REDWOODS CENTRE, SOMERBY DRIVE, SHREWSBURY

PHASE I DESK STUDT APPRAISAL AND REVIEW FOR ALAN JOHNSON PARTNERSHIP LTD on behalf of SOUTH STAFFORDSHIRE AND SHROPSHIRE HEALTHCARE NHS FOUNDATION TRUST

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This report has been prepared in accordance with GRM's Accredited Quality Procedures.

If you have any queries regarding this report, please contact the project manager in the first instance.

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Issue	Description of Revision	Signature

Constructionline Silver Member

AGS

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APPENDICES

1 INTRODUCTION

1.1 PREAMBLE

GRM Development Solutions Limited (GRM) has been appointed by Alan Johnson Partnership Ltd (Client's Agent) on behalf of South Staffordshire and Shropshire Healthcare NHS Foundation Trust (Client) to undertake a combined Phase I Site Appraisal (desk study) together with a review of the existing ground investigation information. This report is intended to assess the current geotechnical and geo-environmental setting of the site, comment on the suitability of the current proposals with regard to contamination, ground gas requirements and foundations proposals and identify areas of particular concern that require targeted investigation.

GRM Standard Limitations of Reporting are provided in Appendix A of this report.

The Client proposes to develop the site with a link-building designed to join two existing hospital structures, the Caradoc to the west and the Wrekin to the east. The outline development proposals provided by the Client are presented in Appendix B.

The Client has informed GRM of the following potential development hazards:

- Existing structures
- Buried services (assumed)

The Client's Agent has provided a copy of a previous Phase II investigation undertaken by Clarkebond Consulting Engineers ('*Preferred Option 8 Phase 2b Geo-Environmental Site Assessment, Shelton Mental Health Hospital, Shrewsbury*', Reference YB1279/R10/REV3, dated May 2010) the results of which have been used in the compilation of this document. GRM have used the information provided to supplement the usual desk study sources but have no control over the accuracy of the data contained within the supplied report.

1.2 OBJECTIVES OF THE SITE APPRAISAL

The principal aims of the Phase I Site Appraisal (desk study) are as follows:

a) Obtain information, from easily accessible sources, about the soil and groundwater conditions within the area of the site.

b) Supplement the information from the usual desk study sources by using the results of the Clarkebond Phase II Report as provided by the Client's Agent.

c) Determine the possible ground related geotechnical and contamination hazards within the site boundaries that may affect the proposed development.

d) Provide preliminary development recommendations.

e) Provide advice on further works required for the cost-effective reduction of risks to the development and procedures likely to satisfy regulators.

Whilst every effort has been made to pre-empt the likely requirements of the Local Authority and the Environment Agency, they are likely to have specific requirements that will need to be discussed and addressed at a later date.

2 PHASE I DESK STUDY AND SITE OBSERVATIONS

2.1 INFORMATION SOURCES

In addition to the general sources of information listed in Appendix A (i) the Client has supplied the following information that has been used in the assessment of the site:

- the location of the site
- proposed development layout
- previous ground investigation report (Clarkebond Consulting Engineers '*Preferred Option 8 Phase 2b Geo-Environmental Site Assessment, Shelton Mental Health Hospital, Shrewsbury'*, Reference YB1279/R10/REV3, dated May 2010).

2.2 SITE DESCRIPTION

2.2.1 Geographical Setting

The development site is located in the south west area of the wider hospital complex, which itself is situated approximately 3km west of Shrewsbury town centre. The National Grid Reference (NGR) for the approximate centre of the site is SJ 461 127. Site Location and Boundary Plans are presented in Appendix C.

The northern, eastern and western boundaries of the proposed structure is formed by existing hospital buildings with open ground to the south.

The topography of the development site is flat lying.

2.2.2 Site Inspection Observations

No site walkover has been conducted and the comments below are formed from commercially available aerial imagery and the supplied information.

