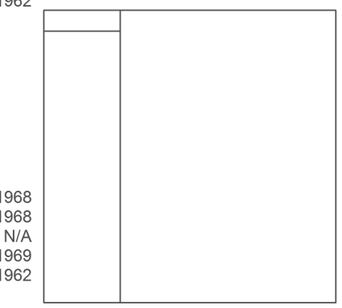

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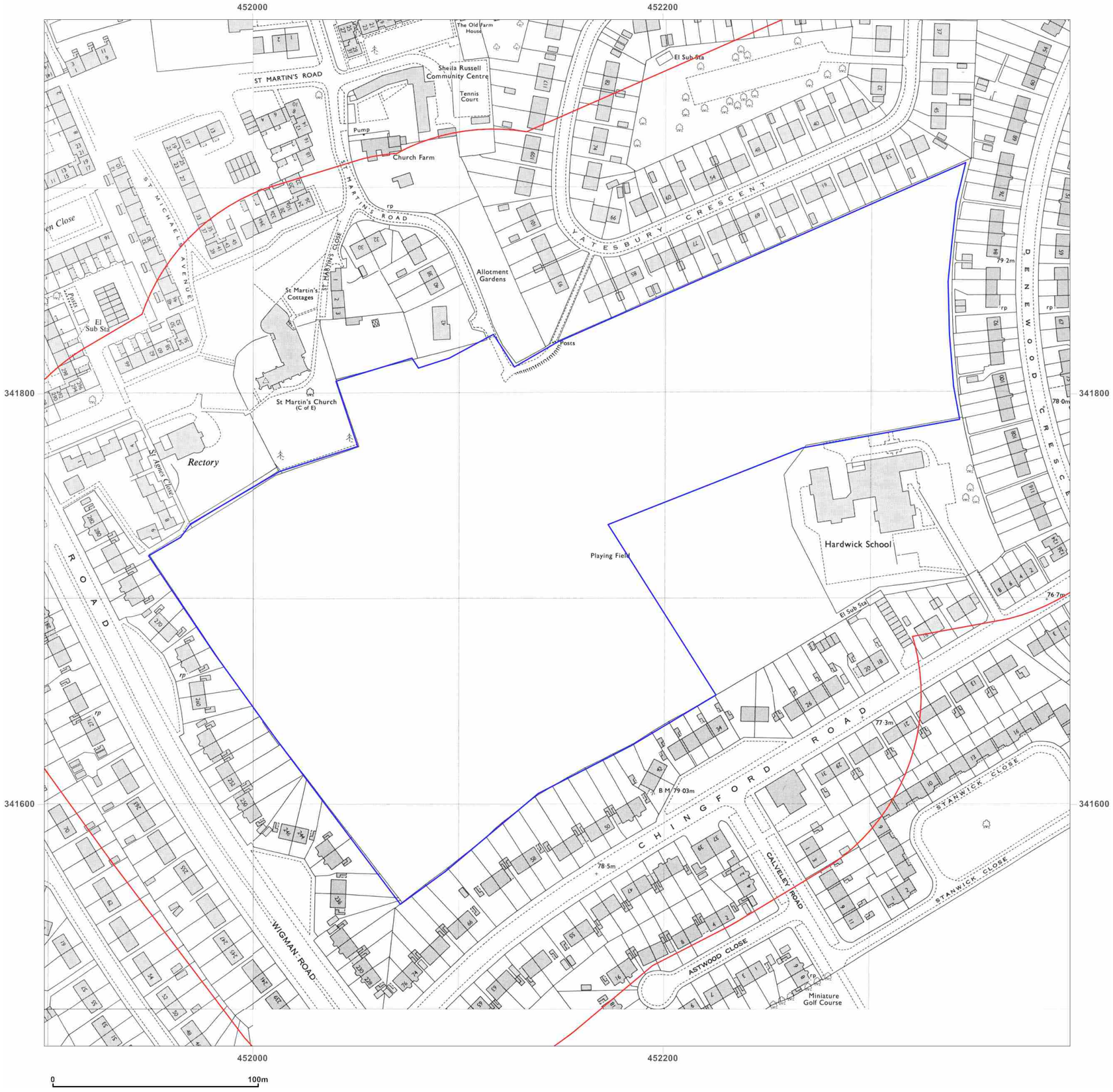

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Report Ref: HYD-4695771
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Map Name: National Grid

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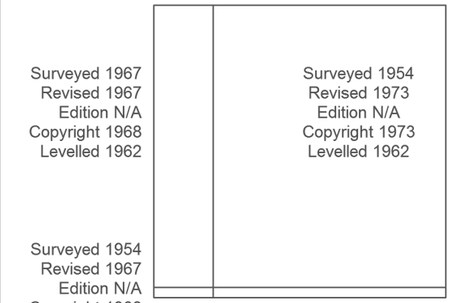

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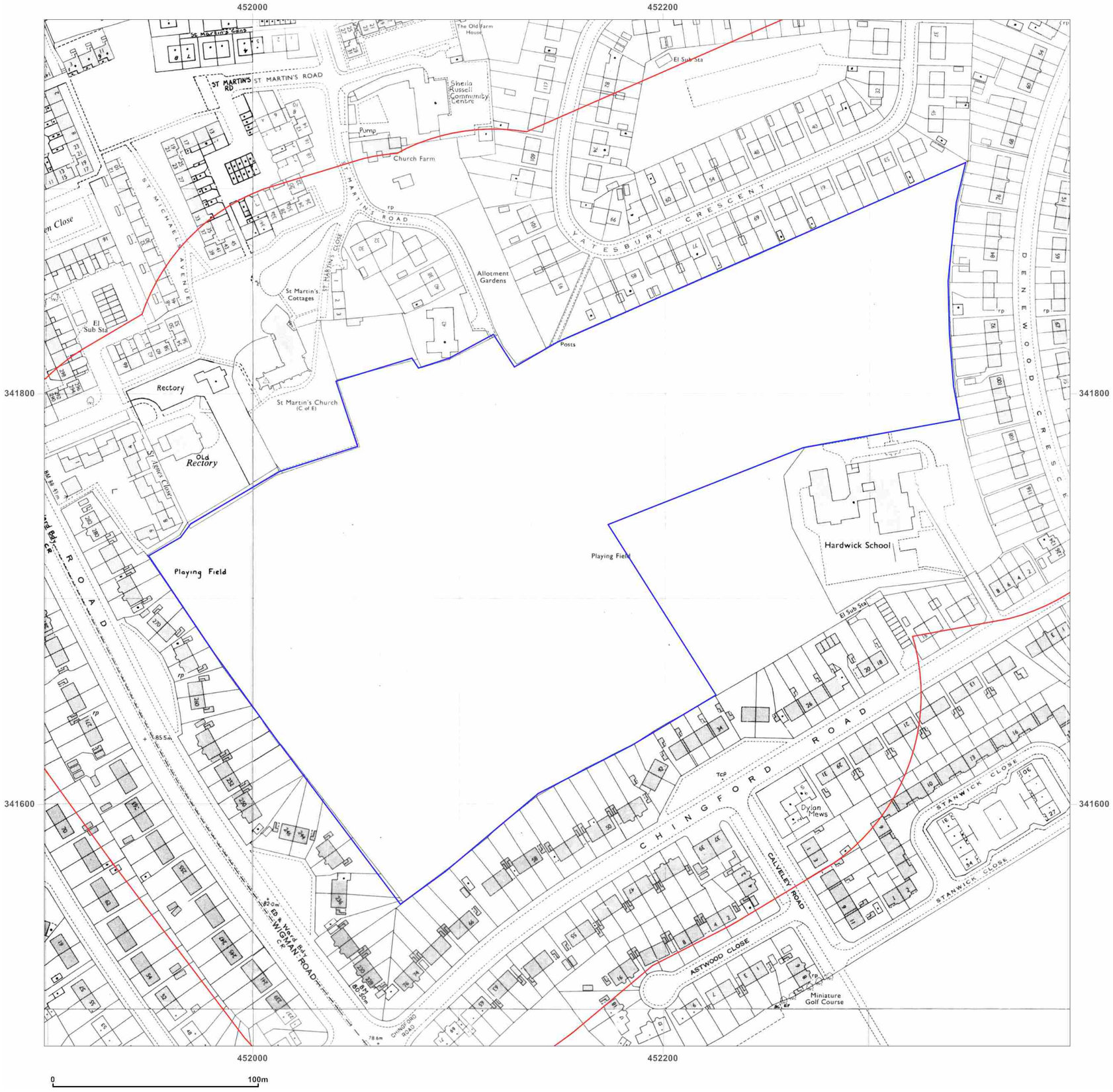

Groundsure INSIGHTS

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CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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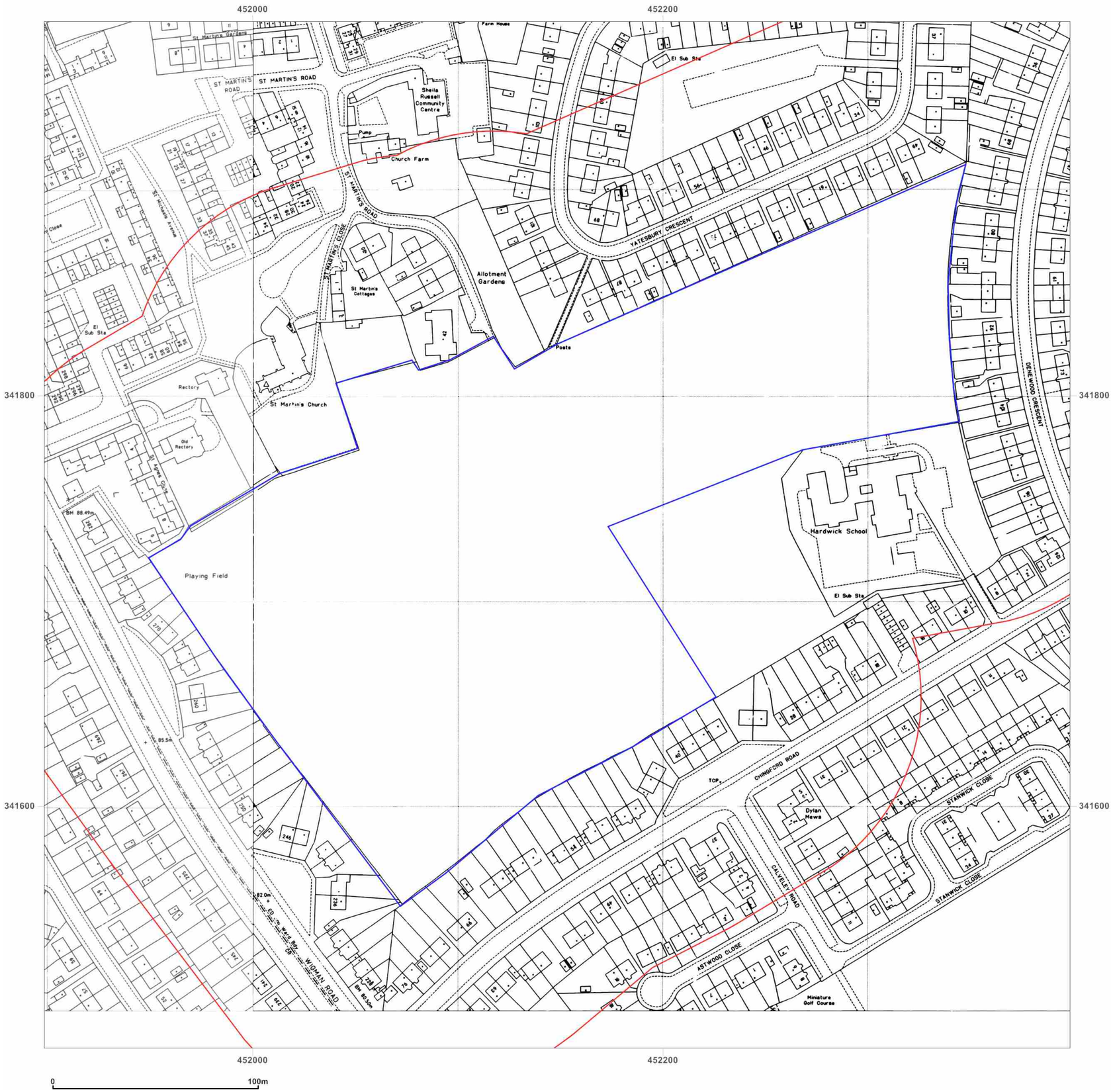

Groundsure INSIGHTS

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CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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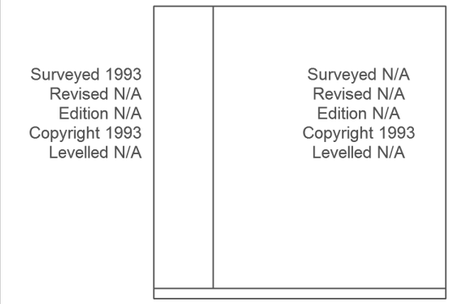

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Groundsure

INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES & NATIONAL GRID
1:10,560 & 1:10,000

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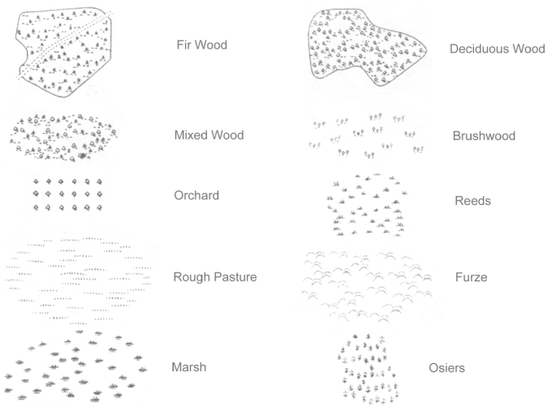
COUNTY SERIES 1:10,560

VEGETATION



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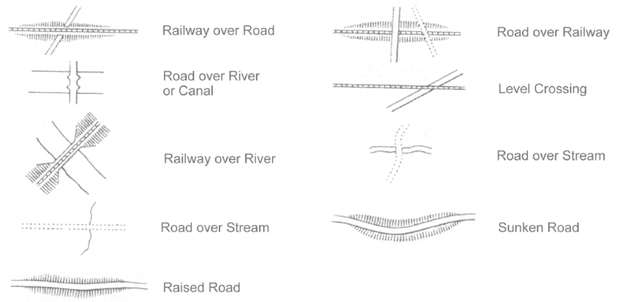
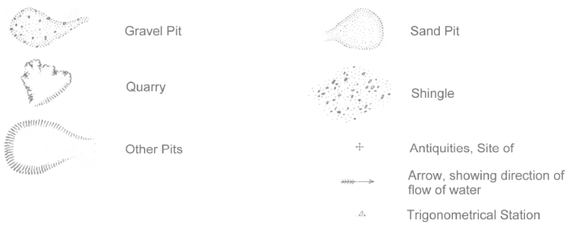
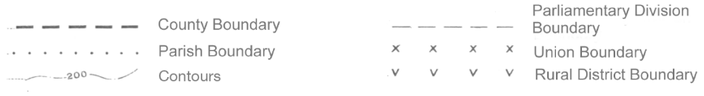


RAILWAYS

GENERAL FEATURES



BOUNDARIES



NATIONAL GRID 1:10,000 & 1:10,560

HEIGHTS (METRES)

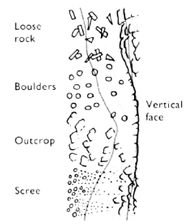
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by ground survey • 163m / air survey

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

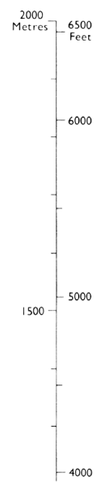
Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

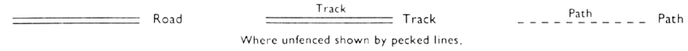
Metres - Feet



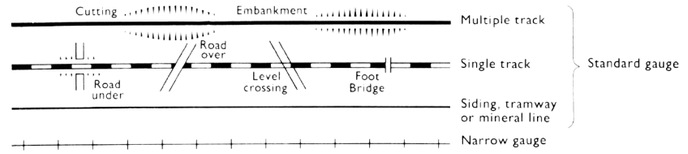
ABBREVIATIONS

BP,BS	Boundary Post or Stone	PO	Post Office
Ch	Church	PC	Public Convenience
CH	Club House	PH	Public House
F Sta	Fire Station	S	Stone
FB	Foot Bridge	Spr	Spring
Fn	Fountain	TCB	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post
MP,MS	Mile Post or Stone	TH	Town Hall
P	Pole or Post	W	Well
Pol Sta	Police Station	Y	Youth hostel

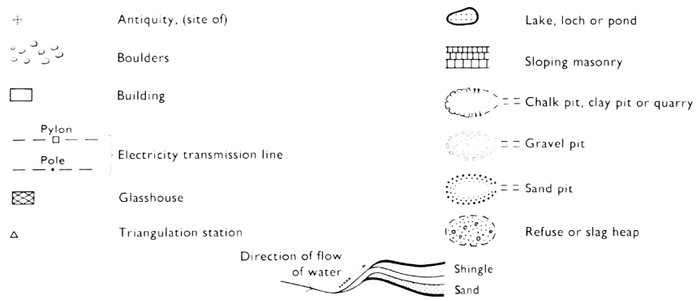
ROADS



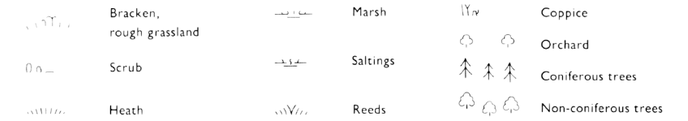
RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken ( ) and rough grassland ( ) are shown separately.

Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1881-1884**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1881
Revised 1881
Edition 1881
Copyright N/A
Levelled N/A

Surveyed 1883
Revised N/A
Edition 1884
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NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1883-1885**

Scale: 1:10,560

Printed at: 1:10,560

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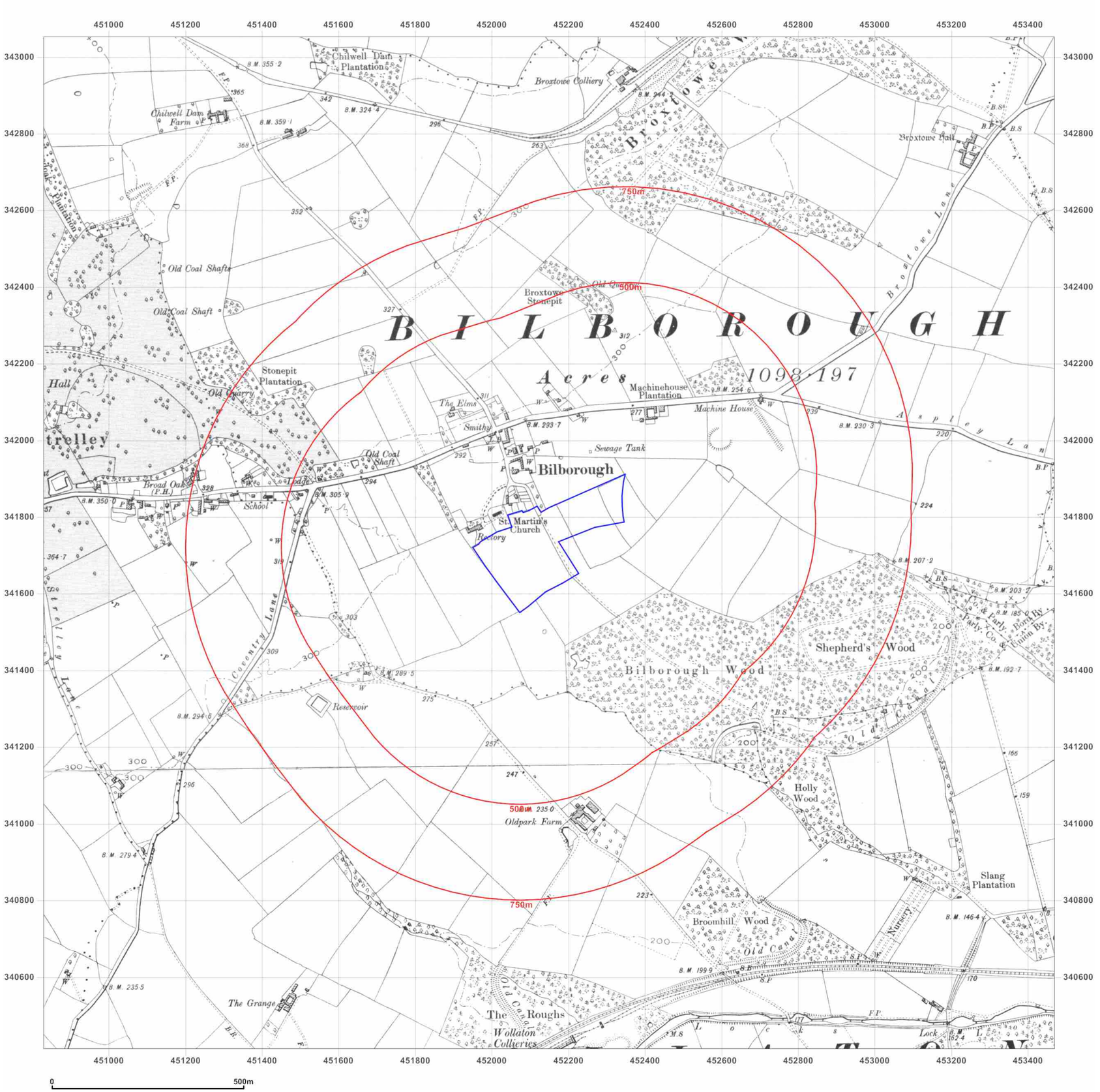

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Site Details:

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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1899**

Scale: 1:10,560

Printed at: 1:10,560

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Edition 1899
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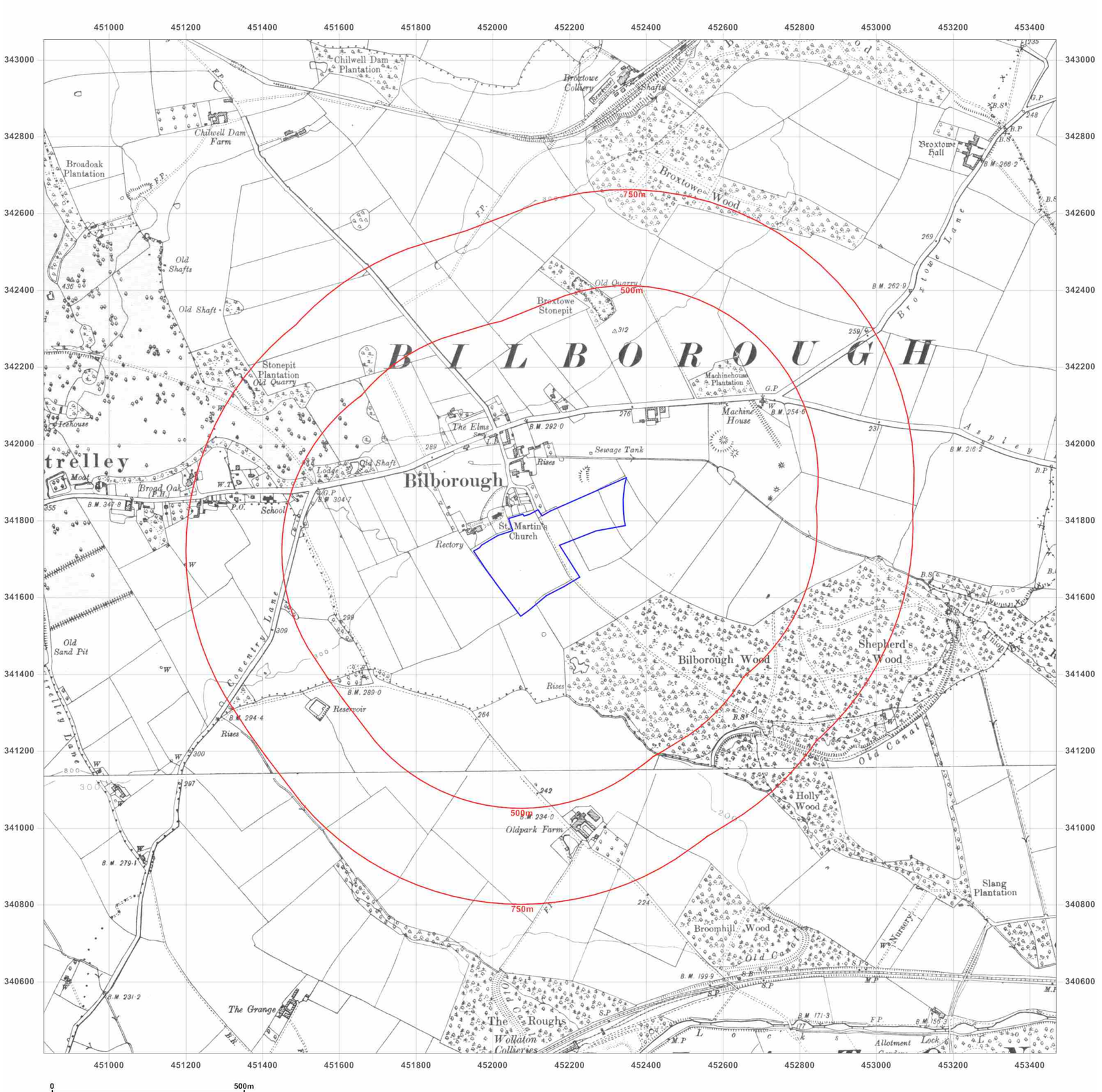

Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1880
Revised 1914
Edition 1921
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Surveyed 1882
Revised 1913
Edition 1921
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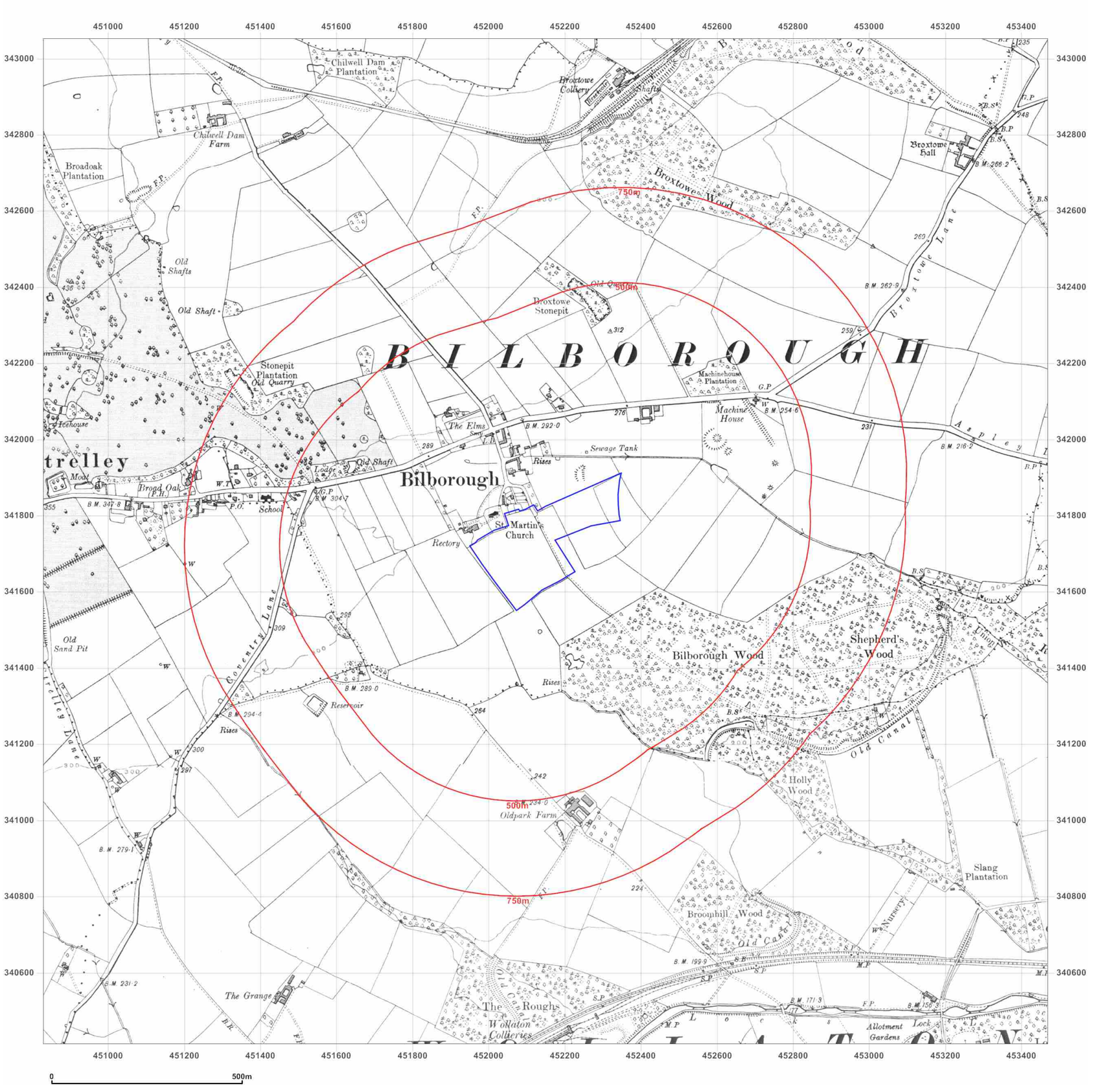

Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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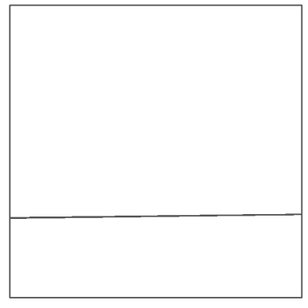
Surveyed 1879
Revised 1921
Edition 1921
Copyright N/A
Levelled 1915



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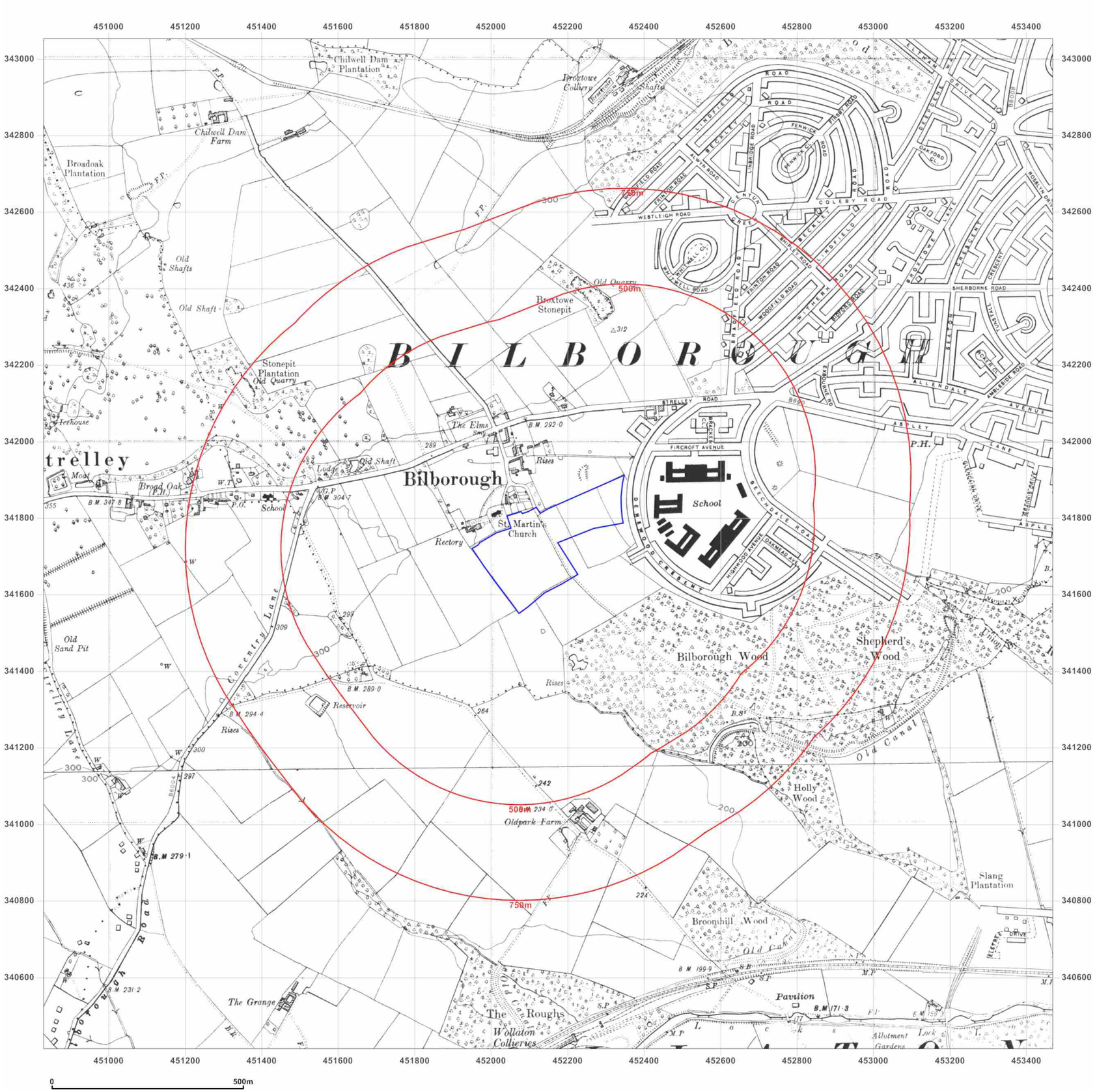

Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

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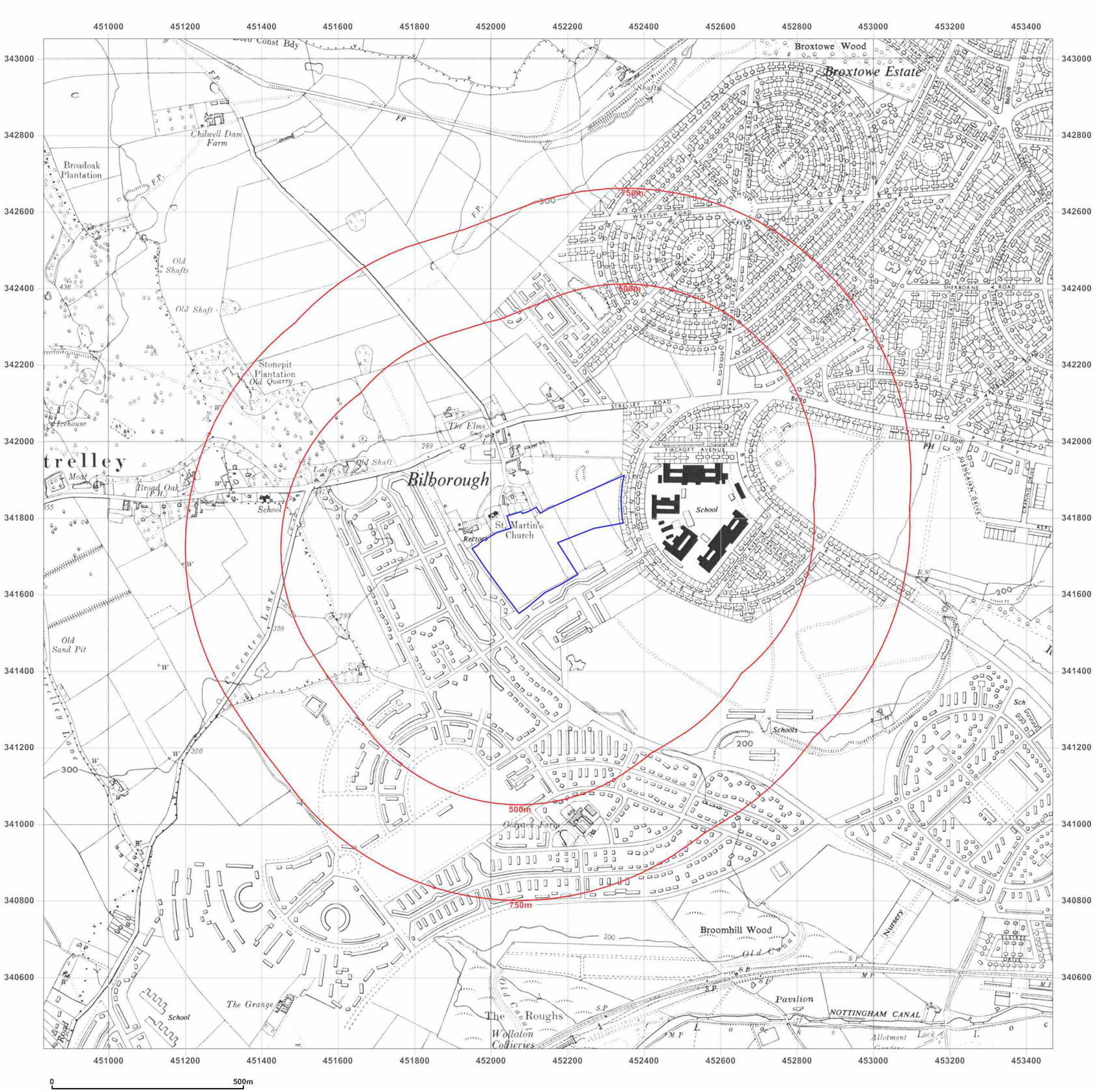

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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: Provisional

Map date: **1955**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised 1955
Edition N/A
Copyright 1955
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Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: Provisional

Map date: **1967**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1967
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NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1973**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1971
Revised 1973
Edition N/A
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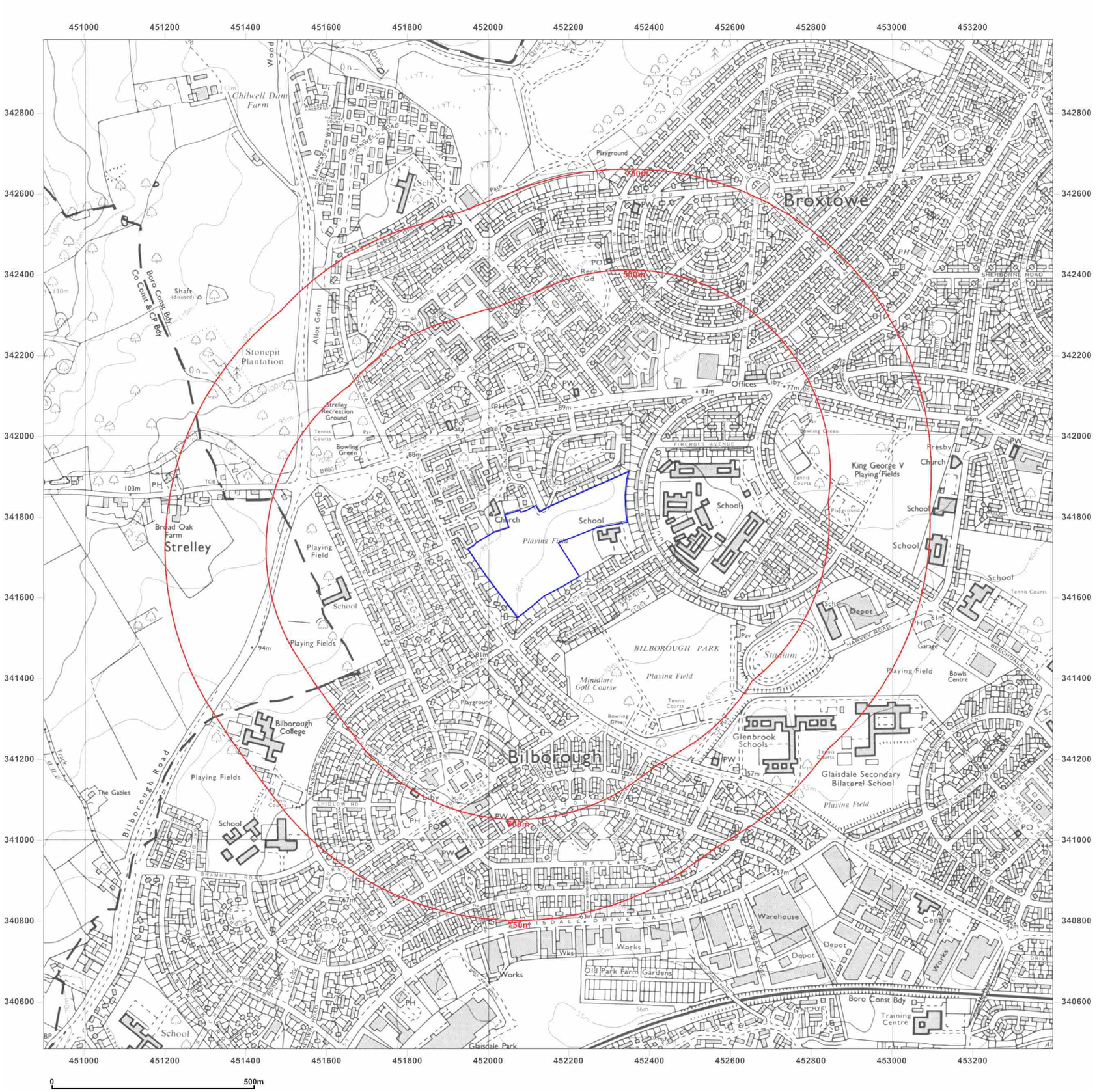

Groundsure INSIGHTS

Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **1989**

Scale: 1:10,000

Printed at: 1:10,000

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Revised 1989
Edition N/A
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Site Details:

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NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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2002

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Site Details:

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OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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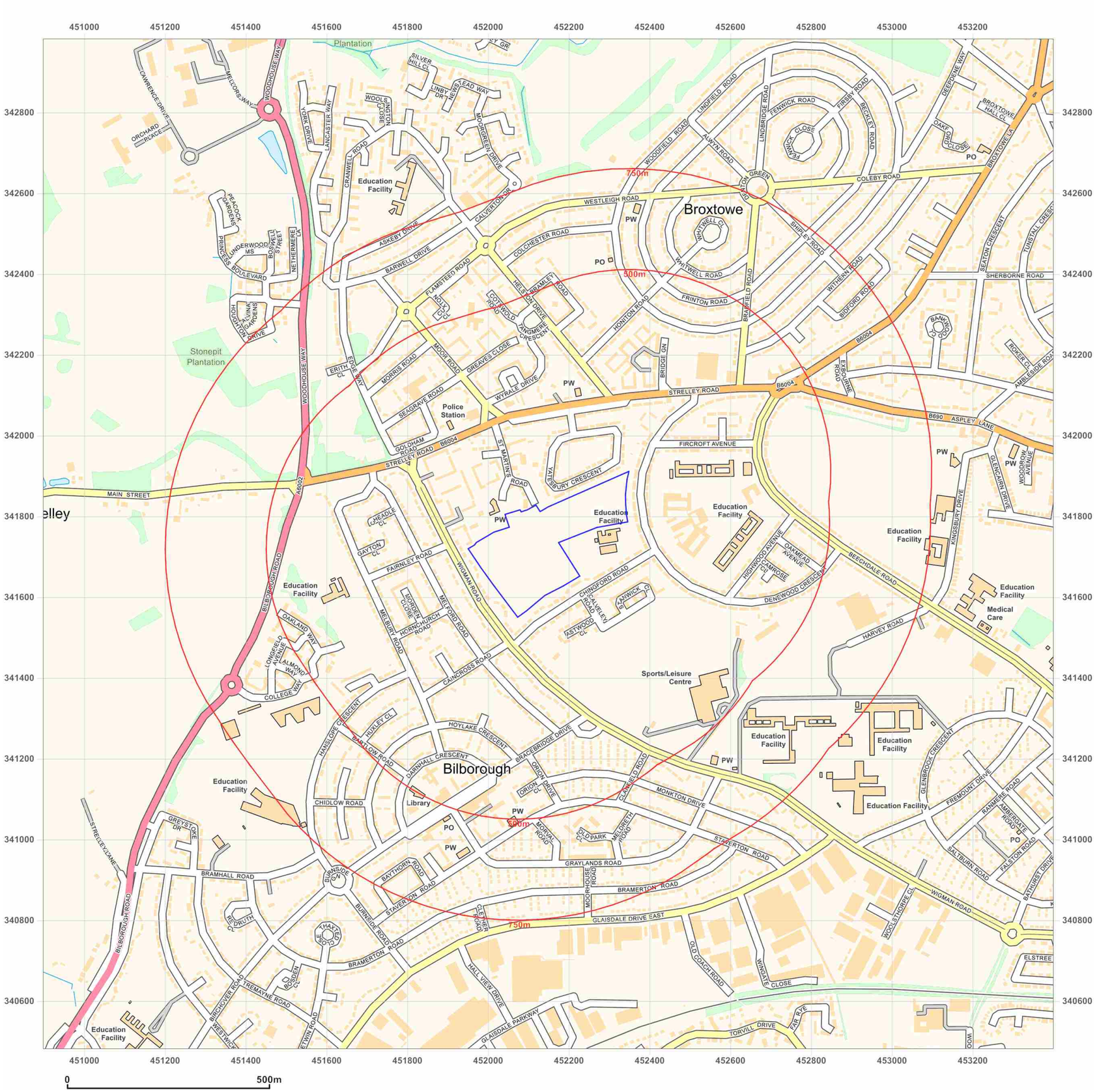

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Site Details:

CHINGFORD DEVELOPMENT,
OFF ST MARTINS ROAD,
NOTTINGHAM, NG8 3AR

Client Ref: POP018350
Report Ref: HYD-4695771
Grid Ref: 452148, 341732

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

Printed at: 1:10,000

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2014

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Appendix D

Desk Study Research Information

Hydrock

Hydrock Consultants Ltd

4 Lakeside, Festival Way,
Stoke-on-Trent, ST1 5RY

Groundsure Reference:	HYD-4695769
Your Reference:	POP018350
Report Date	30 Jan 2018
Report Delivery Method:	Email - pdf

Enviro Insight

Address: CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01752 347 515 quoting the above report reference number.