The development area forms an approximate rectangle of land situated between the Caradoc and Wrekin hospital buildings. The development comprises an area of approximately 105m^2, which is to be constructed on presently undeveloped land.

Significant Features identified during site inspection:
Existing buildings adjacent – geotechnical hazard (existing foundations). **Live services (assumed)** – general constraint for development.

2.3 HISTORICAL DEVELOPMENT OF THE SITE

A review of the available historical Ordnance Survey (OS) maps gives an insight into the development of the site and can highlight potential hazards. Extracts of the maps reviewed are provided in Appendix D.

The development area presently comprises a small parcel of land between two existing hospital buildings. There is no evidence from the historical maps reviewed that the development area has ever been subject to any previous development.

The adjacent hospital buildings appear to have been constructed c.2015. Whilst no development is recorded within the development area itself, limited made ground is anticipated from the adjacent construction. Given the lack of previous development and the date of construction of the current hospital structures, asbestos containing materials are not anticipated to be present in the existing structures are within the site soils.

Significant Features identified on OS Maps:
Limited made ground - potential source of contamination, potential source of ground gas (considered very low risk).

2.4 ANTICIPATED GEOLOGY

The BGS Geological Sheet for this area shows the site to be underlain by:

- Superficial Glaciofluvial deposits comprising sand and gravel.
- Solid geology of Kinnerton Sandstone comprising red-brown to yellow, generally pebble-free, fine- to medium-grained, cross-stratified sandstone considered likely to have weathered to a sand at shallow depth.

The BGS holds two borehole records close to the site, copies of which are presented in Appendix E. The BGS boreholes suggest superficial deposits to between 6m and 8m below ground level overlying sandstone.

The site is not indicated to be directly affected by faulting.

Limited made ground is indicated by the BGS boreholes and whilst some made ground can be expected due to the adjacent development and that of the wider hospital complex, it is not anticipated to be extensive.

2.5 PROVEN GEOLOGY

Clarkebond has undertaken at least three phases of intrusive investigation, the first two on the wider hospital complex and the third a targeted investigation to confirm anecdotal information surrounding a potential Foot and Mouth burial excavation:

- 23rd and 26th February 2009 comprising nineteen window sample holes (WS1 to WS19 and a hand excavated pit (HP20) to a maximum depth of 5.45m below existing ground level (begl).

- 8th and 15th September 2009 comprising thirty-one window sample boreholes (WS21 to WS52) to a maximum depth of 5m begl. Additionally, six cable percussive boreholes were undertaken to a depth of 10m begl. Three of the cable percussive boreholes (BH1, BH4 and BH6) were installed to allow gas / groundwater monitoring to be conducted.

- 28th October 2009 comprising five window sample boreholes (WS52 to 56) and targeted at the location of a reported Foot and Mouth burial pit to a maximum depth of 5.45m begl.

Across the three phases of investigation eleven mechanically excavated trial pits, seven trial trenches and two soakaway pits were also undertaken to a maximum depth of 3m begl.

Of the exploratory holes undertaken across the wider hospital complex none are located directly within the proposed development area; however, a number are recorded to be within a radius of c.50m. It is considered that the results from these holes (WS13, WS41, WS46-WS48 and BH6) are likely to be most pertinent to the development area. An exploratory hole plan and the relevant exploratory hole logs are presented In Appendix F.

Topsoil (including subsoil)
Topsoil was encountered in all exploratory holes except WS50 as dark brown, slightly silty, clayey SAND with gravel or a brown friable sandy, gravelly, clayey SILT with rootlets and gravel comprising siltstone and sandstone with thicknesses ranging between 0.1m to 0.5m, typically 0.4m.

Made ground
In the vicinity of the development area made ground was only encountered in WS50 from ground level as firm, brown slightly sandy, gravelly SILT / CLAY with gravel including siltstone and sandstone with a thickness of 0.3m.

Glacial Strata
Variable glacial soils were observed directly beneath the topsoil (or the made ground in WS50) comprising firm to stiff sandy to very sandy silty gravelly CLAY, soft to stiff sandy gravelly SILT and loose to very dense very silty, gravelly SAND. The glacial soils were encountered to a maximum depth of 8.4m begl (BH5).

SPT 'N' Values			
Depth (m) begl / Strata Type	**Clay**	**Silt**	**Sand**
1	16-50	12-50	35-50

2	21-33	21-34	15-38
3	8-50	14-50	-
4	30-50	42-50	22-50
5	16-50	16-50	5
6	12	-	-

Cohesive Soil strengths (clay and silt)
Utilising the empirical relationship formulated by Stroud (1974) where undrained shear strength is related to SPT N-values and a factor based on plasticity, these are indicative of medium to very strength soils at 1m depth, high to very high at 2m depth, low/medium to very strength soils at 3m, high to very high at 4m and 5m depth and medium at 6m depth.

Granular Soil Density (sand and gravel)
The granular soils encountered were dense to very dense at 1m depth, medium dense to dense at 2m depth, not encountered at 3m depth, medium dense to dense at 4m depth and loose at 5m depth

Kinnerton Sandstone
Near the proposed development strata considered potentially representative of the Kinnerton Sandstone was only encountered in the cable percussive boreholes (BH5 and BH6) at depths of between 5.7m and 8.4m begl as grey/red SILT/SILTY SAND. Proven thicknesses varied between 1.65m and 4.35m; however, the full thickness of the stratum was not proven.

Soil densities within the potential weathered Kinnerton Sandstone (sand) were generally at least loose to medium dense.

Significant Features identified from geological data:
Cohesive strata – deepened foundations in association with trees. **Localised made ground** - potential source of contamination and ground gas (considered low risk). **Variable strata (glacial soils)** – potential geotechnical hazard (deepening of foundations).

2.6 HYDROGEOLOGICAL INFORMATION

One of the BGS boreholes (SJ 41 SE) reports a water strikes at 32m begl within the Kinnerton Sandstone. The previous GI generally recorded an absence of groundwater within the vicinity of the development area.

Groundwater was noted in WS40 (3m begl), WS42 (2.2m and 3m begl) and in WS46 (3.7m begl) all within the glacial soils. The groundwater reported is considered to represent perched volumes within or close to the interface of granular / cohesive units.

The Environment Agency has classified the underlying strata (Glaciofluvial deposits) as a Secondary A aquifer and the Solid strata (Kinnerton Sandstone) as a Principal aquifer.

There are no recorded groundwater abstraction licenses within 500m of the site. The site is recorded to be within a Zone 3 Groundwater Source Protection Zone (GSPZ) relating to the Kinnerton Sandstone encountered at depth in the vicinity of the development area.

Information available at this stage suggests localised perched groundwater in the glacial soils with a true groundwater table in the Kinnerton Sandstone. Hydraulic continuity is expected between the site surface and the glacial soils and between the glacial soils and the underlying Solid strata.

Significant Features identified from hydrogeological data:
Secondary A aquifer (Glaciofluvial deposits) - potential receptor for site derived contamination. **Principal aquifer (Kinnerton Sandstone)** – potential receptor for site derived contamination. **On-site GSPZ** - potential receptor for site derived contamination.

2.7 HYDROLOGICAL INFORMATION

The only recorded local surface water is an off-site pond located c.135m to the south east. Given the distance and nature of the development the risk to the identified water feature is assessed as negligible.

There are no surface water abstraction licenses recorded within 500m.

There are no significant recorded pollution incidents to controlled waters within 250m.

Significant Features identified from hydrological data:
None identified.

2.8 FLOOD RISK

The Emap data suggests the development site is not within an area of potential groundwater flooding. The Phase II ground investigation undertaken suggests only limited volumes of perched water are likely to be present. It is recommended that the findings of the Phase II assessment are forwarded to the projects infrastructure engineer to enable them to assess the potential risk to the development infrastructure design.