Yours faithfully,

Hydrock

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR**
Date:	**30 Jan 2018**
Reference:	**HYD-4695769**
Client:	**Hydrock Consultants Ltd**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	08-May-2016
Grid Reference:	452122,341718
Site Size:	6.04ha

Report Reference: HYD-4695769
Client Reference: POP018350

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Overview of Findings

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Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	6	16	44
1.2 Additional Information – Historical Tank Database	0	0	6	4
1.3 Additional Information – Historical Energy Features Database	0	0	15	15
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	0	6	20	45

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	2	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	1
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	2	3

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	6	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	No
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	1	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Limited potential
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	1	1
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	4
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	1	1	2	4
8.14 Records of Green Belt land	0	0	0	2	0	2

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	Basic radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	Yes
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

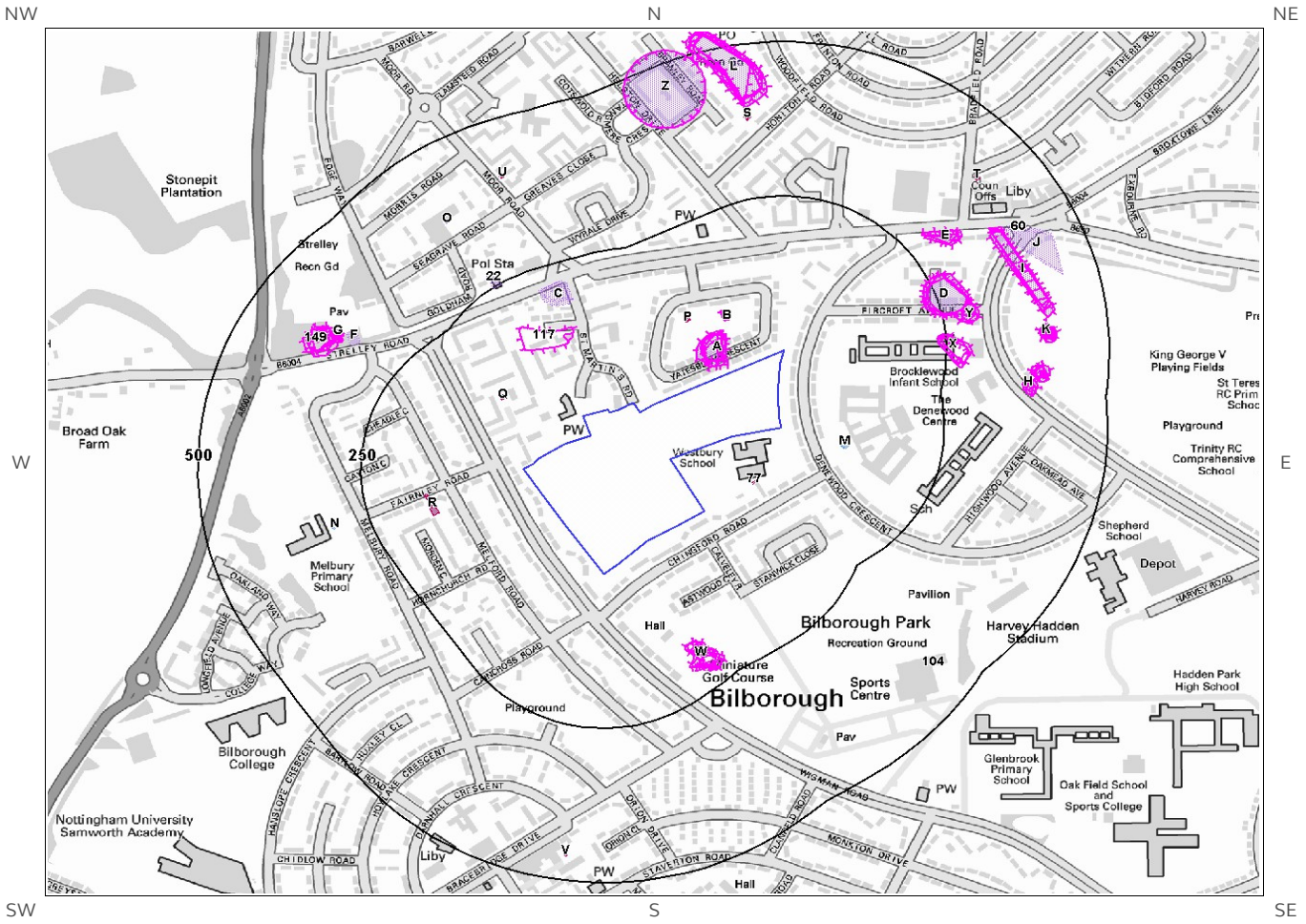
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 66

ID	Distance [m]	Direction	Use	Date
1A	15	NW	Unspecified Heap	1881
2A	15	NW	Unspecified Heap	1921
3A	23	NW	Unspecified Heap	1938
4A	26	NW	Unspecified Heap	1921
5A	26	NW	Unspecified Heap	1921
6A	27	NW	Unspecified Heap	1955
7B	79	NW	Sewage Tank	1921
8B	85	NW	Sewage Tank	1899
9B	89	NW	Sewage Tank	1921
10B	89	NW	Sewage Tank	1921
11C	179	N	Smithy	1921
12C	185	N	Smithy	1881
13C	185	N	Smithy	1899
14C	185	N	Smithy	1938
15C	188	N	Smithy	1955
16C	189	N	Smithy	1921
17D	229	E	Unspecified Heap	1899
18D	231	E	Unspecified Ground Workings	1921
19D	231	E	Unspecified Ground Workings	1921
20D	233	E	Unspecified Ground Workings	1921
21D	237	E	Old Coal Pit	1881
22	248	NW	Police Station	1989
23Y	279	E	Unspecified Heap	1921
24E	285	NE	Unspecified Heap	1921
25E	285	NE	Unspecified Ground Workings	1921
26E	285	NE	Unspecified Ground Workings	1921
27E	287	NE	Unspecified Ground Workings	1881
28F	322	NW	Police Station	1967
29F	347	NW	Unspecified Old Shaft	1921
30F	351	NW	Old Coal Pit	1881

31F	354	NW	Unspecified Old Shaft	1938
32F	355	NW	Old Coal Shaft	1899
33G	358	NW	Unspecified Old Shaft	1921
34G	358	NW	Unspecified Old Shaft	1921
35G	360	NW	Unspecified Old Shaft	1955
36I	366	NE	Unspecified Ground Workings	1899
37H	370	E	Unspecified Pit	1921
38H	370	E	Unspecified Pit	1921
39I	371	NE	Unspecified Heap	1921
40I	371	NE	Unspecified Heap	1921
41I	371	NE	Unspecified Heap	1921
42H	378	E	Unspecified Pit	1921
43H	378	E	Unspecified Pit	1881
44I	381	E	Unspecified Heap	1938
45H	382	E	Unspecified Heap	1955
46H	382	E	Unspecified Heap	1921
47H	382	E	Unspecified Heap	1921
48H	386	E	Unspecified Heap	1938
49J	387	NE	Machine House	1921
50J	388	NE	Machine House	1921
51H	389	E	Unspecified Heap	1881
52H	390	E	Unspecified Heap	1921
53K	394	E	Unspecified Pit	1955
54K	395	E	Unspecified Pit	1921
55K	395	E	Unspecified Pit	1921
56Z	397	NW	Stone Pit	1921
57K	398	E	Unspecified Pit	1938
58L	399	N	Unspecified Old Quarry	1921
59K	400	E	Unspecified Pit	1921
60	402	NE	Machine House	1881
61K	403	E	Unspecified Pit	1881
62L	405	N	Unspecified Old Quarry	1938
63L	405	N	Unspecified Old Quarry	1899
64L	410	N	Unspecified Quarry	1955
65L	411	N	Unspecified Quarry	1881
66L	411	N	Unspecified Old Quarry	1921

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 10

ID	Distance (m)	Direction	Use	Date
67B	86	NW	Sewage Tank	1900
68B	87	NW	Sewage Tank	1915
69M	95	E	Unspecified Tank	1954
70M	95	E	Unspecified Tank	1964
71M	95	E	Unspecified Tank	1954
72M	95	E	Unspecified Tank	1960
73N	303	W	Unspecified Tank	1989
74N	303	W	Unspecified Tank	1986
75O	376	NW	Unspecified Tank	1989
76O	376	NW	Unspecified Tank	1986

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 30

ID	Distance (m)	Direction	Use	Date
77	76	S	Electricity Substation	1973
78P	102	NW	Electricity Substation	1992
79P	103	NW	Electricity Substation	1973
80Q	110	NW	Electricity Substation	1986
81Q	110	NW	Electricity Substation	1989
82Q	110	NW	Electricity Substation	1968
83Q	110	NW	Electricity Substation	1968
84Q	111	NW	Electricity Substation	1993
85R	148	SW	Electricity Substation	1986
86R	148	SW	Electricity Substation	1989
87R	148	SW	Electricity Substation	1968
88R	148	SW	Electricity Substation	1954
89R	148	SW	Electricity Substation	1954
90R	148	SW	Electricity Substation	1968
91R	149	SW	Electricity Substation	1993
92S	377	N	Electricity Substation	1954
93S	377	N	Electricity Substation	1972
94S	377	N	Electricity Substation	1987
95S	377	N	Electricity Substation	1954
96S	381	N	Electricity Substation	1993
97T	404	NE	Electricity Substation	1993

98T	404	NE	Electricity Substation	1983
99U	405	N	Electricity Substation	1968
100U	405	N	Electricity Substation	1986
101U	405	N	Electricity Substation	1989
102U	406	N	Electricity Substation	1968
103T	406	NE	Electricity Substation	1978
104	430	SE	Electricity Substation	1993
105V	454	S	Electricity Substation	1989
106V	454	S	Electricity Substation	1993

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 71

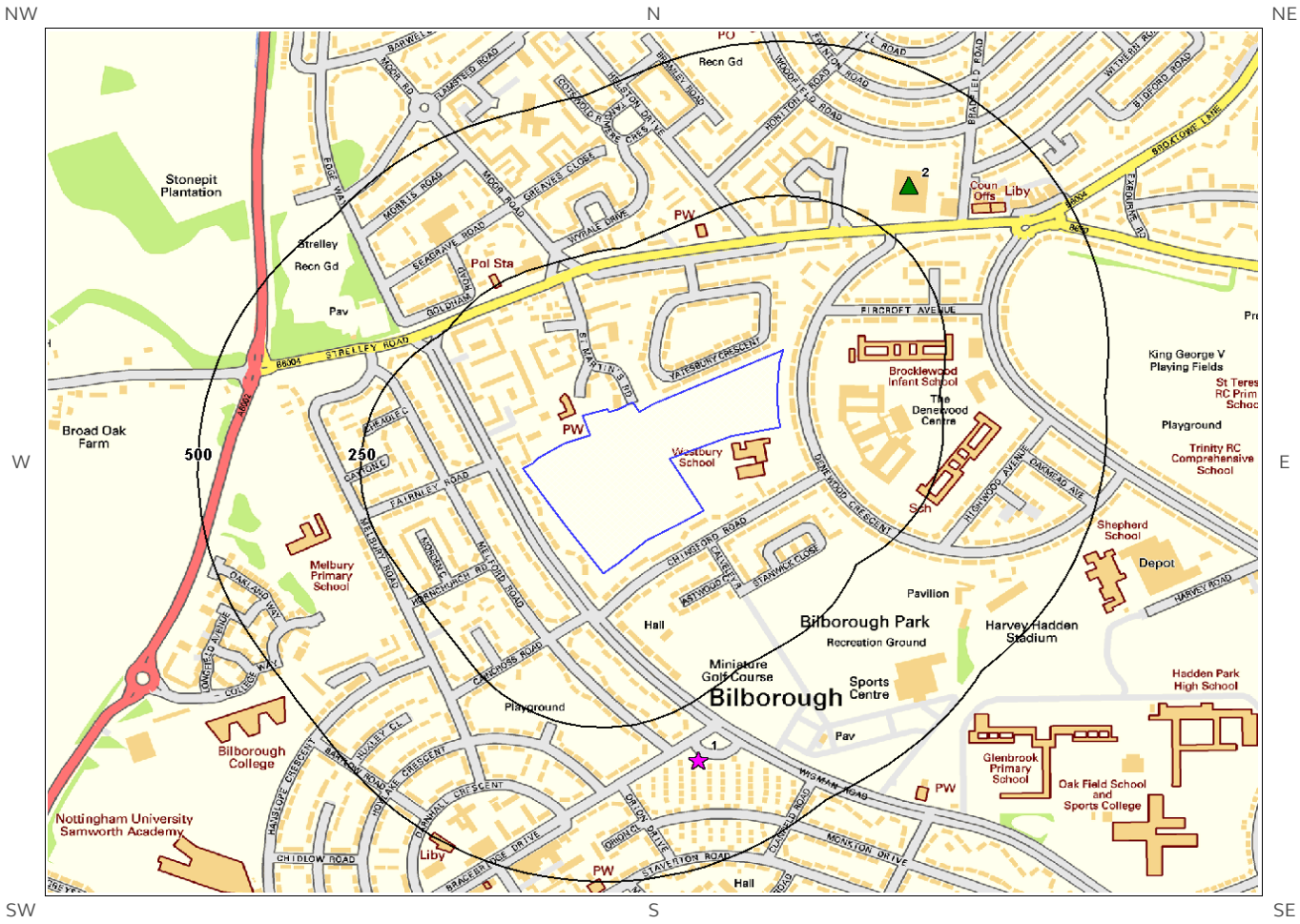
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
107A	15	NW	Unspecified Heap	1881
108A	15	NW	Unspecified Heap	1921
109A	23	NW	Unspecified Heap	1938
110A	26	NW	Unspecified Heap	1921
111A	26	NW	Unspecified Heap	1921
112A	27	NW	Unspecified Heap	1955
113B	79	NW	Sewage Tank	1921
114B	85	NW	Sewage Tank	1899
115B	89	NW	Sewage Tank	1921
116B	89	NW	Sewage Tank	1921

117	119	N	Pond	1967
118W	167	SE	Pond	1955
119W	169	SE	Pond	1921
120W	175	SE	Pond	1938
121W	175	SE	Pond	1899
122W	175	SE	Pond	1881
123W	178	SE	Pond	1921
124D	229	E	Unspecified Heap	1899
125D	231	E	Unspecified Ground Workings	1921
126D	231	E	Unspecified Ground Workings	1921
127D	233	E	Unspecified Ground Workings	1921
128D	237	E	Old Coal Pit	1881
129X	238	E	Pond	1921
130X	241	E	Pond	1921
131X	244	E	Pond	1899
132X	244	E	Pond	1881
133Y	279	E	Unspecified Heap	1921
134E	285	NE	Unspecified Heap	1921
135E	285	NE	Unspecified Ground Workings	1921
136E	285	NE	Unspecified Ground Workings	1921
137E	287	NE	Unspecified Ground Workings	1881
138F	347	NW	Unspecified Old Shaft	1921
139G	348	NW	Pond	1921
140G	349	NW	Pond	1881
141F	351	NW	Old Coal Pit	1881
142F	354	NW	Unspecified Old Shaft	1938
143F	355	NW	Old Coal Shaft	1899
144G	355	NW	Pond	1938
145F	358	NW	Unspecified Old Shaft	1921
146F	358	NW	Unspecified Old Shaft	1921
147F	360	NW	Unspecified Old Shaft	1955
148G	361	NW	Pond	1921
149	362	NW	Pond	1955
150I	366	NE	Unspecified Ground Workings	1899
151H	370	E	Unspecified Pit	1921
152H	370	E	Unspecified Pit	1921
153I	371	NE	Unspecified Heap	1921
154I	371	NE	Unspecified Heap	1921
155I	371	NE	Unspecified Heap	1921
156H	378	E	Unspecified Pit	1921
157H	378	E	Unspecified Pit	1881

158I	381	E	Unspecified Heap	1938
159H	382	E	Unspecified Heap	1955
160H	382	E	Unspecified Heap	1921
161H	382	E	Unspecified Heap	1921
162H	386	E	Unspecified Heap	1938
163H	389	E	Unspecified Heap	1881
164H	390	E	Unspecified Heap	1921
165K	394	E	Unspecified Pit	1955
166K	395	E	Unspecified Pit	1921
167K	395	E	Unspecified Pit	1921
168Z	397	NW	Stone Pit	1921
169K	398	E	Unspecified Pit	1938
170L	399	N	Unspecified Old Quarry	1921
171K	400	E	Unspecified Pit	1921
172K	403	E	Unspecified Pit	1881
173L	405	N	Unspecified Old Quarry	1899
174L	405	N	Unspecified Old Quarry	1938
175L	410	N	Unspecified Quarry	1955
176L	411	N	Unspecified Quarry	1881
177L	411	N	Unspecified Old Quarry	1921

2. Environmental Permits, Incidents and Registers Map



- Site Outline
- Search Buffers (m): 250, 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

1

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
2	328	NE	452542 342178	Address: Asda Service Station (formerly Co-op Strelley Rd Total), Strelley Road, Strelley, Nottingham, NG8 3AP Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

1

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	336	SE	452216 341248	Incident Date: 08-Mar-2002 Incident Identification: 62854 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

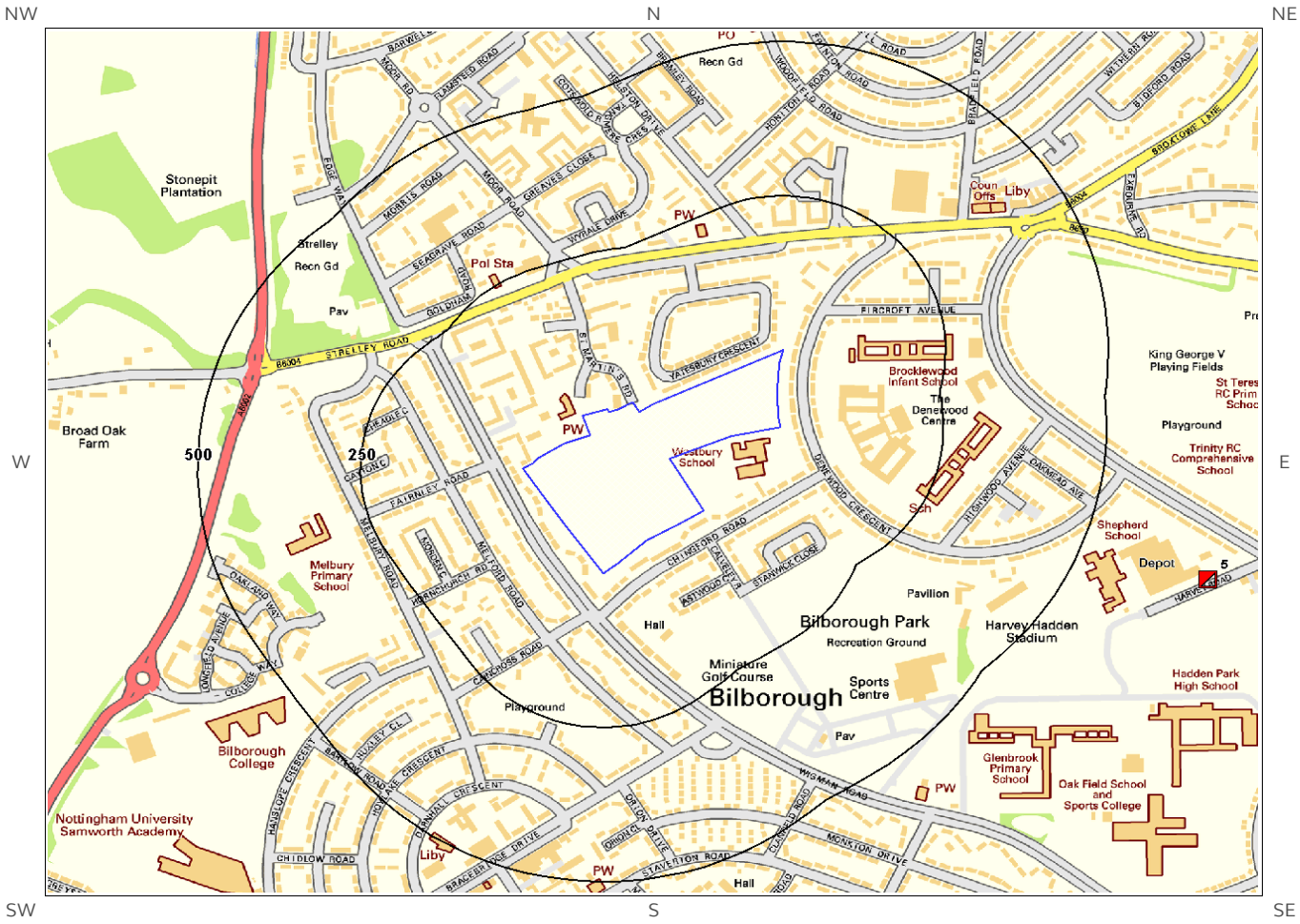
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

2

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	786	N		Site Address: Broxtowe Tip, Broxstowe, Nottingham, Nottinghamshire Waste Licence: - Site Reference: 5/U/3/54SW Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Nottingham City Council Licence Holder: Nottingham City Council First Recorded: 28-Feb-1972 Last Recorded: 31-Dec-1975
Not shown	842	S		Site Address: The Roughs off Glaisdale Drive, GlaisdaleRoad, Bilborough, Nottingham Waste Licence: Yes Site Reference: 6/83/135/54SW Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 08-Mar-1983 Licence Surrendered: 14-Jan-1986 Licence Holder Address: Department of Technical Services, Lawerence House, Clarendon Street, Nottingham Operator: - Licence Holder: Nottingham City Council First Recorded: 31-Mar-1983 Last Recorded: 20-Dec-1985

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1089	N	452400.0 343000.0	Address: Broxstowe Tip, Broxstowe, Nottingham BGS Number: 1230.0	Risk: Risk to major aquifer Waste Type: N/A

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

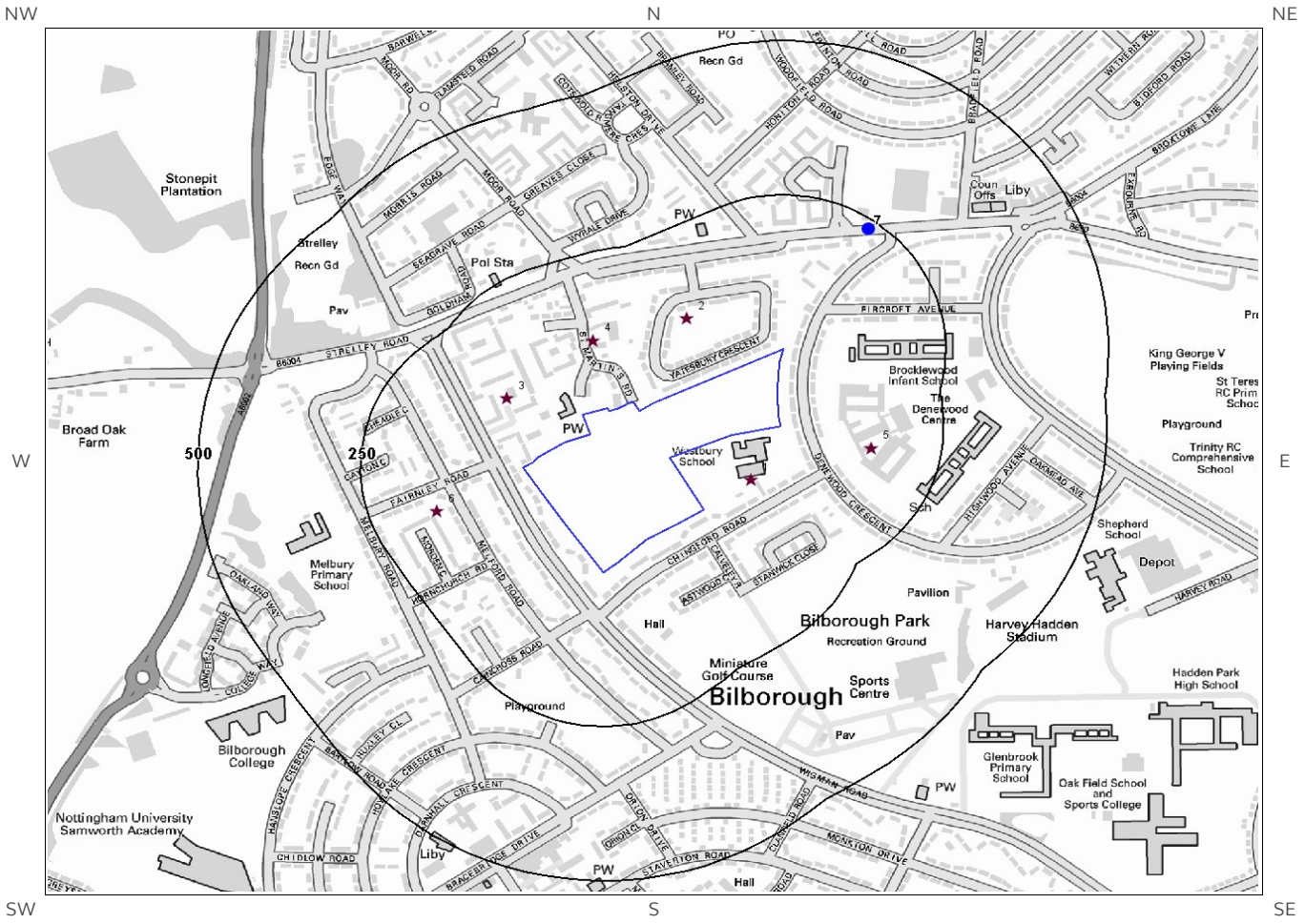
5

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	593	SW	451842 341005	Site Address: 101 & 103, Bracebridge Drive, Biliborough Estate, Nottingham, Nottinghamshire, NG8 4PL Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PEA003 EPR reference: EA/EPR/CB3038AJ/A001 Operator: Mr C J Pearce Waste Management licence No: 43609 Annual Tonnage: 2500.0	Issue Date: 29/04/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Sheppards Wood Service Station Correspondence Address: 101 & 103, Bracebridge Drive, Biliborough Estate, Nottingham, Nottinghamshire, NG8

ID	Distance (m)	Direction	NGR	Details	
5	700	E	453000 341541	Site Address: Harvey Road, Bilborough, Nottingham, Nottinghamshire, NG8 3BB Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: NOT002 EPR reference: EA/EPR/CP3597FY/S002 Operator: Nottingham City Building Works Waste Management licence No: 43041 Annual Tonnage: 7.3	Issue Date: 11/10/1995 Effective Date: - Modified: - Surrendered Date: 28/06/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Harvey Road Depot Correspondence Address: Harvey Road, Bilborough, Nottingham, Nottinghamshire, NG8
Not shown	1356	SE	453561 341188	Site Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8 3FH Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SAD001 EPR reference: EA/EPR/EB3503GL/T001 Operator: Sadlers Waste Limited Waste Management licence No: 43045 Annual Tonnage: 4999.0	Issue Date: 03/07/1996 Effective Date: 08/09/2016 Modified: 11/12/2003 Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Transferred Site Name: Sadlers Waste Correspondence Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8
Not shown	1356	SE	453561 341188	Site Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8 3FH Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LEE002 EPR reference: EA/EPR/CP3697FQ/V002 Operator: Lees Mr J F & Mrs J J Waste Management licence No: 43045 Annual Tonnage: 4999.0	Issue Date: 03/07/1996 Effective Date: - Modified: 11/12/2003 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Sadlers Waste Correspondence Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8
Not shown	1356	SE	453561 341188	Site Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8 3FH Type: 75kte HCl Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SAD001 EPR reference: EA/EPR/EB3503GL/V002 Operator: Sadlers Waste Limited Waste Management licence No: 43045 Annual Tonnage: 75000.0	Issue Date: 03/07/1996 Effective Date: 08/09/2016 Modified: 28/04/2017 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Sadlers Waste Correspondence Address: Staffordshire House, Beechdale Road, Aspley, Nottingham, Nottinghamshire, NG8

4. Current Land Use Map



4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 6

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	76	S	Electricity Sub Station	452298 341702	NG8	Electrical Features	Infrastructure and Facilities
2	106	NW	Electricity Sub Station	452199 341963	NG8	Electrical Features	Infrastructure and Facilities
3	108	NW	Electricity Sub Station	451923 341834	NG8	Electrical Features	Infrastructure and Facilities
4	113	N	Pump	452055 341928	NG8	Water Pumping Stations	Industrial Features
5	142	E	Chimney	452482 341753	NG8	Chimneys	Industrial Features
6	151	SW	Electricity Sub Station	451815 341651	NG8	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
7	234	NE	452478 342107	Asda	Asda Strelley Road, Strelley Road, Strelley Road, Broxtowe, Nottingham, Nottingham, NG8 3AP	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
HEAD-DMTN	HEAD	DIAMICTON