A flood risk assessment is not required for this site as it is <1ha in size.

Significant Flood Risk Features identified:
No significant risk identified – Phase II findings to be considered by the project's infrastructure engineer.

2.9 MINING

2.9.1 Coal

The site is not within a Coal Mining Reporting Area, or a Development High Risk Area as defined by the Coal Authority.

In addition, no shallow coal bearing strata are recorded on the geological mapping; accordingly, the risk od shallow coal workings is assessed as negligible.

2.9.2 Brine

The site is not within the area defined by the Brine Compensation Board and no readily soluble strata are recorded beneath the area. Accordingly, the risk from dissolution is assessed as negligible.

2.9.3 Oil And Gas

GRM have conducted an on-line search, which has shown that the Oil and Gas Authority does not record the site to be within an on-shore licence area, an On-shore Hydrocarbon Field or a Shale Prospecting Area. Any future prospecting activities will require consideration of the sites current commercial end use, which is likely to make exploration socially and commercially unacceptable.

Significant Mining Risks:
None identified.

2.10 QUARRYING

An area of surface ground workings is recorded on the Emap data c.135m to the east. The purpose of the extraction is not known, and the workings are not recorded on the historical maps. At this stage it is assumed that the workings relate to the development of the wider hospital complex.

Significant Quarrying Risks:
No significant risk identified.

2.11 MINERAL RESOURCE PROTECTION

Whilst GRM can comment on the geological considerations regarding Mineral Resources, a legal expert should be commissioned concerning Mineral and Manorial Rights.

Given the size of the proposed development and its location, within an existing hospital complex, the site is not considered to be underlain by significant and easily exploitable mineral reserves and so a detailed Mineral Risk Assessment is not required.

Mineral Risk Assessment:
None identified.

2.12 ENVIRONMENTAL INFORMATION

An Environmental Report has been acquired for the site. The full report is presented in Appendix G. A summary of the relevant information not included elsewhere in this report is presented below:

- No historical landfill sites are recorded within 500m.
- There are two waste sites situated 34m and 63m to the east associated with an area of former surface ground workings. The sites are operated by Shropshire Health Authority and Shrewsbury and Telford Hospitals NHS Trust. At this stage the waste sites are considered to be a potential source of ground gas.
- There are several unspecified tanks, electricity substations and a gas governor within the wider hospital site; however, given the intervening infrastructure, none are considered to pose a significant risk to the proposed development.
- Anecdotal evidence supplied by SSC's Contaminated Land Department to Clarkebond indicates the burial of foot and mouth animal carcasses located in the north east of the wider hospital complex and c.285m away from the development site. The investigation works were on-going at the time of the production of the Phase II report; however, it is understood that the made ground associated with the pit has been removed from site.

Significant Features identified from Environmental data:
Waste sites recorded off-site – potential source of ground gas. **Former foot and mouth pit** – potential source of contamination (negligible risk as now removed and distinct from the development area).

2.13 ARCHAEOLOGY

Archaeological information has not been sought as part of this desk study and has not been identified as an issue by the Client. Some Local Authorities require at least an initial archaeological appraisal for development sites. GRM can undertake such appraisals if required. Archaeological investigations occasionally reveal ground-related problems from ancient times (prior to the 1st Edition OS maps) and can occasionally cause foundation and contamination development hazards.

Archaeological Hazards:
Not assessed.

2.14 INVASIVE PLANT SPECIES/ECOLOGY

GRM is not a specialist in this topic and has not conducted such a survey. No such issues are reported by Clarkebond. Furthermore, the occurrence of invasive plant species is unlikely given the context of the development.

Invasive Plant Species/Ecological Hazards:
None anticipated.

2.15 RADON ASSESSMENT

The site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings' (BR211 2015). The site is not within an area recorded to require radon protection measures.

Radon Hazard:
None required.

2.16 SUMMARY OF POTENTIAL GEOTECHNICAL/GENERAL HAZARDS

Potential geotechnical/general hazards have been identified in earlier sections and are summarised below.

Potential Hazard	Potential Consequence	Action
Existing buildings	Danger to personnel	Demolition required – Health & Safety guidelines
Live services	Danger to personnel	Inform relevant parties for disconnection / diversion
Potential made ground associated with adjacent development	Deepened foundations	Ground investigation
Variable strata (glacial soils)	Deepened foundations	Ground investigation

Potential sources, pathways and receptors are summarised in the Phase I Conceptual Model in Section 3, which is based on current relevant guidance, the principles of which are set out in Appendix A (iii).

2.17 CONTAMINANTS OF CONCERN

No additional contaminants to those specified in Appendix A (ii), have been identified.

3 PHASE I CONCEPTUAL SITE MODEL

HUMAN HEALTH			
Source	**Pathway**	**Receptor**	**Level of Risk**
Potentially contaminated made ground / fill associated with adjacent development.	Indoor and outdoor inhalation of soil dust, the ingestion of, and dermal contact with, contaminated soil and soil dust.	End users.	Very Low.
		Construction and Maintenance Workers.	
Potential made ground / fill associated with adjacent development.	Inhalation of ground gas.	End users.	Low.
Made ground.	Water pipes.	End users.	Very Low.

CONTROLLED WATERS			
Potentially contaminated made ground / fill associated with adjacent development.	Leaching of contaminants and vertical migration to the groundwater.	Secondary A and Principal aquifers. Groundwater Source Protection Zone and related abstraction point.	Low.

4 CONTAMINATION / REMEDIATION RECOMMENDATIONS

During the 2010 investigation only one exploratory hole (WS50) situated in proximity to the development area reported the occurrence of a minimal thickness (0.3m) of made ground. Exploratory holes closer to the proposed development recorded topsoil overlying natural strata, which is consistent with the Phase I Conceptual Model.

Clarkebond submitted fifty-seven samples of the soils recovered across the wider site for chemical analysis including metals, speciated PAH, TPH (speciated), SVOC, VOC and asbestos screens. None of the samples tested revealed elevated concentrations of contaminants in excess of the thresholds for residential end use without plant uptake.

Statistical outliers of PAHs were reported in WS25 and WS26 situated in the north east of the wider hospital site and remote from the proposed development area.

No asbestos was detected within the samples tested.

Based on the findings of the Phase II investigation and in the absence of a confirmed source of contamination the risk to end users and controlled waters is assessed as negligible and no remediation is considered to be required.

The use of PE water pipes is considered to be acceptable, should these be required as part of the development; however, this will require confirmation from the local water company.

Ground Gas

Potential sources of ground gas identified during the Desk Study assessment comprise the potential made ground generated by the adjacent development. Based on the findings of the Phase I Desk Study information the risk from ground gas is considered to be low.

Three combined gas / groundwater monitoring points were installed (BH1, BH4 and BH6) during the 2010 investigation. BH6 is situated c.65m to the east; the others are remote from the development area. In the absence of any significant made ground materials all installations targeted the natural strata (Glacial Till and possible weathered Kinnerton Sandstone).

The results from four rounds of gas monitoring (25th September and 11th November 2010) are included in the Phase II report. In summary, no significantly elevated concentrations of methane (>1%) or carbon dioxide (>5%) were identified. Flow rates varied between 0l/hr and 18.8l/hr (BH1 on 11th November), with a typical flow rate of 2.8l/hr.

The primary guidance document to determine if protection measures are required is BS8485:2015+A1:2019 *Code of practice for the design of protective measures from methane and carbon dioxide ground gases for new buildings*. This uses hazardous gas flow rates (Q_{hg}), which are gas concentrations multiplied by borehole flow rates, to

derive a Gas Screening Value (GSV) for the site. The gas regime is then determined based on the GSV and other limiting factors such as gas concentrations.