5.3 Bedrock and Solid Geology

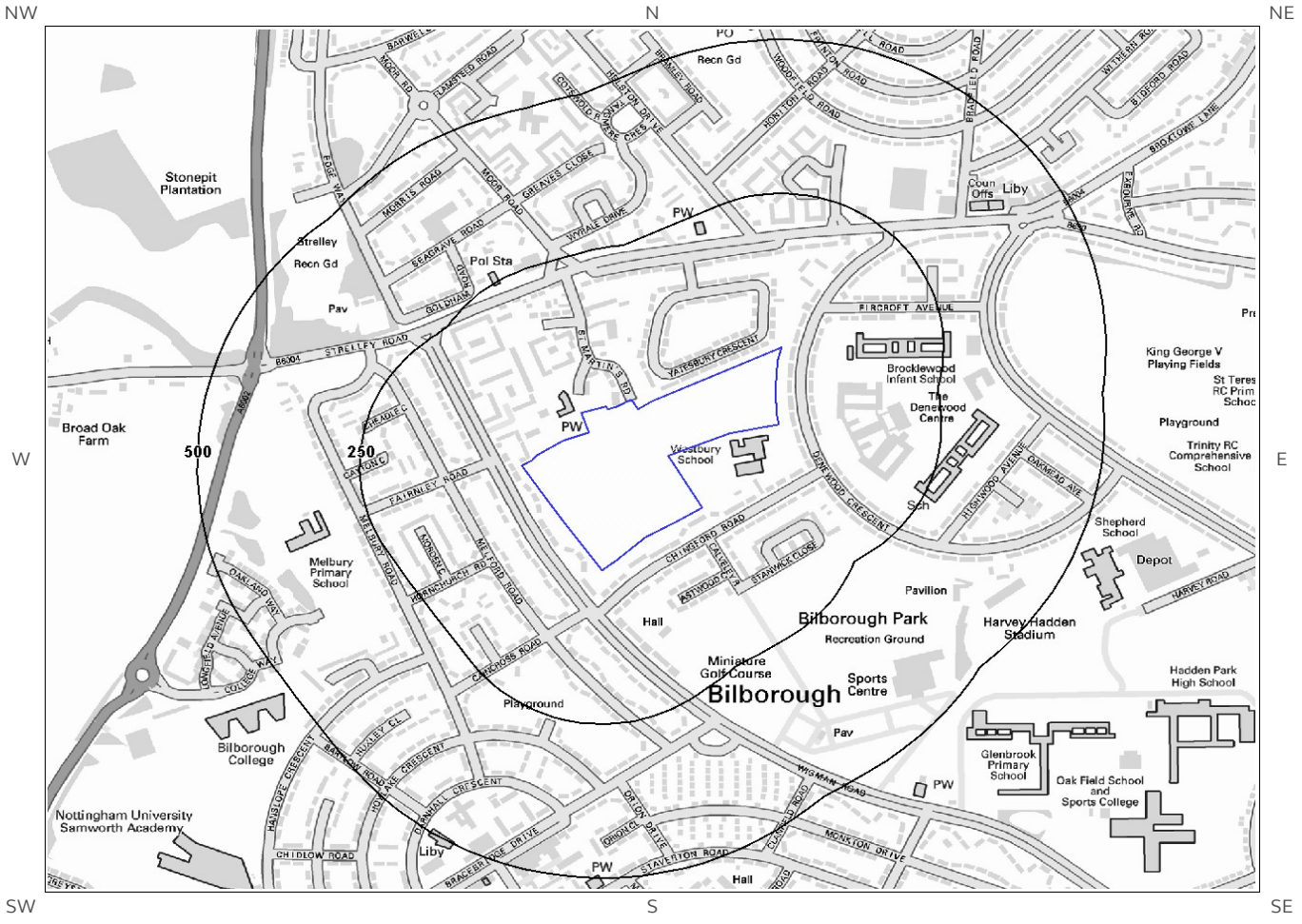
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LNS-SDST	LENTON SANDSTONE FORMATION	SANDSTONE
EDT-MDSD	EDLINGTON FORMATION	MUDSTONE AND SANDSTONE
CDF-DOLO	CADEBY FORMATION	DOLOSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

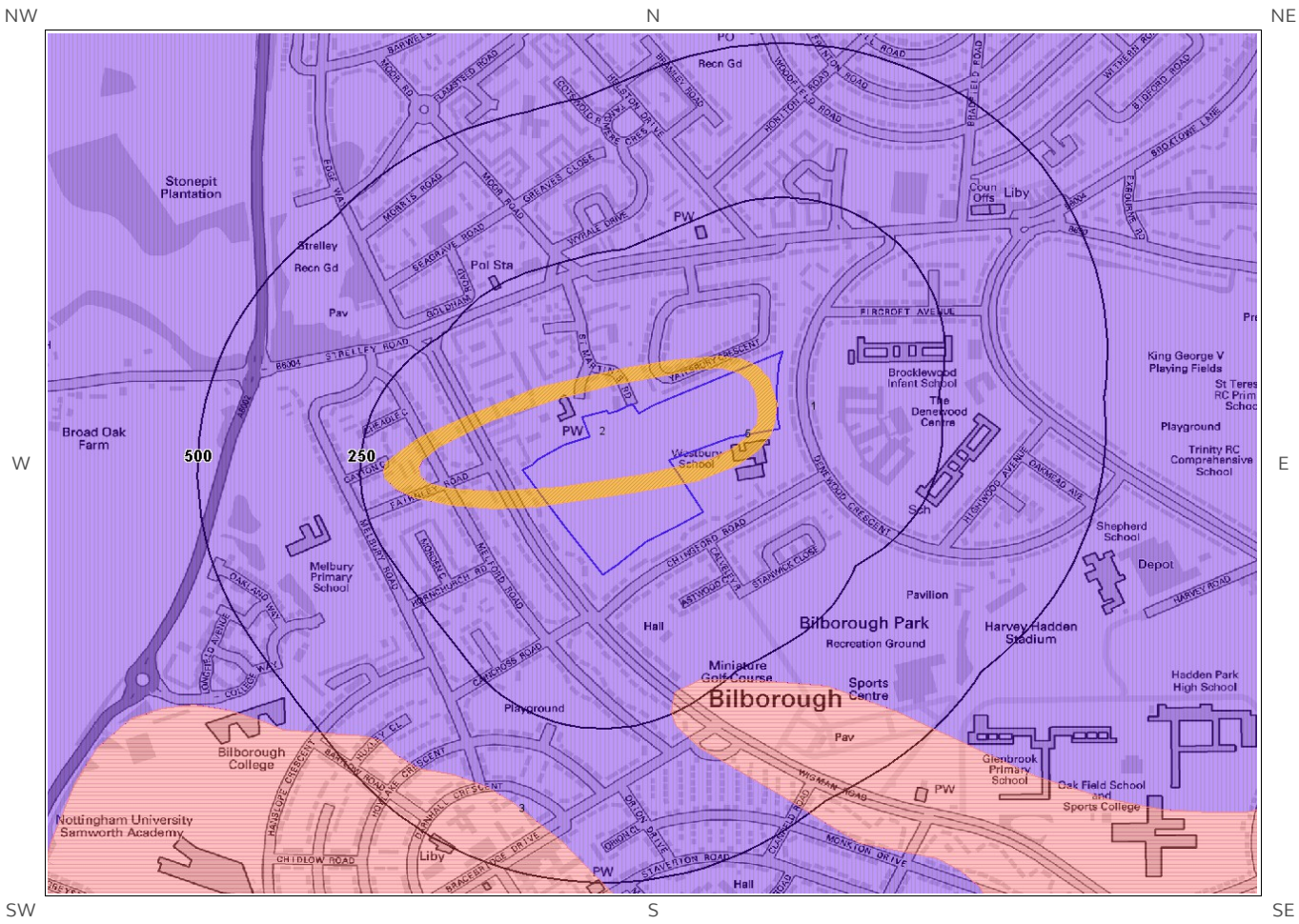
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

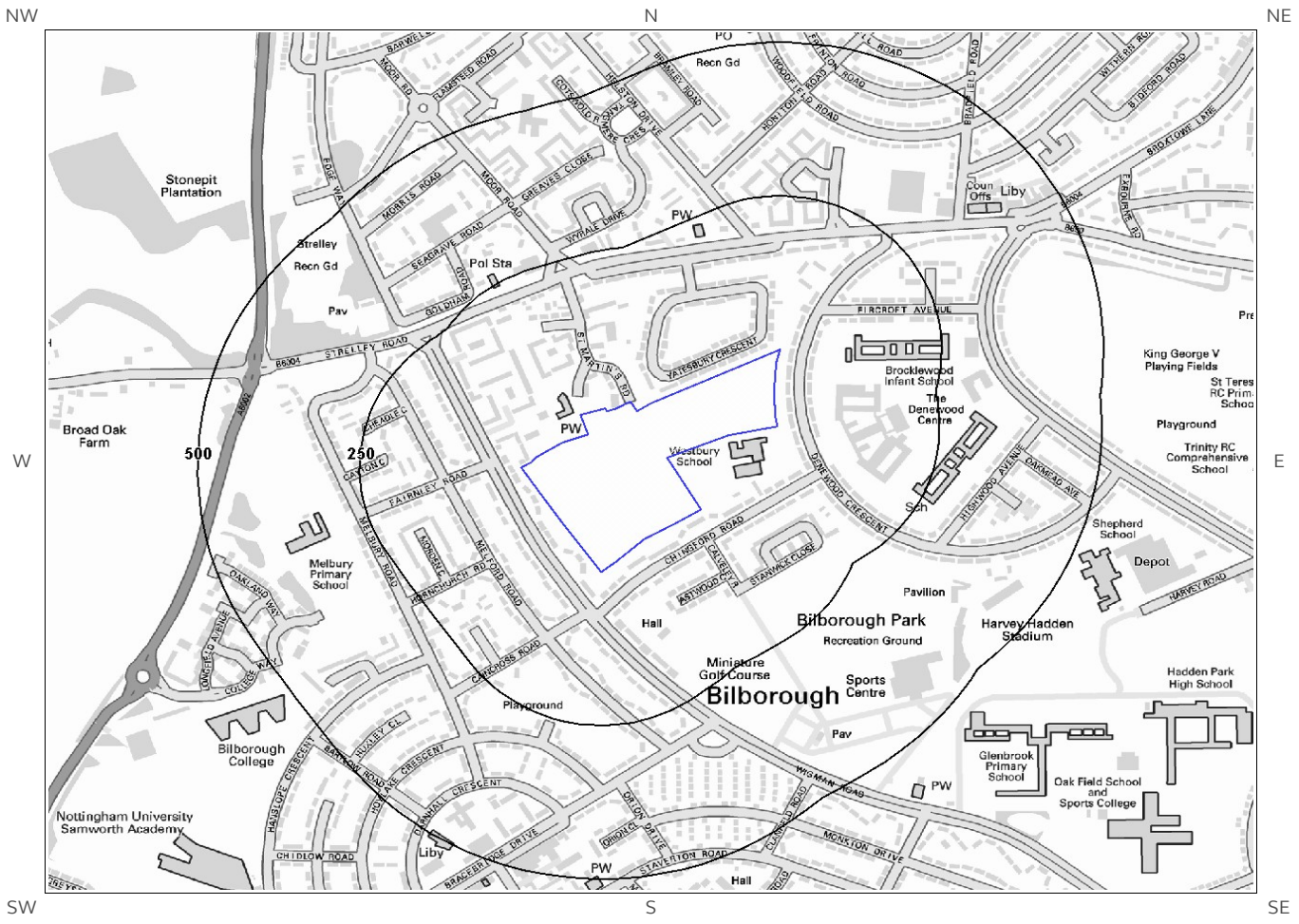
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

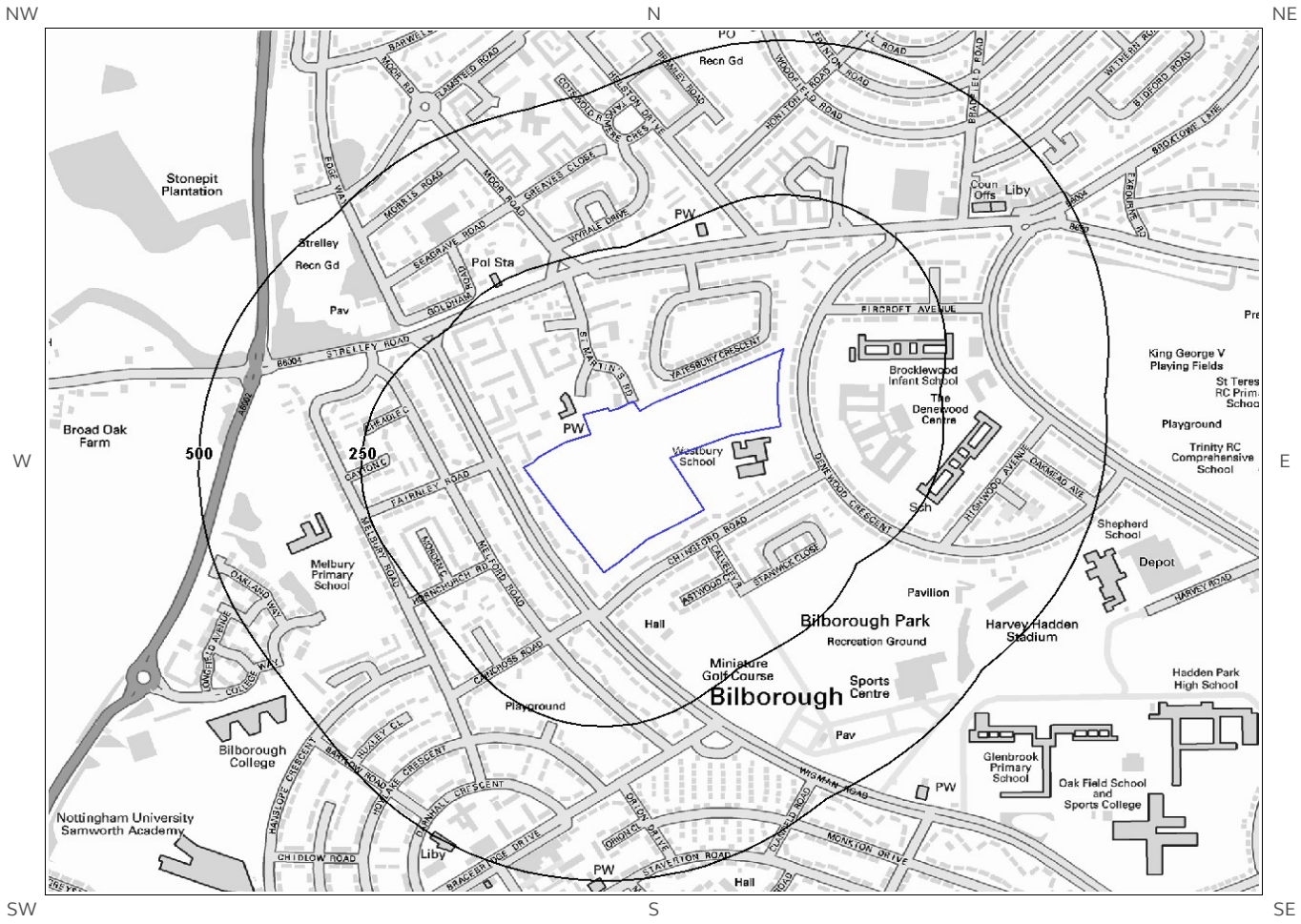
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Site Outline

250 — 500 Search Buffers (m)

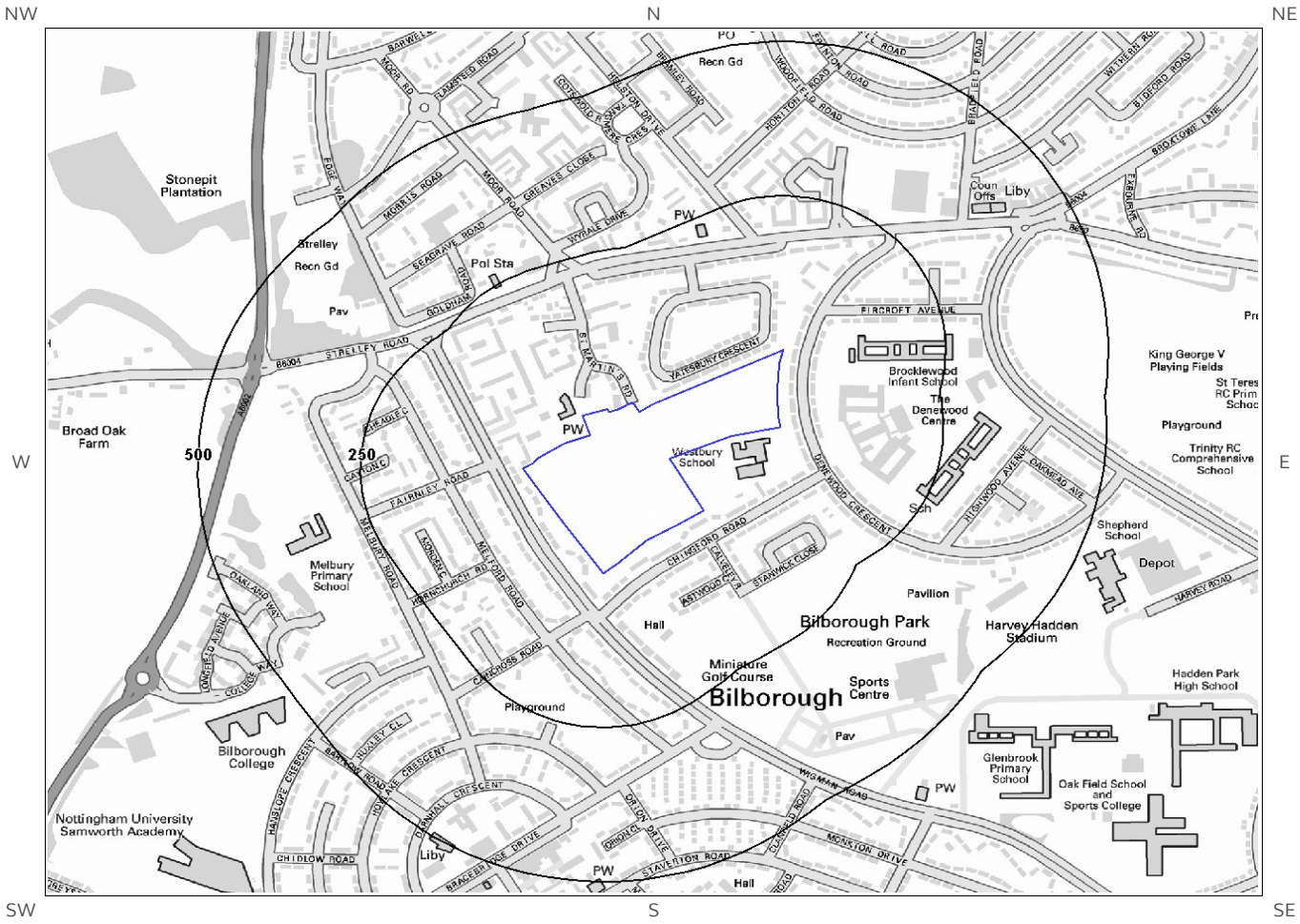
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



Site Outline

250
500
Search Buffers (m)

Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry

Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? No

Database searched and no data found.

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
5	0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
3	221	SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1240	S	452250 340300	Status: Historical Licence No: 03/28/63/0051 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: Wighay - Wells Data Type: Region Name: RADFORD BRIDGE RD GARDENHOLDERS	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2000 Version End Date:
Not shown	1358	SE	452600 340300	Status: Historical Licence No: 03/28/63/0051 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: Wighay - Wells Data Type: Point Name: RADFORD BRIDGE RD GARDENHOLDERS	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2000 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
218	SE	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
436	W	Major Aquifer/High Leaching Potential	H3	Coarse textured or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges but have some ability to attenuate adsorbed pollutants because of their clay or organic matter content.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? No

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? No

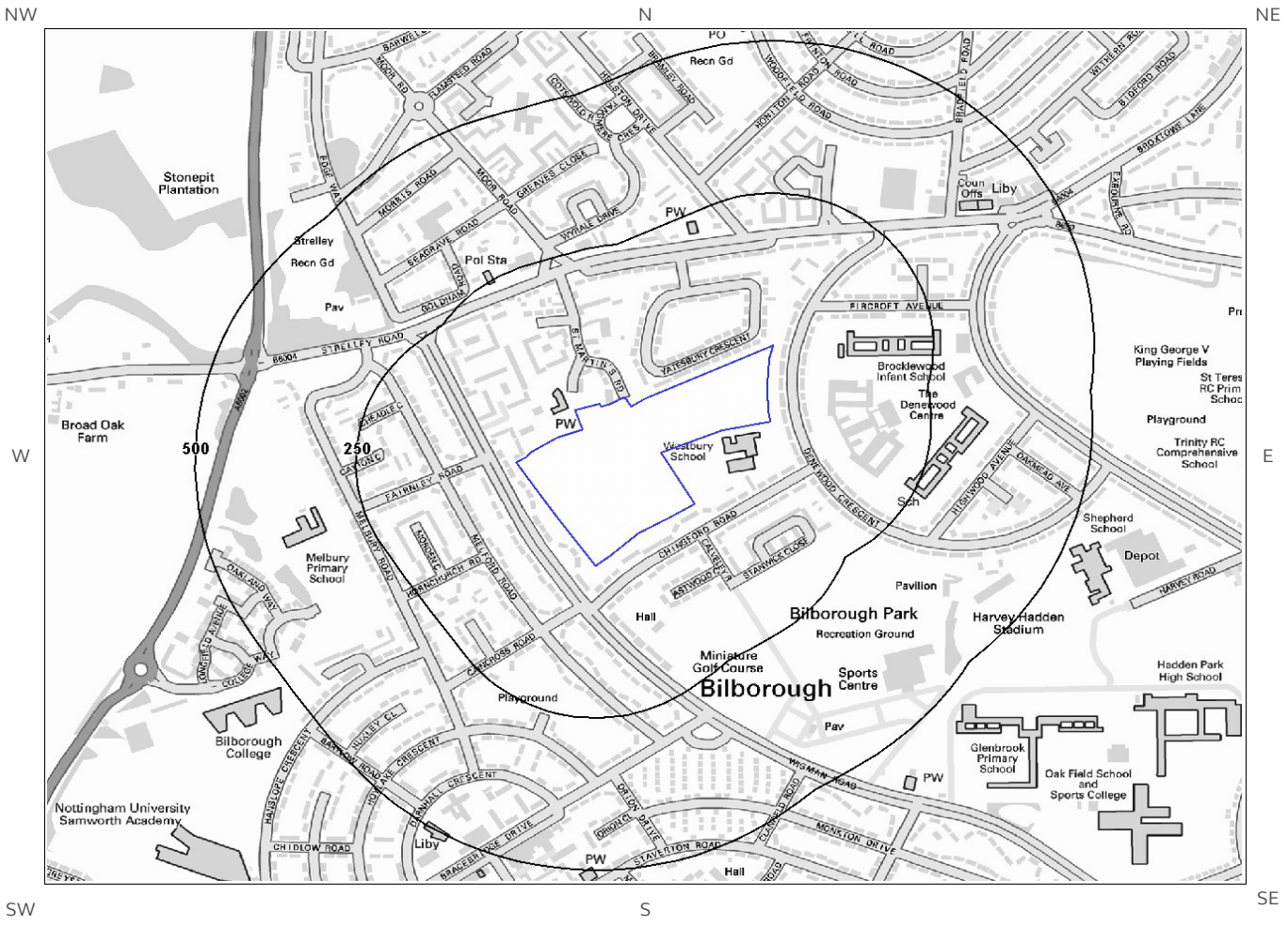
Database searched and no data found.

6.11 Surface Water Features

Are there any surface water features within 250m of the study site? No

Database searched and no data found.