Using the maximum flow rate of 18.8l/hr and the maximum methane concentration of 0.1%v/v a Q_{hg} of 0.019l/hr has been calculated for methane. Using the maximum flow rate of 18.8l/hr and the maximum carbon dioxide concentration of 1.6%v/v, a Q_{hg} of 0.301l/hr has been calculated for carbon dioxide. On this basis the GSV for the site is determined as 0.301l/hr.

Although no significantly elevated concentrations of methane or carbon dioxide have been identified, as the GSV is between 0.07 and 0.7l/hr consideration has to be given to increasing the characteristic Situation from CS1 to CS2.

The flow rate of 18.8l/hr recorded on the 11th November 2010 at an atmospheric pressure of 995mb is considered to be anomalously high when compared to that of 6.6l/hr obtained on the 23rd October 2010 at a similar atmospheric pressure (996mb). Taking the highest flow rate (1.3l/hr) from BH6, closest to the proposed development, the GSV would be 0.021l/hr, which would equate to a classification of CS1 and for which gas protection measures would not be required.

At this stage it is considered that gas protection measures within the proposed link structure are not required; however, the Local Authority should be consulted to confirm this assessment.

5 GEOTECHNICAL ASSESSMENT

It should be noted that the following comments and recommendations are based on the findings of this desk study and information contained within the supplied Phase II report. At this stage based on the information available it is considered:

- The ground conditions are likely to comprise of variable glacial soils (clay, silt or sand). Plasticity index testing indicates the cohesive soils (clay and silt) are of low volume change potential; accordingly, a minimum foundation depth of 0.75m begl will apply. Rock is not expected to be present at shallow depth.
- SPT 'N' values within exploratory holes closest to the development area suggests the soils will have a nett allowable bearing capacity of at least 110kN/m^2 at anticipated foundation depth for either traditional trench fill foundations or a square pad foundation of 1.5m side dimensions founding at 1m depth. Given the variability in the soils reinforcement of the foundations is recommended. Care should be taken not to undermine the existing foundations.
- Should cohesive soils be present foundations may have to be deepened should they fall within the influencing distance of trees. Deepening should be in line with a recognised standard such as NHBC standards Chapter 4.2.
- Due to the variable nature of the soils the use of a suspended floor is recommended. Should the development fall within the heave zone of trees a voided suspended floor slab will be necessary.

- Ten samples of the Superficial materials were submitted for BRE sulphate suite analysis. Aqueous extract sulphate, as SO4, ranged from <0.01g/l to 0.03g/l and pH from 4.53 to 6.71. Based on the results presented the required concrete grade would be DS-1; AC3z.
- There are no anticipated slope stability issues at current gradients.
- Two insitu permeability tests were conducted across the wider hospital site. Infiltration was not sufficient to allow the reporting of any infiltration rates.
- De-watering for shallow, short-term excavations, is likely to require simple sump-pumping based on the observations made during the ground investigation.
- Nine re-moulded CBRs were conducted with results ranging between 10.4% and 44% with a mean CBR value of 24%. CBR values in excess or 20% are generally considered to be anomalous and are more likely the result of oversized fragments within the test section. Given the anticipated geology a design CBR value of 3% is considered more appropriate.
- Care should be taken during the construction process not to damage the integrity of the existing gas membrane

6 FURTHER INVESTIGATION

A Phase II ground investigation is recommended to determine more accurately the effect of the identified hazards on the development. Initially, this should include:

- Hand-excavated pits to expose the existing foundations and confirm the depth to suitable founding strata.
- Further water-soluble sulphate and pH analysis of the soils directly beneath the proposed structure could be considered to target a possible reduction in concrete class.
- Liaison with the Local Authority over the requirement for gas protection measures.

Following your review of this document, a copy of it should be submitted to the Planning Department of the Local Authority for comment and approval prior to any ground investigation works being undertaken, as this is often a condition of planning.

7 CONCLUSIONS

This Phase I Site Appraisal has shown the site is suitable for the proposed development, assuming compliance with all the recommendations contained within this report.

APPENDIX A

GENERAL APPRAISAL COMMENTS

i INFORMATION SOURCES

Where available the following sources have been used for the identification and assessment of potential ground hazards:

- Relevant British Standards
- British Geological Survey (BGS) Geology Map Scale 1:10,000 for local area
- British Geological Survey (BGS) Geology Map Scale 1:50,000/1:63,320
- BGS Memoir
- BGS Borehole Records
- BGS online viewer: http://www.bgs.ac.uk/data/mapViewers/home.html
- Environment Agency Groundwater Vulnerability Maps
- Historical Ordnance Survey (OS) Maps
- Environmental Data Report
- Environment Agency Website: http://www.environment-agency.gov.uk/
- Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UKWIR, 2010.
- Coal Authority Records / Coal Mining Report
- DEFRA/Environment Agency Contaminated Land publications and DoE Industry Profiles
- BRE Guide BR211 (2015), 'Radon: Guidance on protective measures for new buildings'
- HPA-RPD-033 (2007), 'Indicative Atlas of Radon in England and Wales'
- PHE-CRCE-032 (PHE, 2017), Radon in Homes in England: 2016 Data Report
- CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings'
- BS8485:2015, 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'
- Other technical references used throughout this document are detailed in the text.

ii CONTAMINANTS OF CONCERN

The DoE Industry Profiles are normally used to assess likely contaminants from past land use and potential nearby industrial sources. For land uses where no profile is available, likely contaminants of concern are selected by GRM based on past experience of similar sites, a general screening suite of contaminants covered by CLEA and common contaminants from the Industry Profiles.

- Arsenic
- Cadmium
- Chromium
- Lead
- Mercury
- Selenium
- Copper
- Nickel
- Zinc
- Phenols
- cyanide (total)
- pH
- Water soluble sulphate
- PAH (polycyclic aromatic hydrocarbons)

Asbestos and PCBs are listed in the vast majority of profiles. PCBs are listed as the profiles expect electricity substations and switch boxes on all industrial sites. There is the potential for asbestos containing material to be mixed up with made ground, following any demolition works.

iii CONCEPTUAL MODEL METHODOLOGY

The consideration of contamination is based upon the principles of risk assessment, using the 'source-pathway-receptor' model in order to establish the presence, or potential presence, of a pollutant linkage.

To create a risk, contamination must have the potential to cause harm to susceptible targets or receptors such as humans, the water environment or the built environment. The potential for harm to occur requires three conditions to be satisfied to form a pollutant linkage:

- The presence of substances that may cause harm (SOURCE).
- The presence of a target which may be harmed (RECEPTOR).
- The existence of a plausible migration route between the source and the receptor (PATHWAY).

In the absence of a plausible pollutant linkage there is no risk. Where a potential linkage is identified in order for it not to pose a risk to the identified receptor it must be broken.

iv INTRUSIVE INVESTIGATION SAMPLING METHODOLOGY

The ground investigation (including fieldwork, sampling, monitoring and laboratory analyses) has been designed to identify and assess potential ground related problems and to allow cost effective solutions to be advised. It has been planned on the basis of the desk study, site inspection and the proposed development layout (where available). All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned and advanced to depths to determine the general ground/groundwater/gas conditions below the site. A general grid pattern has been adopted, where possible, to provide sufficient information based on the current proposed layout scheme. Some holes have been targeted at particular hazards identified in the Phase I assessment. The resultant exploratory hole density is considered to be commensurate with the complexity of the site conditions and detail of information required for this phase of the investigation.

v GROUND GAS RISK ASSESSMENT METHODOLOGY

Gas monitoring programmes undertaken by GRM are designed to broadly comply with the recommendations outlined in CIRIA Report C665 'Assessing risks posed by hazardous ground gas to buildings' (2007) and BS8576 'Guidance on Investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs) (2013).