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



Site Outline

Search Buffers (m)

Zone 2 Floodplain

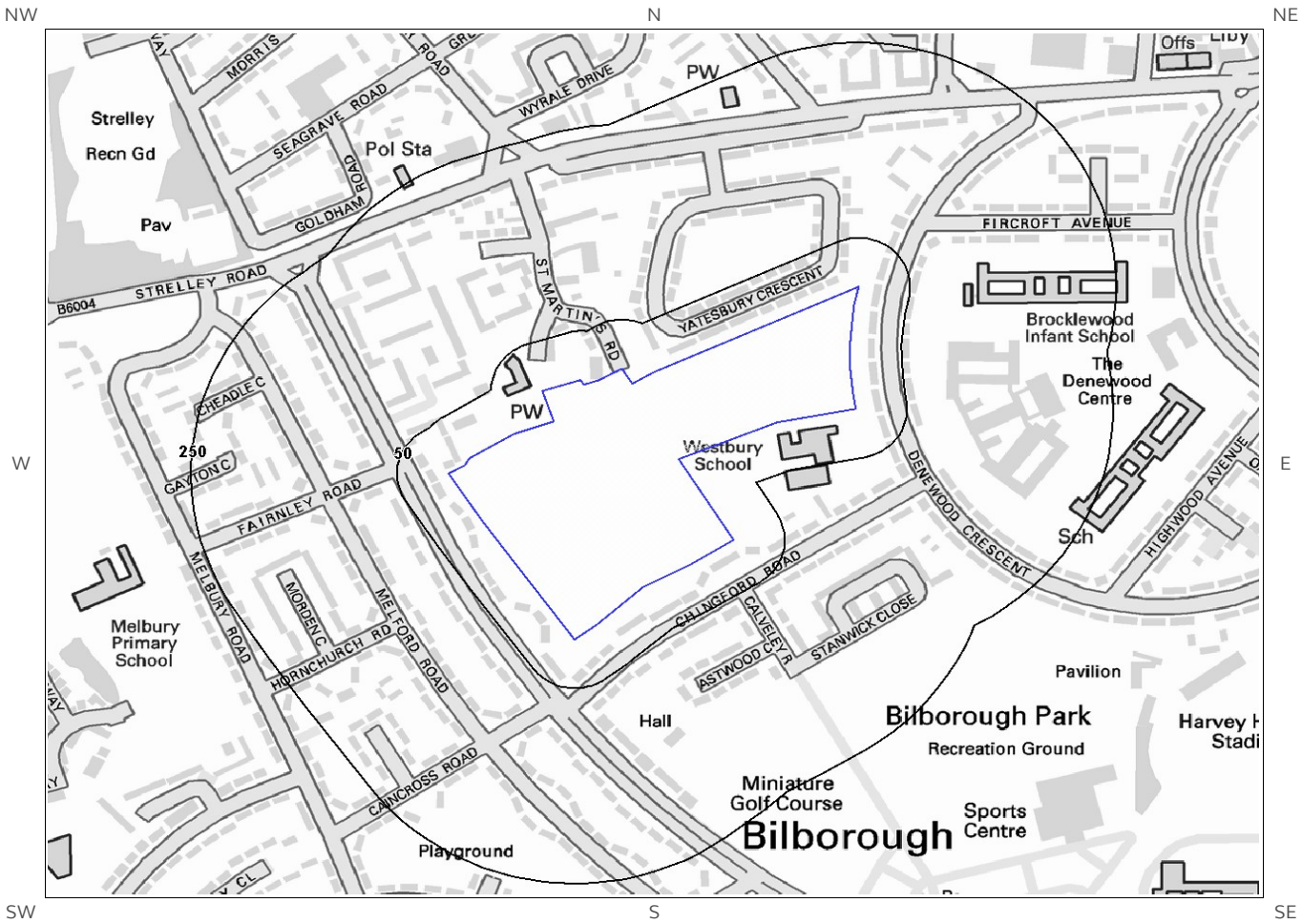
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Limited potential

Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard.

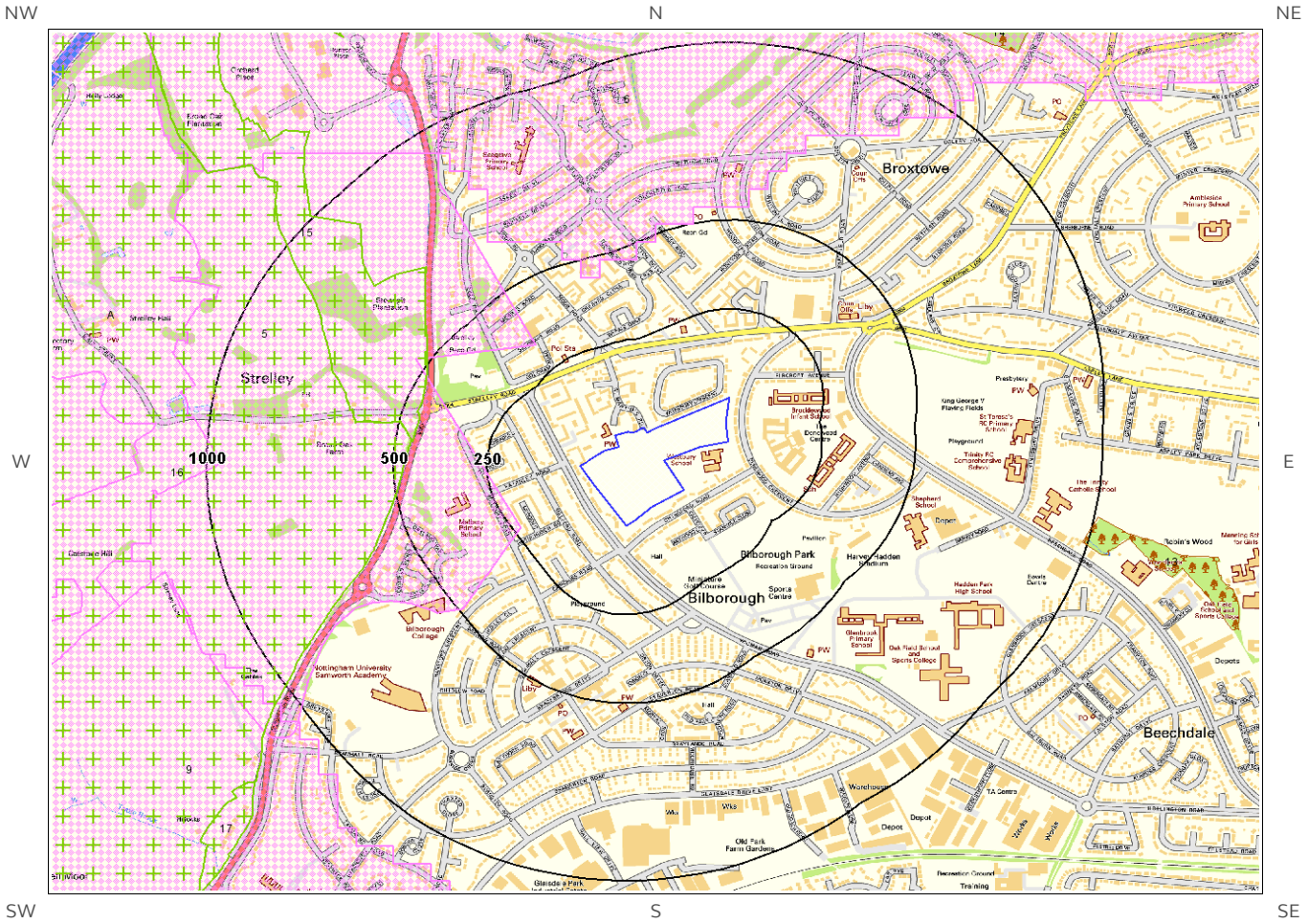
7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Low

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



Site Outline

100 / 250 Search Buffers (m)

AONB

National Park

SSSI

Special Protection Areas

Nitrate Vulnerable Zones

Green Belt

Environmentally Sensitive Areas

Special Areas of Conservation

World Heritage Sites

Nitrate Sensitive Areas

Ancient Woodland

National Nature Reserve

Local Nature Reserves

Ramsar Sites

8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?	Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

2

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
13	985	E	UNKNOWN	Ancient and Semi-Natural Woodland
14	1162	N	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

4

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1327	S	Martins Pond	Natural England
Not shown	1484	SE	Harrison Plantation	Natural England
Not shown	1511	SE	Harrison Plantation	Natural England
Not shown	1916	S	Wollaton Park	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

8

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
5	228	SW	Existing	DEFRA
6	437	N	Existing	DEFRA
7A	959	W	New	DEFRA
8A	959	W	Existing	DEFRA
9	1018	SW	Existing	DEFRA
Not shown	1551	S	Existing	DEFRA
Not shown	1949	W	New	DEFRA
Not shown	1949	W	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

4

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
15	450	W	Derby and Nottingham Greenbelt	City of Nottingham (B)
16	459	W	Derby and Nottingham Greenbelt	Broxtowe District (B)
17	1227	SW	Derby and Nottingham Greenbelt	City of Nottingham (B)
Not shown	1949	W	Derby and Nottingham Greenbelt	Broxtowe District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell*[*] hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand*[*] hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? Basic radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? Yes

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No
Guidance: No Guidance Required.

Contact Details

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Telephone: 01752 347 515
marcushaes@hydrock.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Nottingham City Council
Phone: 01159 155 555
Web: http://www.nottinghamcity.gov.uk/
Address: Loxley House, Station street, Nottingham, Nottinghamshir,

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-sept-2016

Hydrock

Hydrock Consultants Ltd

4 Lakeside, Festival Way,
Stoke-on-Trent, ST1 5RY

Report Reference: HYD-4695770

Your Reference: POP018350

Report Date 30 Jan 2018

Report Delivery Method: Email - pdf

Geo Insight

Address: CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01752 347 515 quoting the above report reference number.

Yours faithfully,

Hydrock

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR**
Date:	**30 Jan 2018**
Reference:	**HYD-4695770**
Client:	**Hydrock Consultants Ltd**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	08-May-2016
Grid Reference:	452122,341718
Site Size:	6.04ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	Yes

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level.
	3.2Radon Protection	Basic radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	4	14	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	1	5	12
4.3 Current Ground Workings	0	0	0	4	3

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	1	5	12
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	1	0	1
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

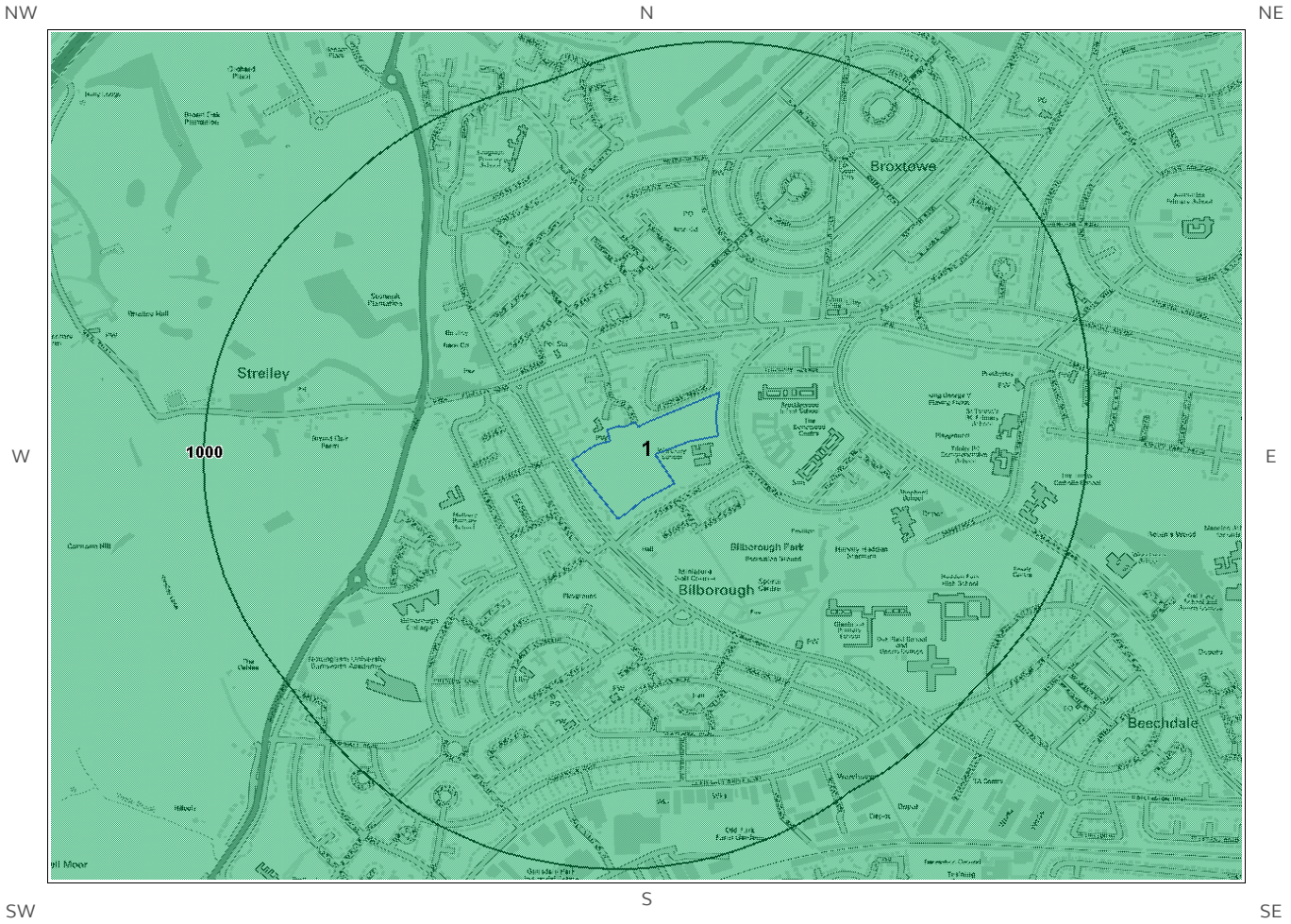
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Very Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Negligible

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	2	1

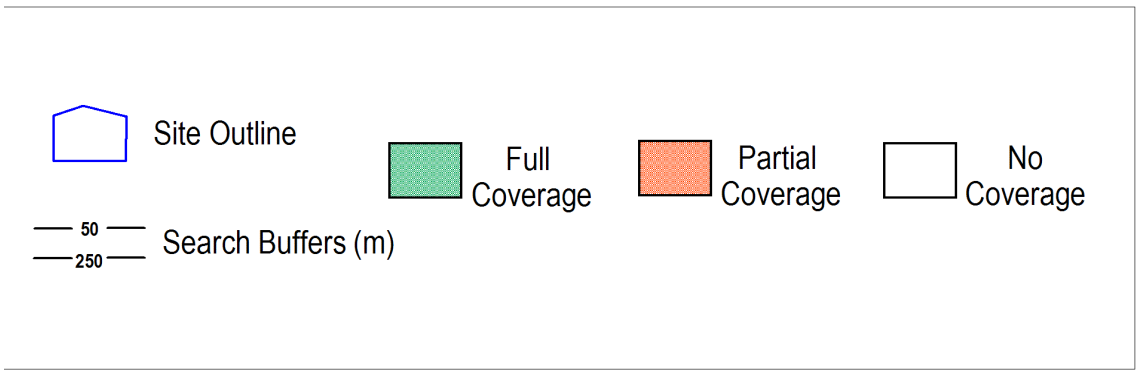
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	9	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
N2	1551.0	Some deposits are mapped	Full	Full	No coverage
N3	1949.0	Some deposits are mapped	Full	Full	No coverage

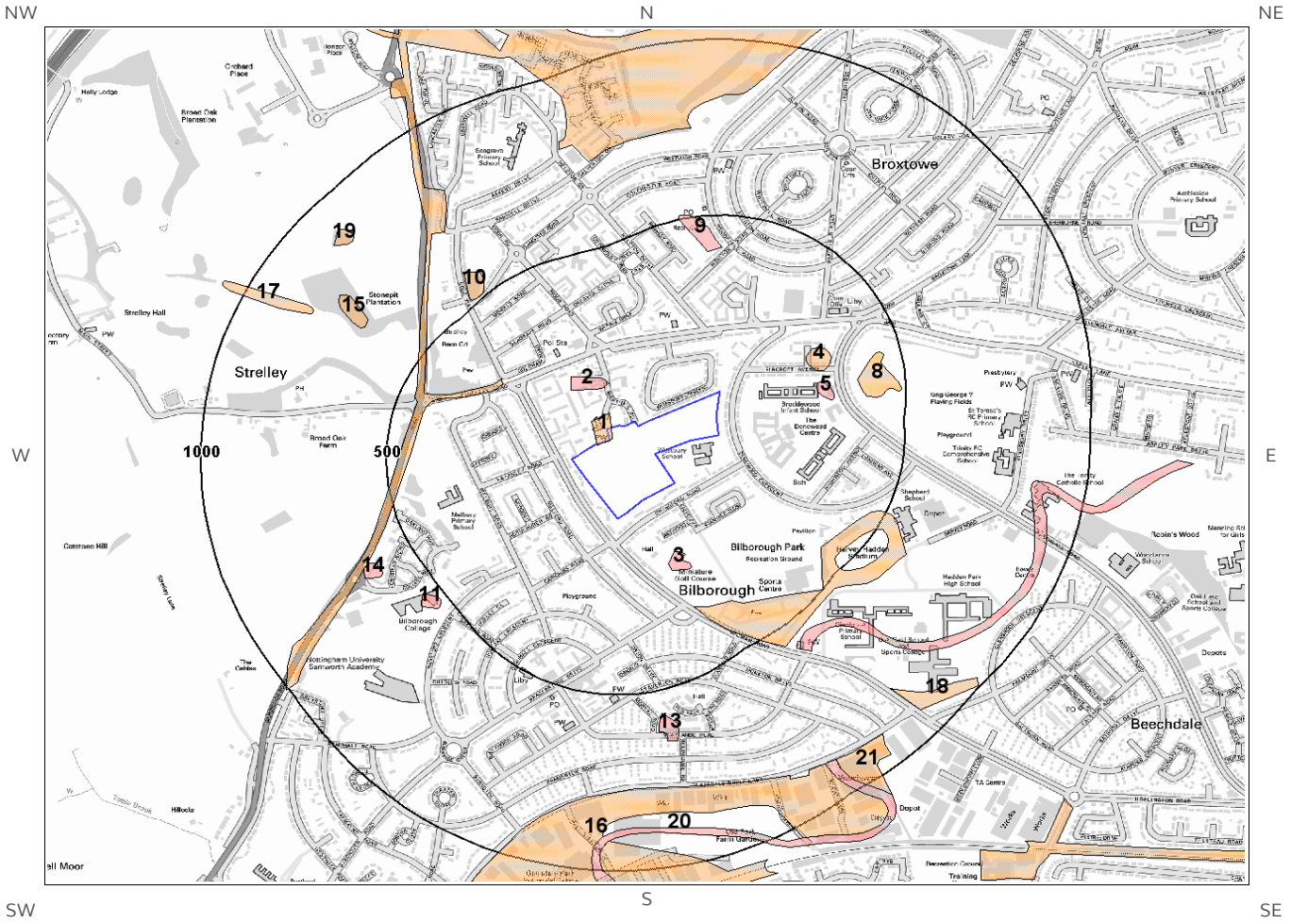
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

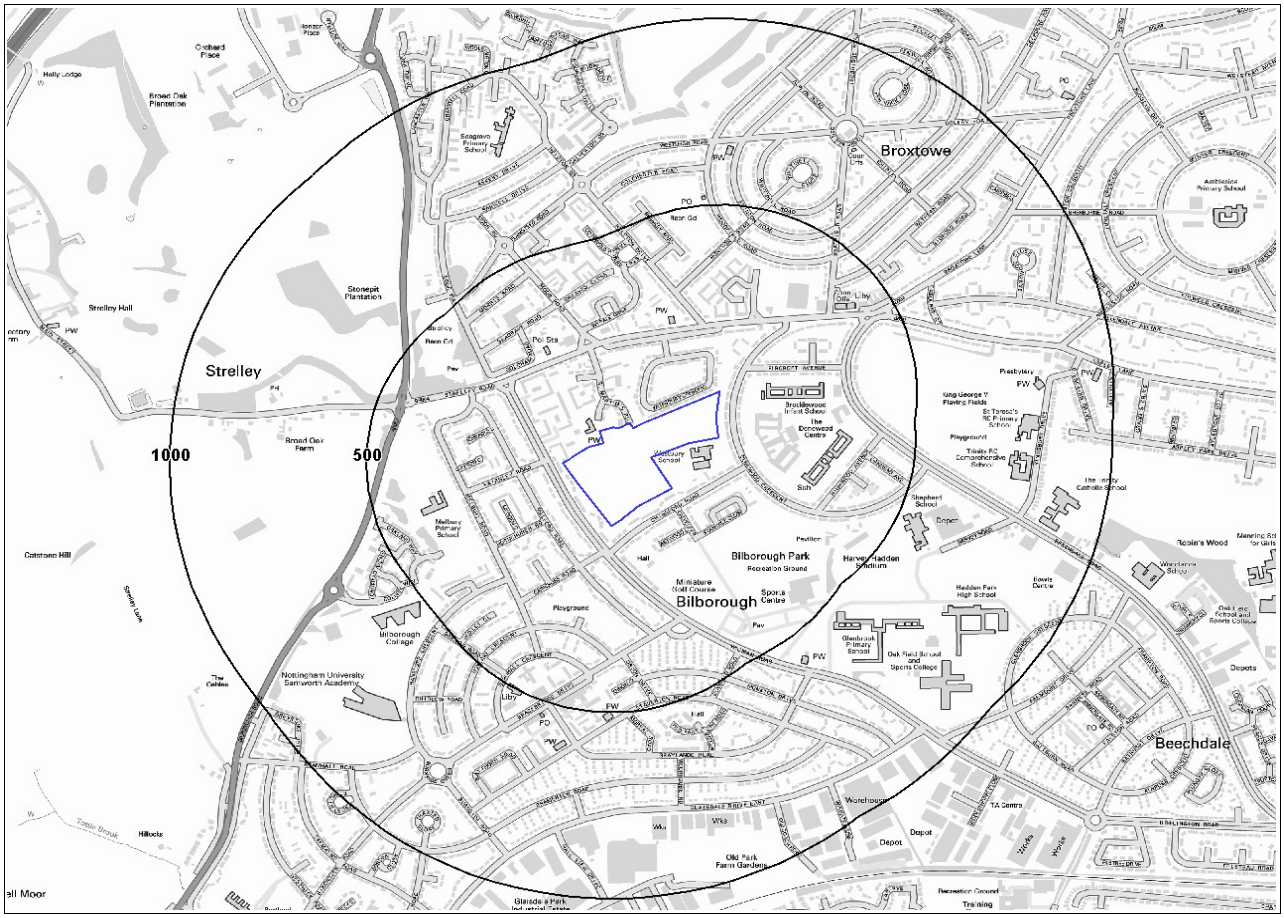
ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	115.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	165.0	SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	248.0	E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	258.0	E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	283.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	321.0	SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8	370.0	E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	399.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)

NW N NE

W E

SW S SE



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

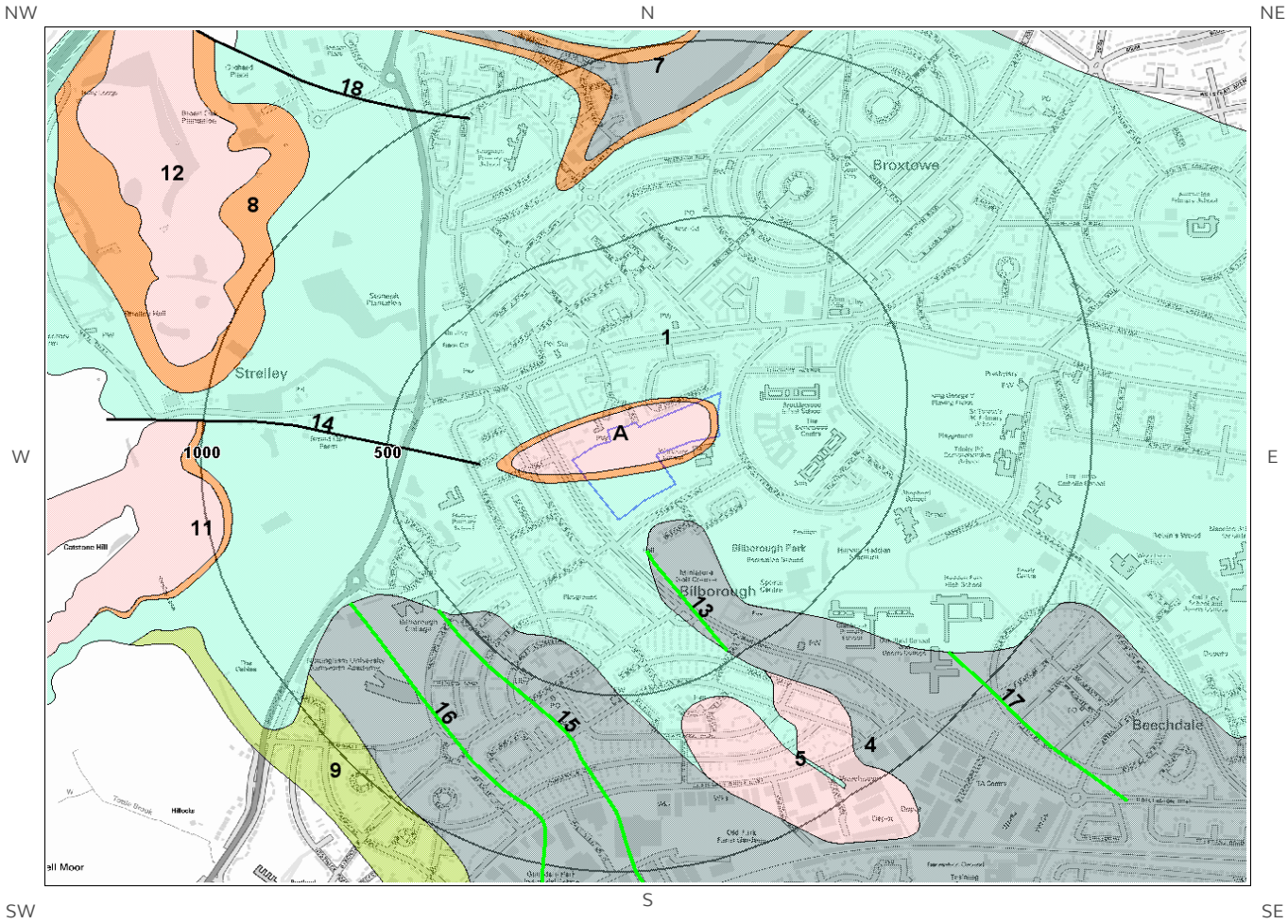
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	CDF-DOLO	Cadeby Formation - Dolostone	Late Permian Epoch [Obsolete name]
2A	0.0	On Site	LNS-SDST	Lenton Sandstone Formation - Sandstone	Early Triassic Epoch - Late Permian Epoch [Obsolete name]
3A	0.0	On Site	EDT-MDSD	Edlington Formation - Mudstone And Sandstone	Late Permian Epoch [Obsolete name]
4	73.0	SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

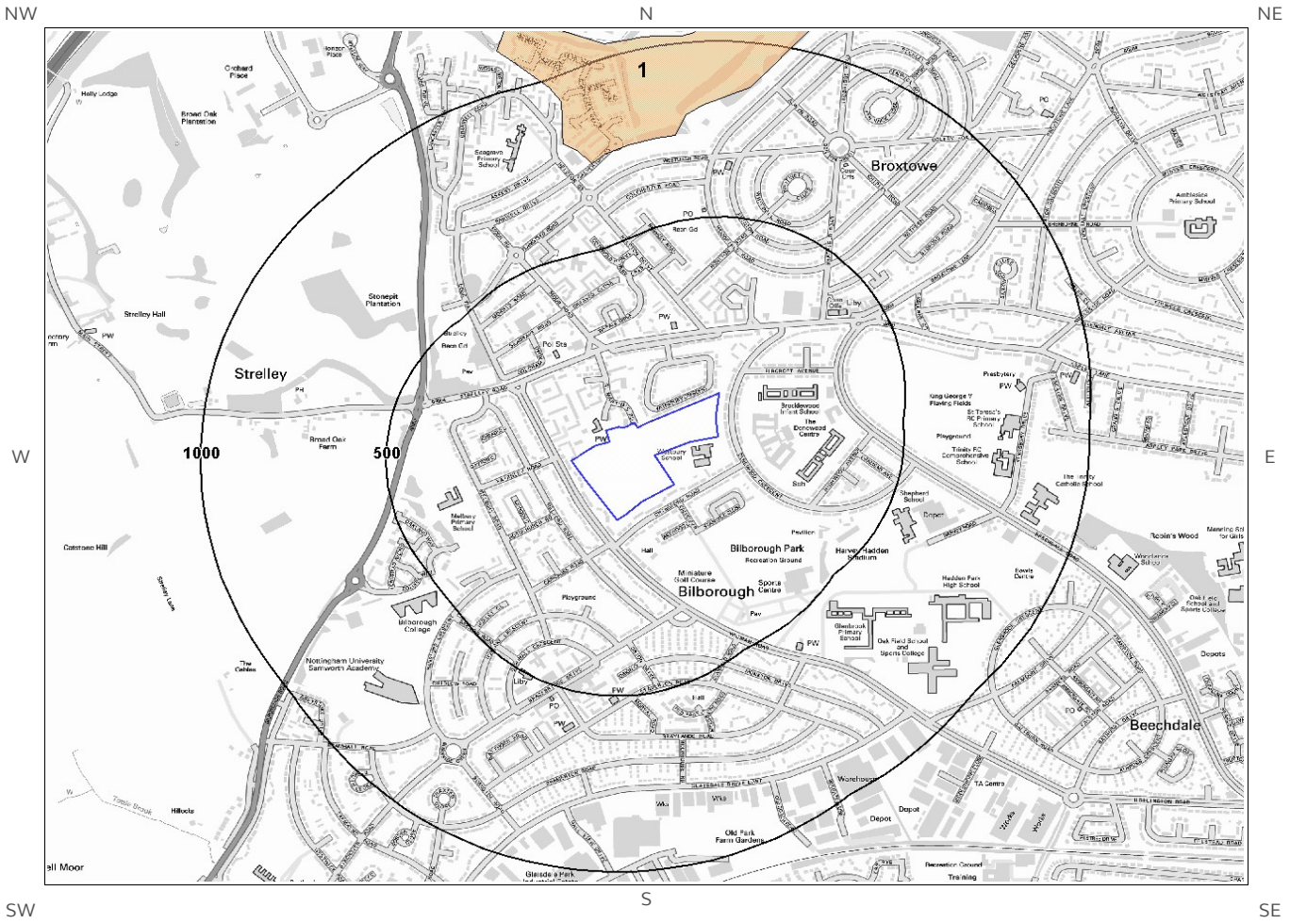
ID	Distance (m)	Direction	Category Description	Feature Description
13	115.0	SE	ROCK	Coal seam, inferred
14	248.0	W	FAULT	Normal fault, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 125

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

Database searched and no data found.

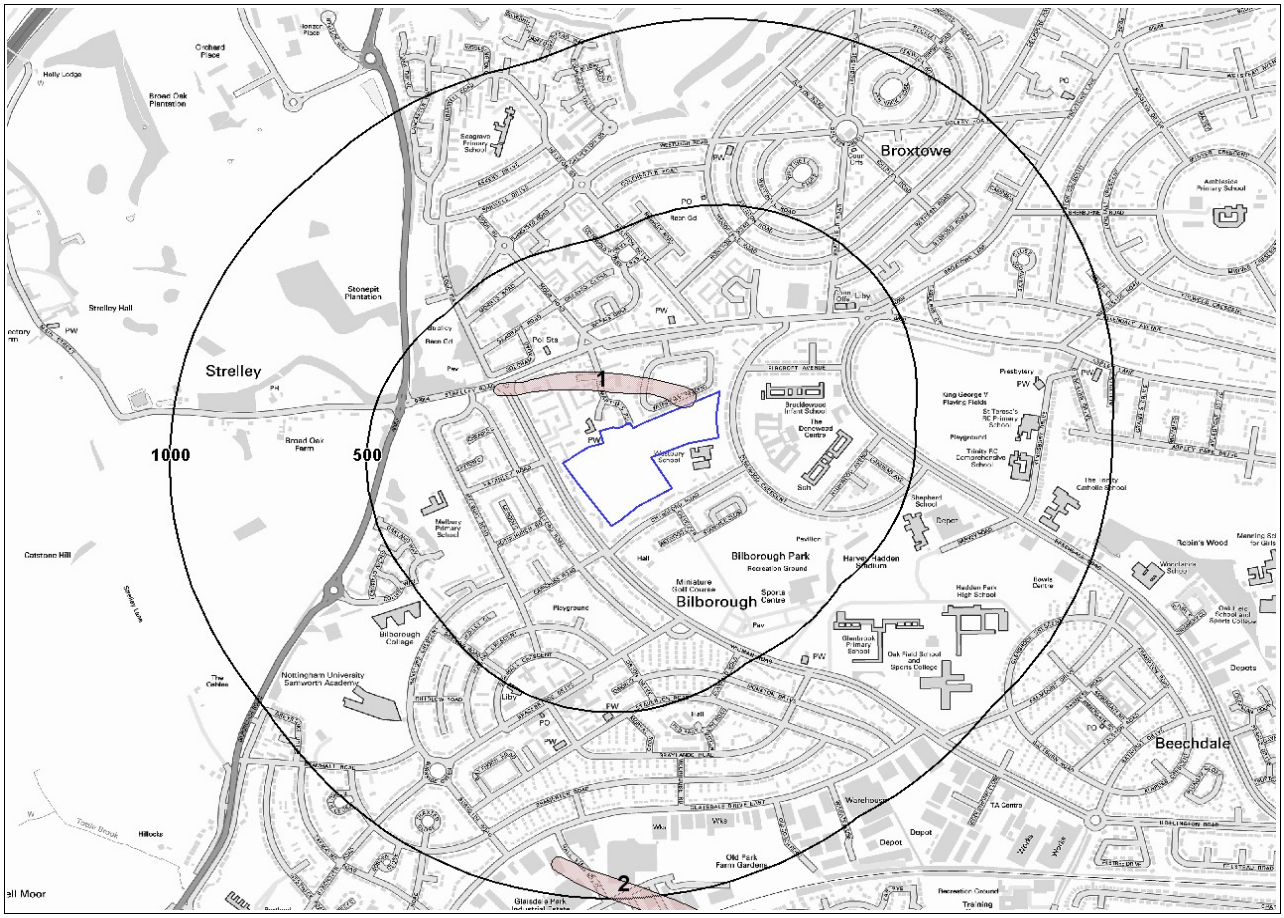
2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)

NW N NE



W E

SW S SE

Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	HEAD-DMTN	HEAD	DIAMICTON

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? No

Database searched and no data found.

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

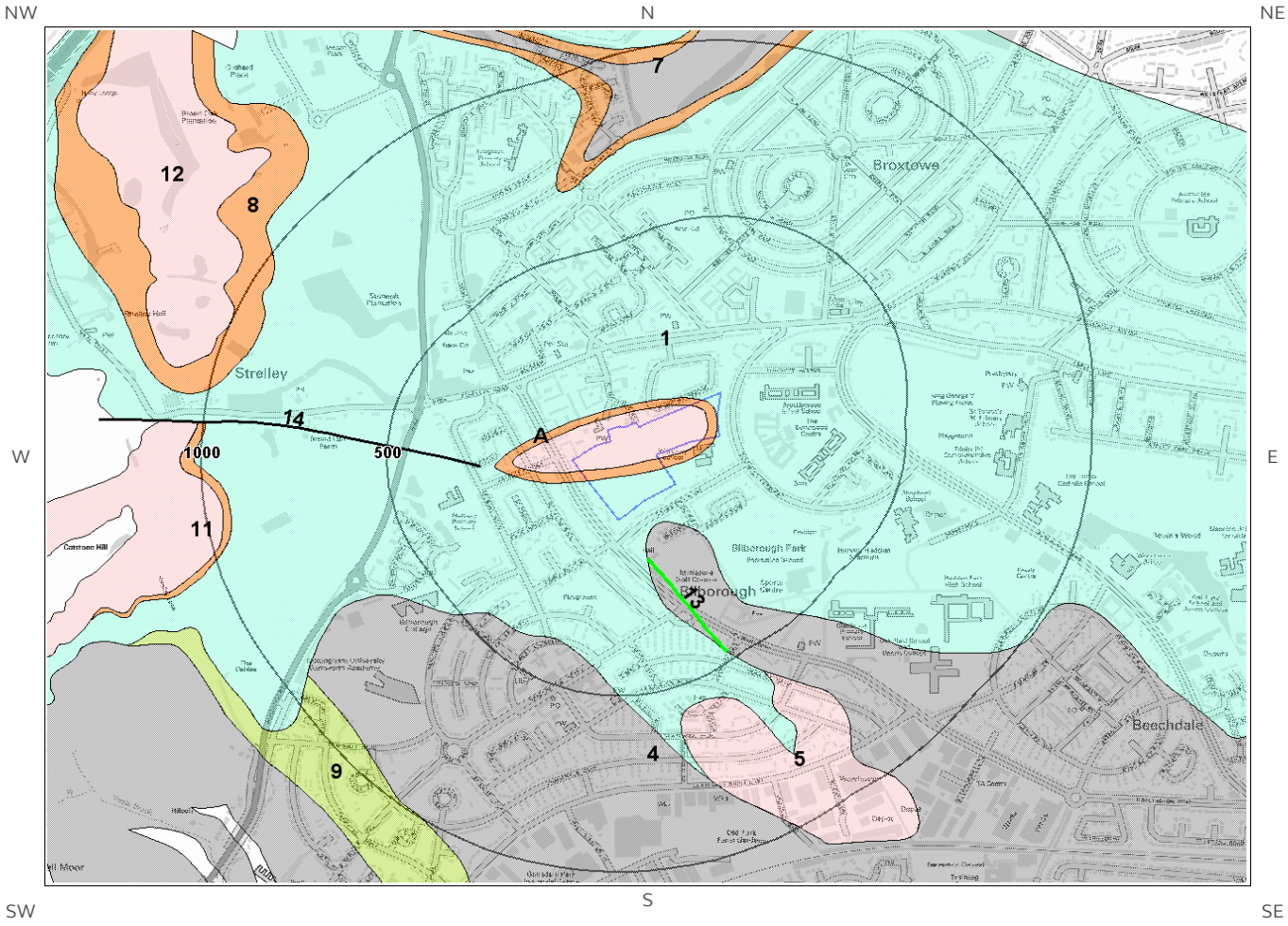
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 125

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	CDF-DOLO	CADEBY FORMATION - DOLOSTONE	-
2A	0.0	On Site	EDT-MDSD	EDLINGTON FORMATION - MUDSTONE AND SANDSTONE	-
3A	0.0	On Site	LNS-SDST	LENTON SANDSTONE FORMATION - SANDSTONE	-
4	73.0	SE	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Moderate	Low
0.0	On Site	Fracture	Very High	High
0.0	On Site	Intergranular	High	Moderate

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
13	135.0	SE	ROCK	Coal seam, inferred
14	248.0	W	FAULT	Fault, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level.

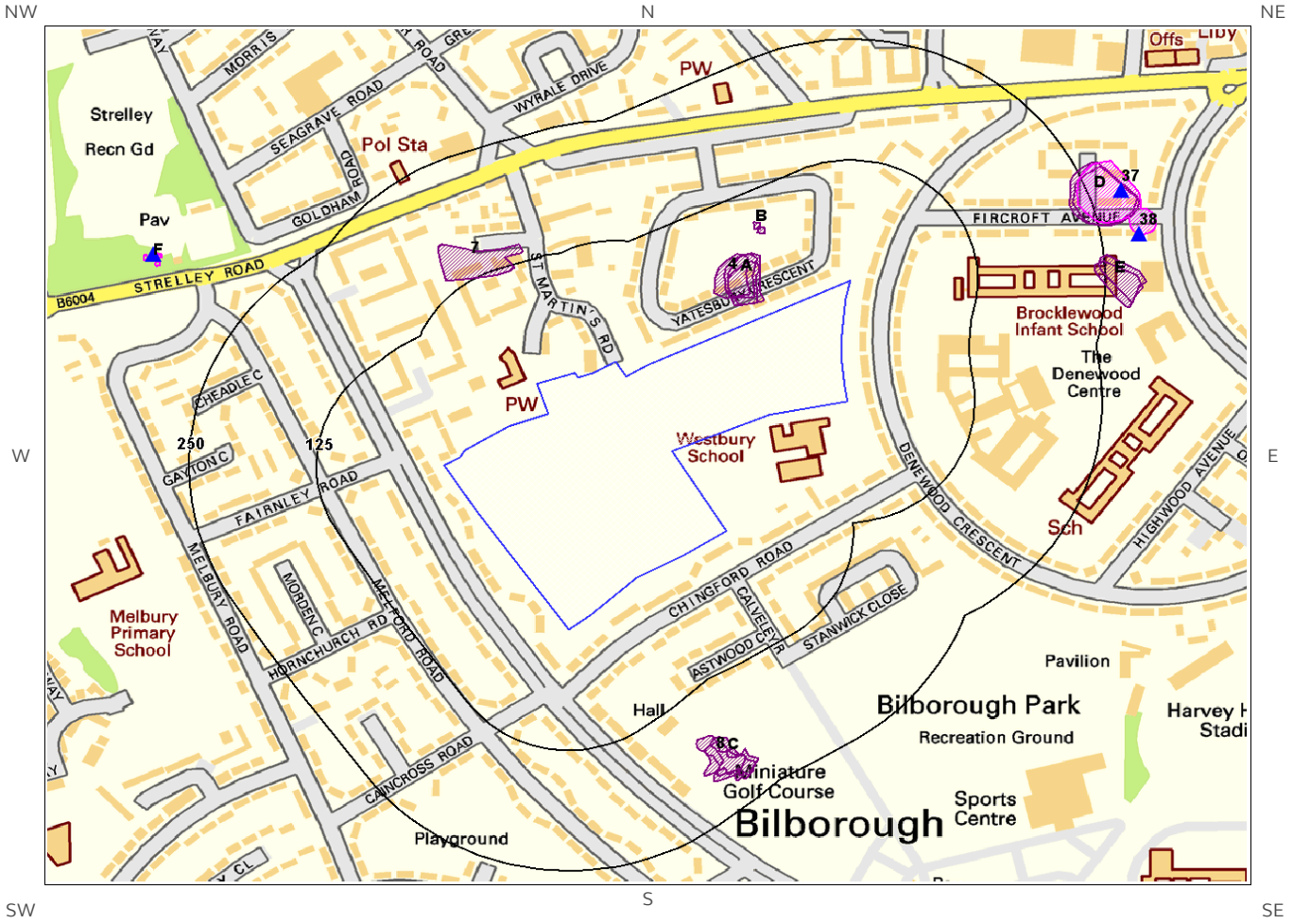
The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? Basic radon protective measures are necessary.

---

4 Ground Workings map



Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	15.0	NW	452245 341914	Unspecified Heap	1881
2A	15.0	NW	452243 341910	Unspecified Heap	1921
3A	23.0	NW	452240 341918	Unspecified Heap	1938
4	27.0	NW	452231 341917	Unspecified Heap	1950
5B	79.0	NW	452260 341965	Sewage Tank	1921
6B	85.0	NW	452256 341970	Sewage Tank	1899
7	119.0	N	451985 341931	Pond	1967
8	167.0	SE	452221 341420	Pond	1950
9C	175.0	SE	452233 341420	Pond	1881
10C	175.0	SE	452233 341420	Pond	1899
11C	175.0	SE	452233 341420	Pond	1938
12C	178.0	SE	452230 341416	Pond	1921
13D	229.0	E	452596 342002	Unspecified Heap	1899
14D	233.0	E	452598 342000	Unspecified Ground Workings	1921
15D	237.0	E	452608 341999	Old Coal Pit	1881
16E	241.0	E	452611 341909	Pond	1921
17E	244.0	E	452614 341914	Pond	1881
18E	244.0	E	452614 341914	Pond	1899

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
19D	237.0	E	452608 341999	Old Coal Pit	1881
20F	347.0	NW	451669 341930	Unspecified Old Shaft	1921
21F	351.0	NW	451671 341938	Old Coal Pit	1881
22F	354.0	NW	451667 341939	Unspecified Old Shaft	1938
23F	355.0	NW	451664 341937	Old Coal Shaft	1899
24F	360.0	NW	451657 341936	Unspecified Old Shaft	1950
Not shown	868.0	E	453194 341558	Old Coal Pit	1881
Not shown	896.0	NW	451294 342335	Unspecified Old Shaft	1921
Not shown	898.0	NW	451296 342340	Old Coal Pit	1881
Not shown	901.0	NW	451289 342338	Old Coal Shaft	1899
Not shown	906.0	NW	451290 342346	Unspecified Old Shaft	1938
Not shown	907.0	NW	451284 342344	Unspecified Disused Shaft	1973
Not shown	907.0	NW	451284 342344	Unspecified Disused Shaft	1989
Not shown	910.0	NW	451281 342343	Unspecified Old Shaft	1950
Not shown	915.0	N	452488 343006	Colliery	1938
Not shown	930.0	N	452405 342933	Colliery	1899
Not shown	945.0	N	452400 342899	Old Coal Pit	1881
Not shown	979.0	N	452378 342894	Unspecified Shafts	1950

4.3 Current Ground Workings

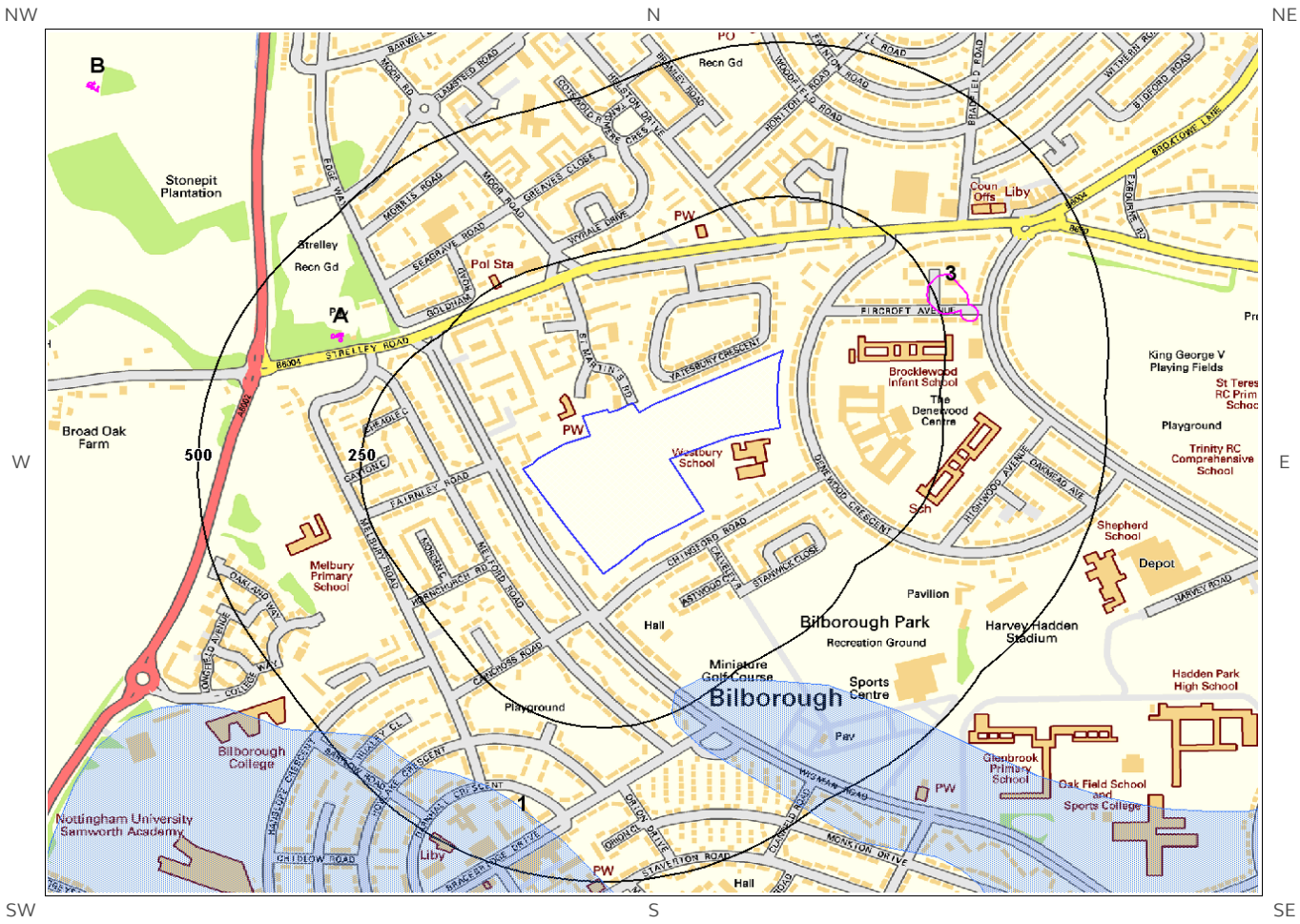
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
37	282.0	E	452613 342006	Coal, Deep	Machinehouse Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
38	287.0	E	452630 341961	Coal, Deep	Machinehouse Coal Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
39F	360.0	NW	451664 341940	Coal, Deep	Bilborough Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	477.0	N	452258 342381	Dolomite	Broxtowe Stonepit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	733.0	NW	451348 342140	Dolomite	Strelley Stonepit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	880.0	E	453195 341562	Coal, Deep	Shepard's Wood Coal Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	906.0	NW	451289 342341	Coal, Deep	Bilborough Coal Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

Site Outline

250
500
Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
3	237.0	E	452608 341999	Old Coal Pit	1881
4A	347.0	NW	451669 341930	Unspecified Old Shaft	1921
5A	351.0	NW	451671 341938	Old Coal Pit	1881
6A	354.0	NW	451667 341939	Unspecified Old Shaft	1938
7A	355.0	NW	451664 341937	Old Coal Shaft	1899
8A	360.0	NW	451657 341936	Unspecified Old Shaft	1950
Not shown	868.0	E	453194 341558	Old Coal Pit	1881
10B	896.0	NW	451294 342335	Unspecified Old Shaft	1921
11B	898.0	NW	451296 342340	Old Coal Pit	1881
12B	901.0	NW	451289 342338	Old Coal Shaft	1899
13B	906.0	NW	451290 342346	Unspecified Old Shaft	1938
14B	907.0	NW	451284 342344	Unspecified Disused Shaft	1973
15B	907.0	NW	451284 342344	Unspecified Disused Shaft	1989
16B	910.0	NW	451281 342343	Unspecified Old Shaft	1950
Not shown	915.0	N	452488 343006	Colliery	1938
Not shown	930.0	N	452405 342933	Colliery	1899
Not shown	945.0	N	452400 342899	Old Coal Pit	1881
Not shown	979.0	N	452378 342894	Unspecified Shafts	1950

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	221.0	SE	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
Not shown	763.0	NW	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

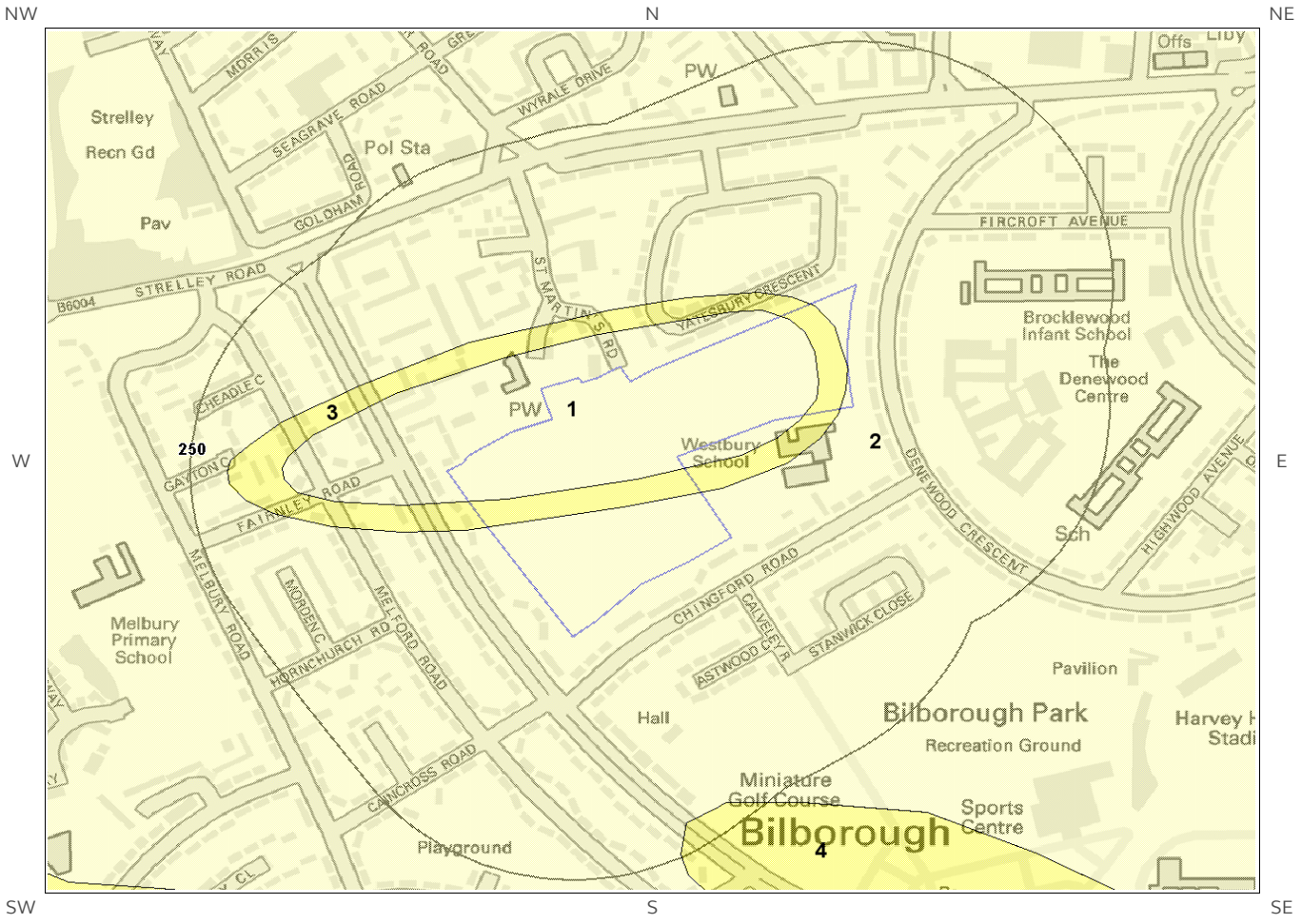
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

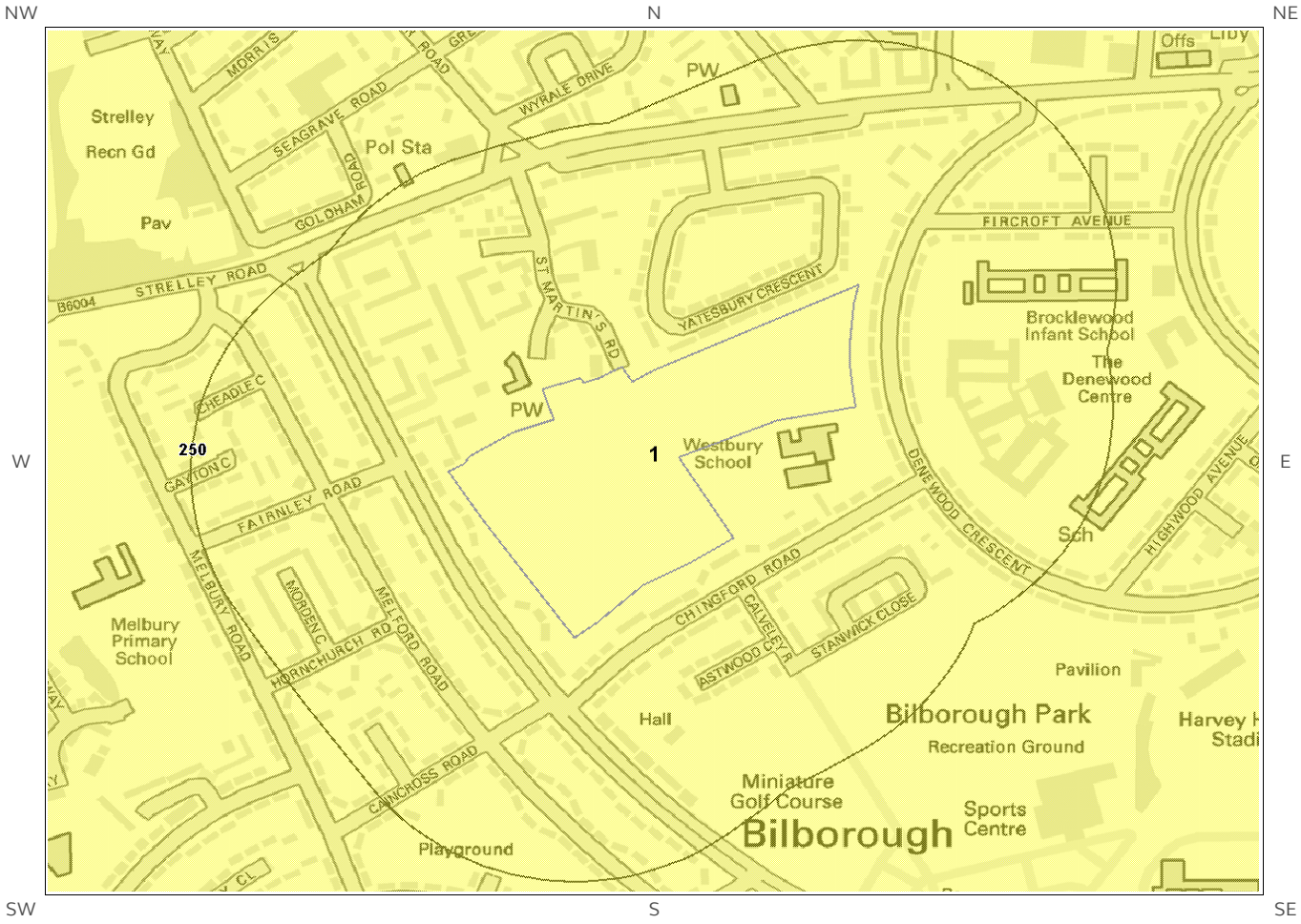
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



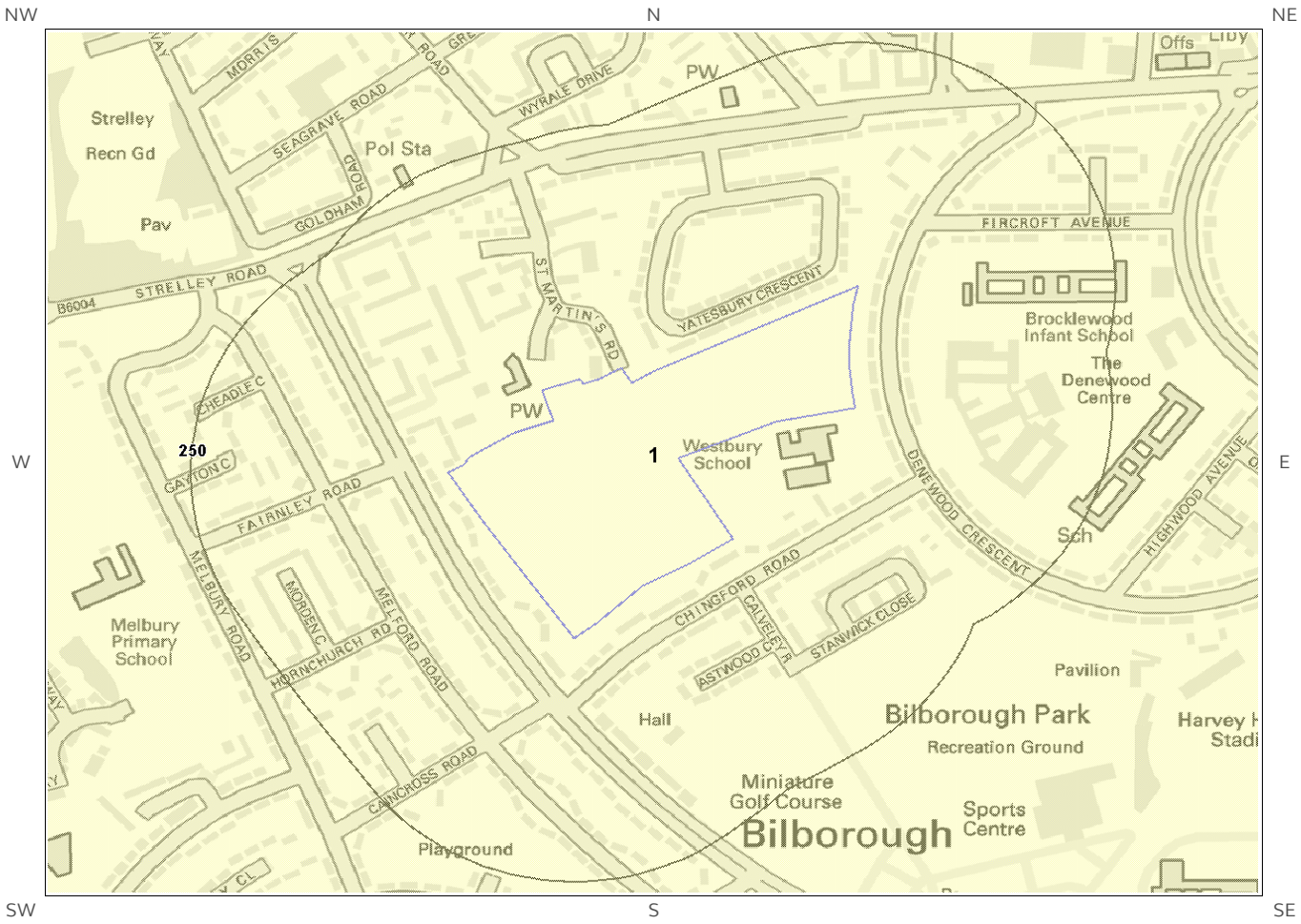
Shrink Swell Clay Legend

6.2 Landslides map



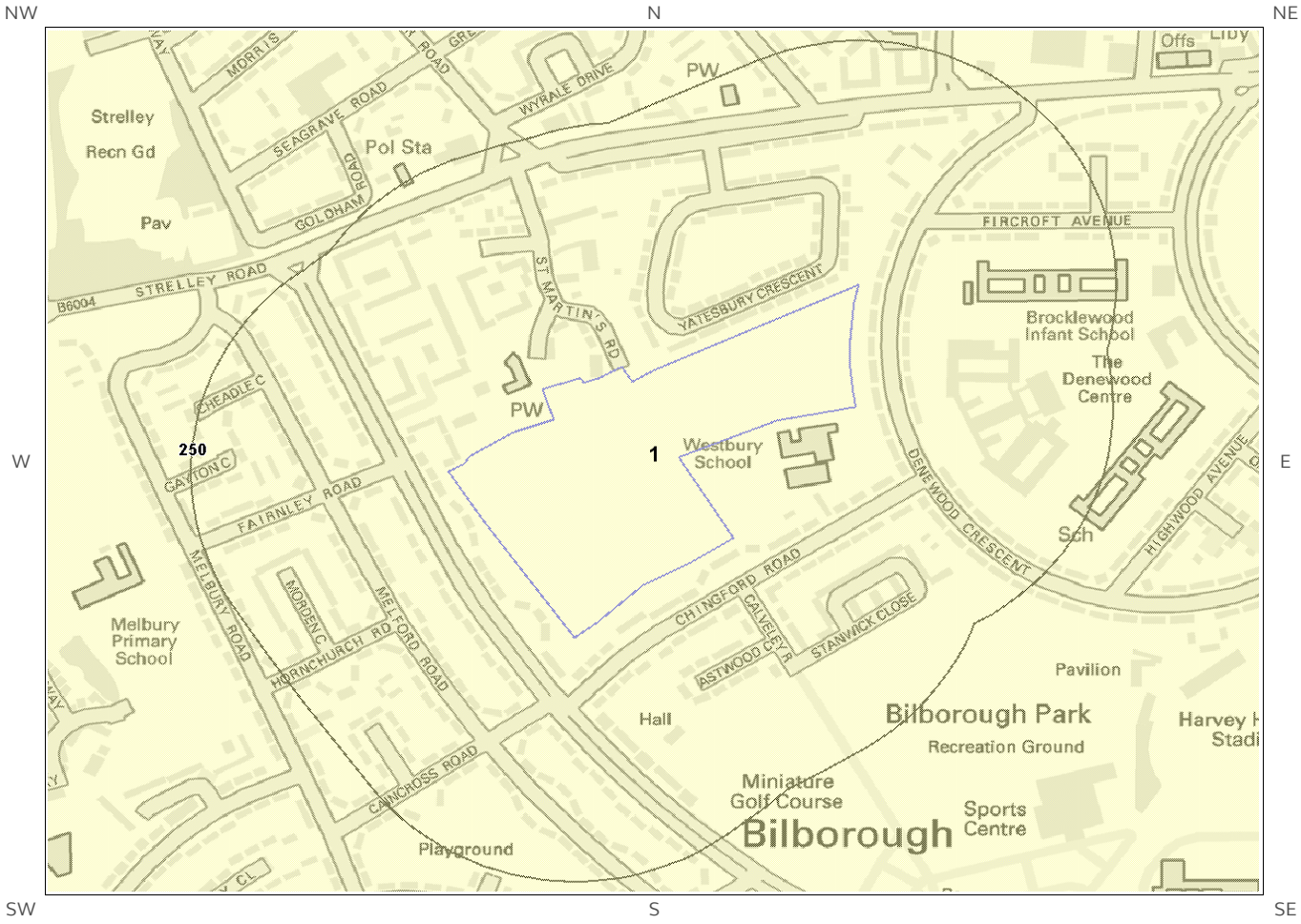
Landslides Legend

6.3 Ground Dissolution of Soluble Rocks map



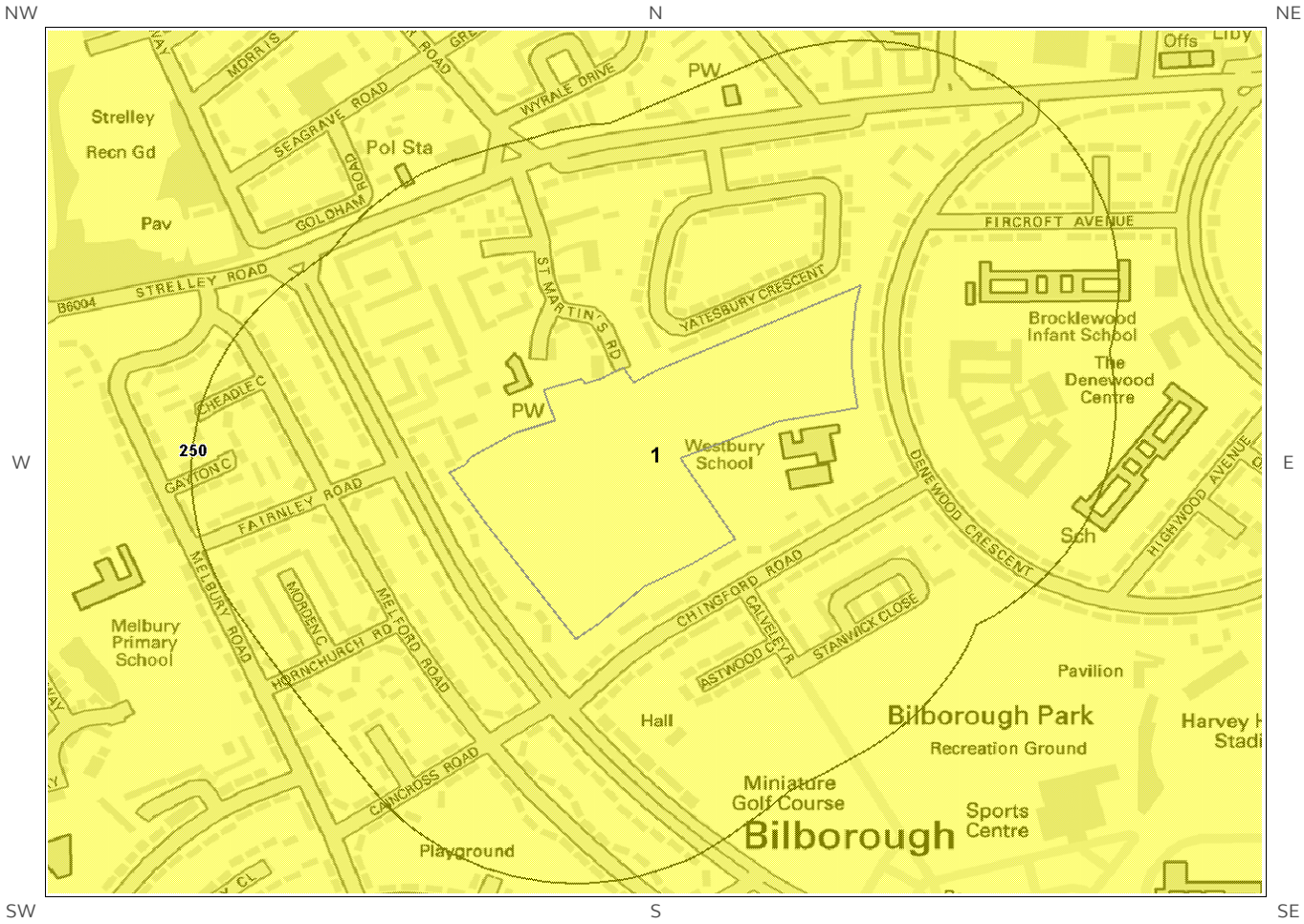
Ground Dissolution Soluble Rocks Legend

6.4 Compressible Deposits map



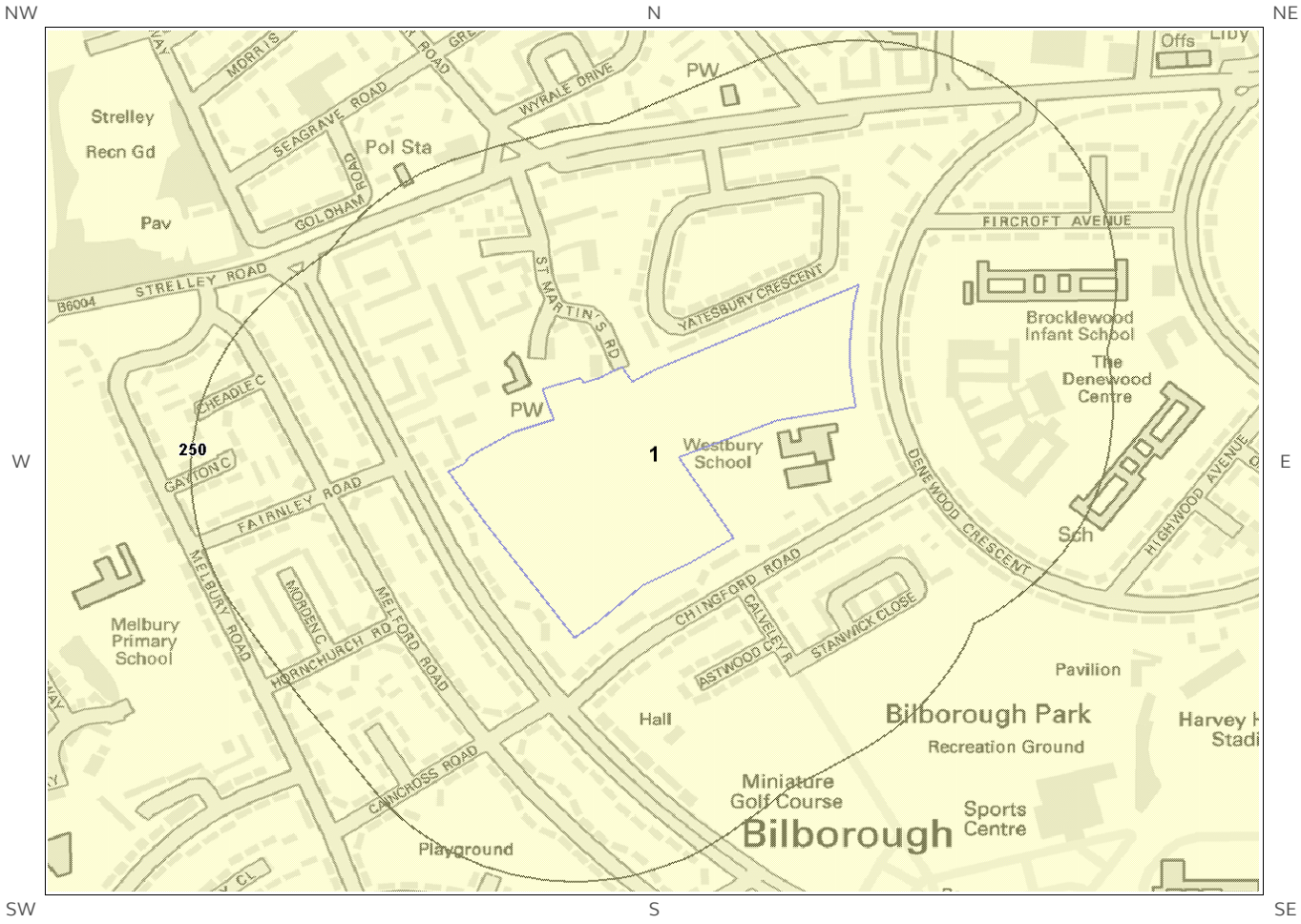
Compressible Deposits Legend

6.5 Collapsible Deposits map



Collapsible Deposits Legend

6.6 Running Sand map



Running Sand Legend

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Very Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
3	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

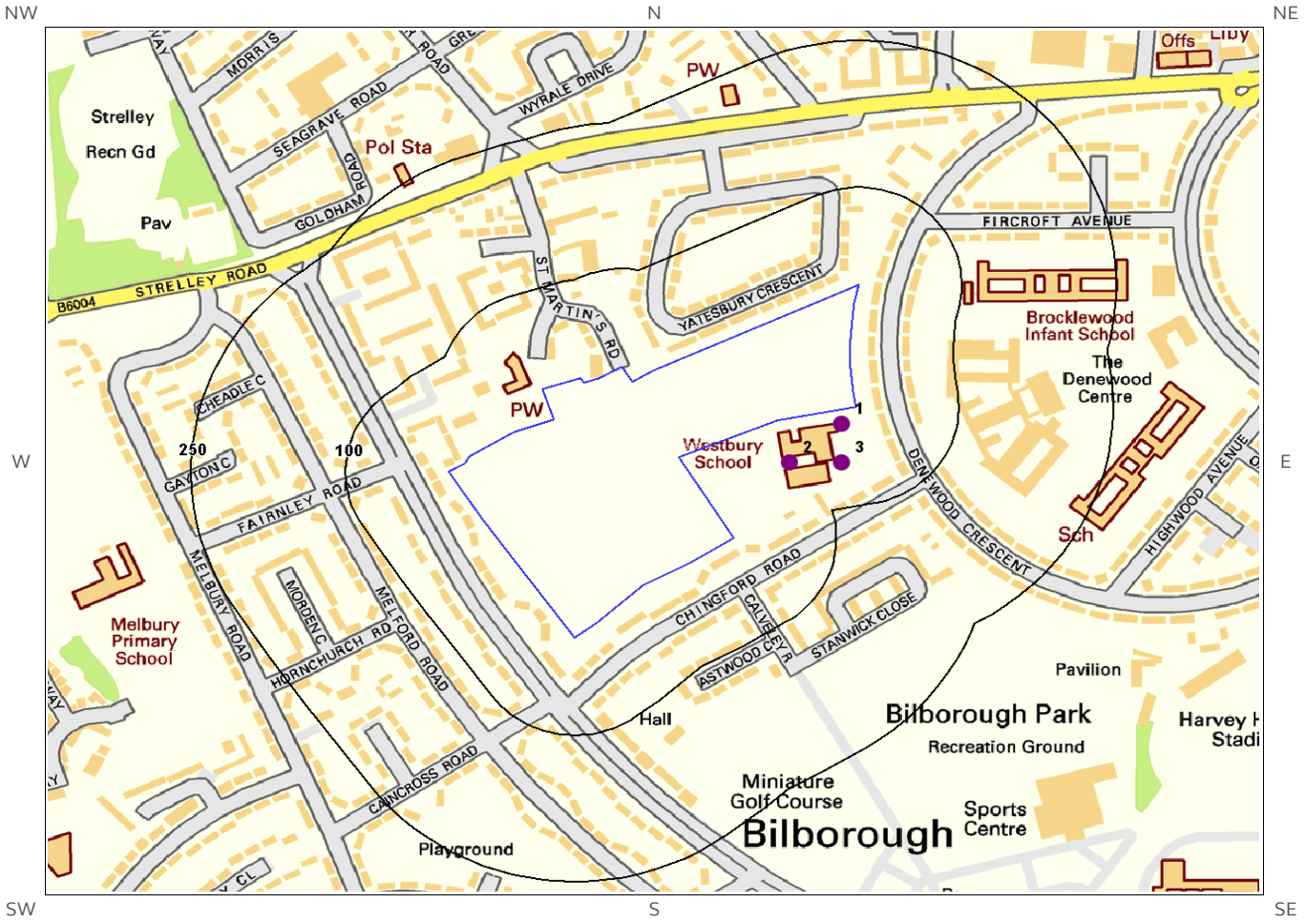
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 3

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	15.0	S	452330 341770	SK54SW83	3.04	E.S.N.SCHOOL CHINGFORD RD BILBOROUGH BH4
2	45.0	S	452280 341730	SK54SW82	6.09	E.S.N.SCHOOL CHINGFORD RD BILBOROUGH BH2
3	54.0	S	452330 341730	SK54SW81	3.04	E.S.N.SCHOOL CHINGFORD RD BILBOROUGH BH1

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/228140
#2: scans.bgs.ac.uk/sobi_scans/boreholes/228139
#3: scans.bgs.ac.uk/sobi_scans/boreholes/228138

8 Estimated Background Soil Chemistry

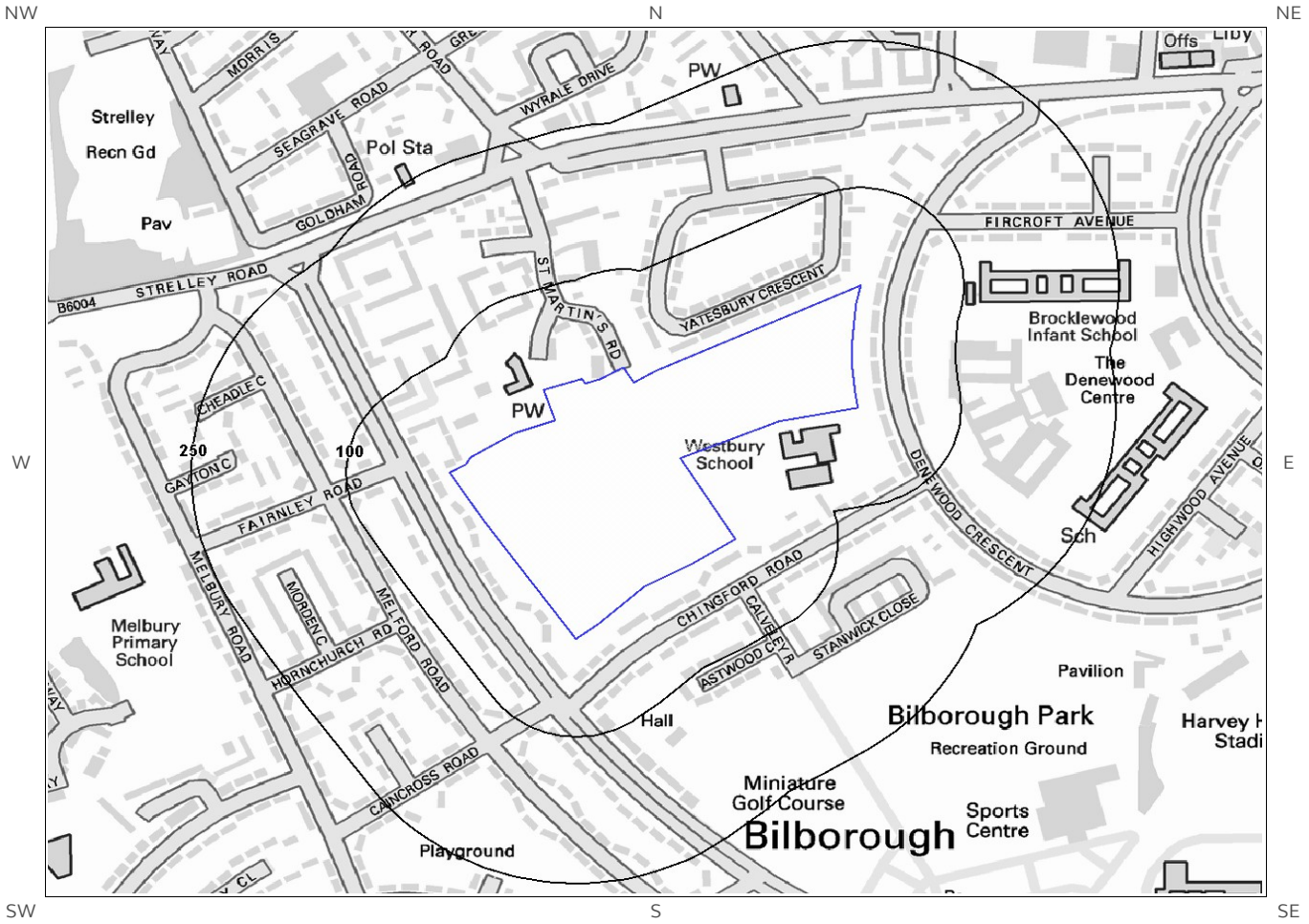
Records of background estimated soil chemistry within 250m of the study site boundary: 9

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

- Site Outline
- Search Buffers (m) — 250 / 500
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- High Speed 2 Revised Proposed Route
- Crossrail 1
- Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No
Have any other railway tunnels been identified within 250m of the site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? Yes

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

Hydrock

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marcushaes@hydrock.com

British Geological Survey Enquiries

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Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

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Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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Tel: +44 (0) 1384 262 000
Email:**enquiries.gs@jpb.co.uk**
Website: **www.jpb.co.uk**

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS

Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website:**http://www1.getmapping.com/**

Peter Brett Associates

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Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-sept-2016/

The Coal Authority

Resolving the impacts of mining

CON29M Non-Residential Mining Report

CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR
NOTTINGHAMSHIRE

Date of enquiry:	13 February 2018
Date enquiry received:	13 February 2018
Issue date:	13 February 2018
Our reference:	51001780302001
Your reference:	HYD-4729987

CON29M Non-Residential Mining Report

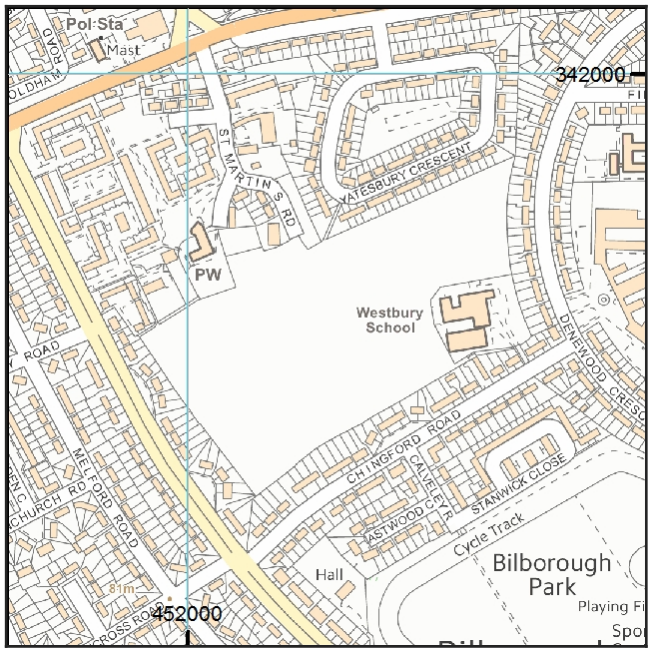
This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

GROUNDSURE LIMITED

Enquiry address

CHINGFORD DEVELOPMENT, OFF ST MARTINS ROAD, NOTTINGHAM, NG8 3AR, NOTTINGHAMSHIRE



Approximate position of property

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 3 seams of coal at 80m to 250m depth, and last worked in 1935.

Any movement in the ground due to coal mining activity should have stopped.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining
The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining
The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining
There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas
The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining
The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order
The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

Disclaimer

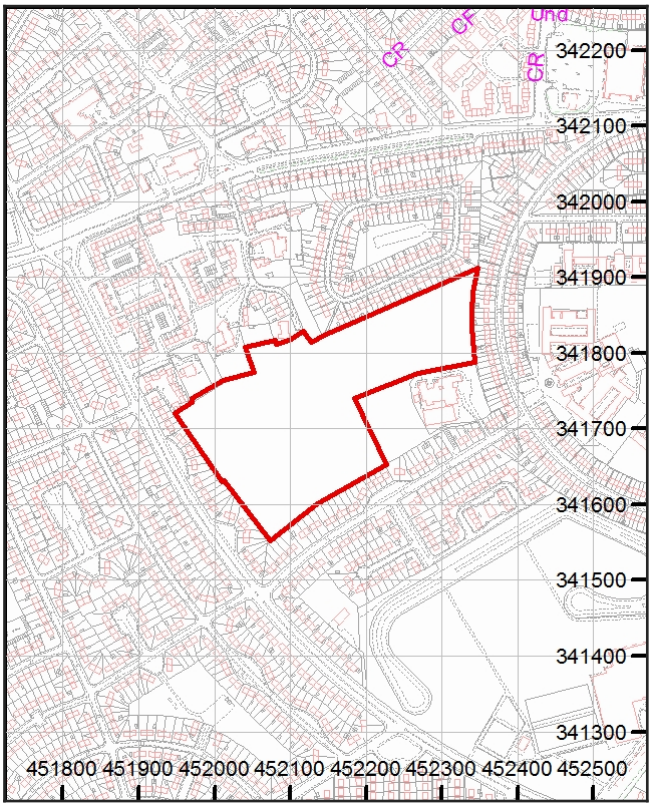
Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown



Map data

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REGIONAL UNEXPLODED BOMB RISK

NOTTINGHAMSHIRE

DENSITY OF BOMBS PER BOROUGH

Borough	High explosive	Anti-personnel	Incendiary
Nottingham	422	0	3
Newark	137	0	2
West Bridgford	63	0	0
Bingham	202	0	3
Beeston&Stapleford	69	0	0
Basford	138	0	4
East Retford	181	0	1
Carlton	26	0	0

BOMB RISK MAP

OTHER WWII TARGETS
- military
- transport
- utilities
- industry
- docks
- other

BOMB TONNAGE
- >1000
- >500
- >100
- > 0
- unverified

BOMB RISK
- high
- moderate
- low

The information in this regional UXB risk map is derived from a number of sources and should be read in conjunction with the "Users' Guide" (printed overleaf). Zetica cannot guarantee the accuracy or completeness of the information or data.

This map covers regions of coast with beaches, estuaries and alike. Further consideration of the bomb risk is required in these areas. The often inaccessible nature and changing ground conditions (e.g. movement of silt that may contain ordnance) means that historical bombing records for these areas are often poor or inaccurate and further assessment of the bomb risk may be required as part of a site specific study.

A FOUR-STEP PROCESS

Risk assessment and method statement from a qualified explosive ordnance clearance (EOC) operative.

Surface geophysical survey to allow shallow groundwork.

MAGCONE detects UXBs and obstructions on piling layout to the no-risk depth.

Detected UXBs can be dealt with by our EOC engineers and a Clearance Certificate issued for the site.

BOMB MAP USERS' GUIDE

Sources of information and explanation of bomb risk

Why?

Unexploded bombs (UXB) still present a risk to construction projects long after the end of the Second World War (WWII). UXBs often entered the ground unnoticed at high velocity and penetrated to a depth of several metres. Here they remain – vulnerable to disturbances from construction work. Beyond the depth of shallow excavation work, the greatest risk is to piling, drilling and probing crews. A piling rig could repeatedly hit a UXBs with considerable force before the crew realises an obstruction has been impacted. It could then be up to 72 hours before the detonator activates.

Who?

The responsibility for avoiding UXB risk usually lies with construction companies or house builders particularly those who are redeveloping urban sites. In addition, project engineering or environmental consultants are expected to advise their clients of a site's history. Other interested parties include those organisations whose employees are physically at most risk from intrusive works, normally piling companies, drillers or probing operators.

How?

UXB risk should be assessed for every site, but especially those in known heavily bombed areas or those situated near war-time strategic installations that were priority targets for enemy aircraft, for example, airfields. Zetica's regional bomb risk map is therefore a first point of reference from which the relative, potential abundance of UXBs can be judged. Consultants then advise their clients that an ordnance-risk desk study is required, which they may obtain from external sources. Construction companies or house builders who assess their own risk could choose to come direct to Zetica.

When?

Do not wait for the piling or drilling company to be on site before thinking about UXB risk – it will inevitably cause delays and higher costs. Request the regional bomb risk map from Zetica as soon as a site is being considered, and then use it to help you or your clients to decide if an ordnance-risk desk study is required.

Where?

Maps can be obtained for any county in England, Scotland, Wales or Northern Ireland – or for any London borough. They can help determine the areas that were most heavily bombed – but no part of the country should be considered 100% safe from UXB risk. Even remote rural areas can have a high risk if, for example, they were locations for decoy airfields or beacons that were lit to fool enemy pilots into thinking they had located a burning city that had been successfully hit by others in the raid.

How to use this regional map

This map is designed to give you an indication of the potential risk from UXBs in your area. If you are conducting work that involves excavation, piling or other disturbance of the ground, then you should use the map to identify the category of risk for your site.

The risk boundaries are a guide, compiled from data based on the political areas for which records are held; being just outside a high-risk area does not mean there is no UXB risk. You should use the map to assist in your decision of whether to investigate the UXB risk further.

Information on the regional risk remaining from UXBs in the UK

Zetica has built the largest UXB database of its kind in the UK. It includes a unique digital library of bomb census data, and maps showing key strategic points and bombing densities from the First and Second World Wars. The main sources of information include records from central government (Public Records Office), the Ministry of Defence, and the German Luftwaffe.

Using information from this database, Zetica has published maps of UXB risk on a regional, county and borough scale. The maps indicate relative degrees of UXB risk based on available records for bombing densities and known targeted areas for regions within the UK. The risk is broken down into individual boroughs, towns or cities. The data are based on the historical boroughs and are then overlaid onto the modern map. It is important to note that more-detailed research may be required for individual sites, particularly where proximity to a potential WWII target means the local risk may be higher.

High risk

Areas designated as high risk are those that show a high density of bombing hits (50+ bombs per 1000 acres) and abundant potential WWII targets. In high-risk regions, further action to mitigate UXB risk is considered essential.

Moderate risk

Moderate-risk regions are those that show a bomb density of between 11 and 50 bombs per 1000 acres and that may contain potential WWII targets. Action to mitigate the risk is considered essential, albeit more likely that a reduced scope of work is required compared with that needed for high-risk regions.

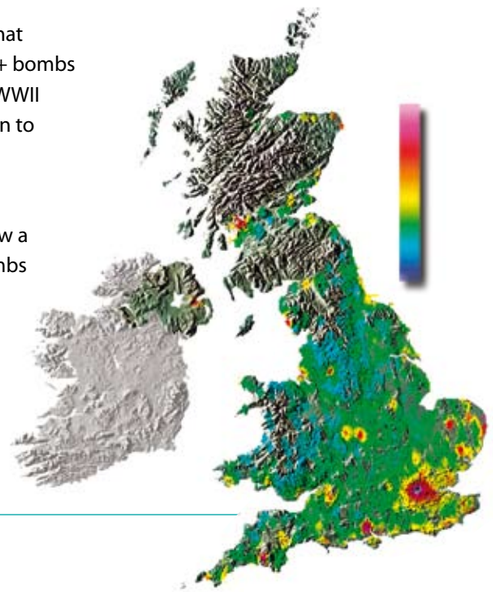
Low risk

Low-risk regions are those with a bombing density of up to 10 bombs per 1000 acres. These areas are considered to have a significant but low UXB risk. In general, further action to mitigate the risk is considered prudent, although not essential. Care is required when assessing the risk for specific sites where the risk may be higher because of local wartime activity.

Other WWII targets

Other regions with the risk of UXBs are key strategic points as defined by the government during WWII as representing potential enemy targets. Where these exist outside areas mapped as high, moderate or low risk, a site-specific assessment of the UXB risk may be required.

Relative UXB risk across UK



What to do if…

…you have a site that has a potential UXB risk

In the absence of current legislation requiring you to address the risk from UXBs, your responsibilities under health and safety legislation and regulations such as construction design and management require that you address all identified risks. The first stage is to request further advice from a professional adviser such as Zetica, or to gain more site-specific information by commissioning an ordnance-risk desk study. Then a strategy to deal with the risk can be established that is tailored to your proposed work.

…you find a suspect item or require advice

If during site works you find a suspect (ordnance-related) item, it is very important that you do not touch or move it (even if it has already been moved by an excavator). If it is clearly ordnance related, then dial 999 and ask for the police. Ensure that the area around the item is kept as clear as possible without placing yourself at risk. If you are unsure and do not wish to cause undue alarm, or you just require some advice, then you can call Zetica. We have experienced qualified UXB specialists on hand who can offer support and advice during any site works.

More-detailed procedures should be established in advance if you are in an area where the risk of finding a UXB is shown to be significant (moderate to high).

Site-specific desktop studies

Zetica is able to provide high-quality, site-specific UXB risk information for any residential, industrial or commercial property in the UK. These desktop studies provide details of the bombing density within an area and for the site itself, in order to indicate the risks of UXBs still being present. A risk assessment is provided to facilitate informed decision making on whether any further risk mitigation measures are required.

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Express Preliminary UXO Risk Assessment

Client	Hydrock
Project	Chingford Development
Site Address	Access off St. Martins Road, Nottingham, NG8 3AR
Report Reference	EP5988-00
Date	01/02/18
Originator	OG

Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the Chingford Development site. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

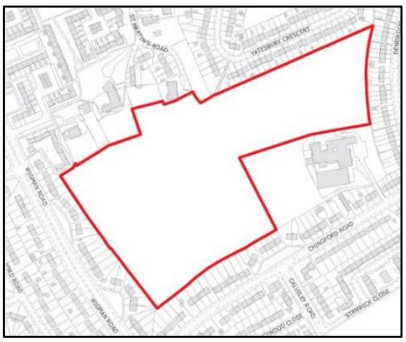
Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.

Risk Assessment Considerations	
Site location and description/current use	The site is located in Bilborough, within the City of Nottingham.  The site is an irregular shaped parcel of land currently occupied by vegetation in use as a recreation area. It is bound by residential structures and their adjoining gardens on Yatesbury Crescent to the north, Denewood Crescent to the east, Chingford Road to the south, and Wigman Road to the west. St Martin's Church borders to the north, with Westbury School to the south-east. The site is approximately centred on the OS grid reference: **SK 5214141721**.
Are there any indicators of current/historical military activity on/close to the site?	In-house records do not indicate that the site footprint had any former military use. No features such as WWII defensive positions, encampments or firing ranges are recorded to have been located at or in the immediate vicinity of the site. In addition, no information of ordnance being stored, produced, or disposed of within the proposed site boundary could be found. The closest recorded Heavy Anti-Aircraft (HAA) battery was situated approximately 1.25km to the south-east of the site. The conditions in which unexploded anti-aircraft ordnance may have fallen unrecorded within the proposed site are analogous to that of aerially delivered Luftwaffe bombs. For a discussion on these conditions see the relevant sections below.
What was the pre- and post-WWII history of the site?	Pre-WWII the site was occupied and bordered by open and undeveloped agricultural land. St Martin's Church and a roadway borders to the north, with Denewood Crescent to the east on 1938 historical OS mapping. Post-WWII mapping dated 1955 indicates that the site remained as open land now labelled as 'playing fields', although the surrounding area saw a number of significant developments. Immediately bordering the site to the east, south, and west are residential structures with their adjoining gardens and roadways. It is understood that the School to the east of the site was constructed by 1973, and the site has remained as open vegetated land according to recent aerial photography.
Was the area subject to bombing during WWII?	During WWII the site was located in the County Borough (C.B.) of Nottingham. Home Office (HO) statistics suggest that this area sustained a low density of bombing, with an average of 26.3 bombs recorded per 1,000 acres. This consisted of 422 high explosive (HE) bombs and 3 oil bombs culminating to 425 incidents over 16,172 acres. The site does not feature on mapping depicting the locality in the City of Nottingham most affected by HE bombs during WWII. This bomb plot map was published by the Nottingham Evening Post in May 1945. Although this map does not cover the site area in question, it indicates that the concentration of WWII bombing on Nottingham was situated away from the proposed site to the south-east towards the city centre.
Is there any evidence of bomb damage on/close to the site?	Due to the lack of structures present within the site during WWII, it has not been possible to ascertain if the site received bomb damage through historical OS mapping. High resolution WWII-era aerial photography would be required in order to identify any areas of ground disturbance and to understand the condition of the site during and immediately following the war.

To what degree would the site have been subject to access?	The site was situated in a largely rural area on the outskirts of the County Borough of Nottingham. A church was present to the north and a roadway to the east. While the area would have received some level of access, it is not considered likely that the site itself would have had specific post-raid inspections for evidence of UXO undertaken as it was occupied by undeveloped land which would not have been of importance.
To what degree has the site been developed post-WWII?	Limited post-war redevelopment appears to have taken place within the site, with OS mapping indicating that post-war the site became playing fields. While significant redevelopment has occurred in the surrounding area, the risk of UXO remaining is only considered to have been mitigated at the location of and down to the depth of any post-war foundations and excavations.
What is the nature and extent of the intrusive works proposed?	The proposed works are understood to include trial pitting using a mechanical excavator, and drilling window sample boreholes.

Summary and Conclusions

During WWII the site was situated within the County Borough of Nottingham, which sustained a low density of bombing according to Home Office (HO) statistics. While the site does not feature within available bomb plot mapping for Nottingham, it does show that the proposed site is not situated within the area of concentrated bombing. Furthermore, no significant Luftwaffe targets are located within the vicinity. Historical OS mapping does not give any indication of damage to the structures in the site's wider area including the nearby St Martins Church. No anecdotal evidence of bombing of the site or the wider area of Bilborough was found during the research for this preliminary report.

Recommendations

Given the findings of this preliminary report, it is recommended that **no further action** is taken for this site.

No evidence of significant risk of encountering UXO at the site of the proposed works could be found during preliminary research beyond the background risk of encountering UXO in this area of the UK. While 1st Line Defence cannot entirely discount the possibility that items of UXO could have fallen on the site undetected, it is not considered likely that further research undertaken in the form of a Detailed Risk Assessment, including the acquisition of additional information such as local archive records, would significantly alter the assessed risk level of minimal/low.

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

Appendix E

Hydrock Methodology

Hydrock desk study report appendix on Hydrock Methodology, version 03 updated 17-08-15 applies to this report.

This appendix has not been included in the printed report to reduce the document size.

It can be supplied on request by quoting the version number and date.