To assess the risks posed by ground gases such as radon, carbon dioxide and methane, the relevant current guidance has been used. For radon the site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings (BR211: 2015)'. For methane and carbon dioxide the primary guidance document used to determine if protection measures are required is *BS8485:2015 Code of practice for the design of protective measures from methane and carbon dioxide ground gases for new buildings*. This uses hazardous gas flow rates (Q_{hg}), which are gas concentrations multiplied by borehole flow rates, to derive a Gas Flow Rate (GSV) for the site. The gas regime is then determined based on the GSV and other limiting factors such as gas concentrations.

Where flow is not recorded during the monitoring a default flow rate of 0.1l/hr will be used in the assessment to produce a positive result.

vi HUMAN HEALTH RISK ASSESSMENT METHODOLOGY

Guidance contained in the Environment Agency's CLEA Reports has been used to assess the risks posed to human health.

For residential developments that include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land with plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered including the consumption of home-grown vegetables.

For residential developments that do not include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land without plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered except the consumption of home-grown vegetables. For commercial/industrial developments the default Tier 1 Assessment Criteria (TAC) for 'commercial/industrial' are used, i.e. a female with a start age class of sixteen and an end age class of eighteen. All pathways are considered except the consumption of home-grown vegetables.

The TAC used by GRM include Category 4 Screening Levels (C4SLs) published by DEFRA, values calculated by GRM using the CLEA v1.071 risk assessment, and values and Suitable for Use Levels (S4UL) developed by LQM/CIEH. The TAC used in the assessment are selected based on the lowest site specific SOM values returned as part of the chemical analysis.

Where soil chemical analysis results are found to exceed the TAC, Site-Specific Risk Assessments may be undertaken using the CLEA v1.071 risk assessment software using the age classes and pathways described above.

vii RISK TO SITE WORKERS – GENERAL COMMENTS

The risks to site workers are similar to those posed to site end users, although likely to be less severe due to the site workers' shorter exposure to the identified contamination. However, site workers (particularly groundworkers) are more likely to come into direct contact with contaminated soils due to the nature of their work. On this basis ground and construction workers should be provided with basic Personal Protective Equipment based on the site's general health and safety risk assessment, but including as a minimum safety footwear, gloves and overalls.

A site specific risk assessment should be carried out for all hazards identified within the ground investigation in accordance with current health and safety legislation. This assessment should identify any measures required to further reduce risks i.e. providing further Personal Protective Equipment, welfare facilities and if necessary preventing access to certain areas.

Demolition and dismantling of existing structures on the site must be carried out to a safe and acceptable standard, in accordance with current UK guidance and best practice. Whilst not ground related, asbestos and hazardous substances surveys should be conducted prior to any demolition.

Any unusual colours, odours and suspicious ground should be reported immediately to site management and then GRM.

Whilst this appraisal has considered the long-term effects of contamination, GRM can also help during the formulation of Health and Safety documentation, if required.

viii CONTROLLED WATERS RISK ASSESSMENT METHODOLOGY

Where the desk study and fieldwork do not reveal a potential source of contamination no leachate or groundwater testing will be performed. Where a potential source is identified the testing will comprise leachate testing on the material considered most likely to pose a risk, groundwater testing will be undertaken if water is present at shallow depth.

The UK Drinking Water Standards (UKDWS) or Environmental Quality Standards (EQS) are usually adopted for comparison with the leachate/groundwater test results. When the most sensitive receptor is considered to be the aquifer (groundwater) UKDWS will be adopted as the Initial Tier 1 screening values. Where the most sensitive receptor is a surface water feature the EQS values will be used as Initial Tier I Screening values.

ix CONSTRUCTION MATERIALS RISK ASSESSMENT METHODOLOGY

The 'screening levels' adopted for the assessment of risk to construction materials are taken from the following documents:

- UK Water Industry Research (UKWIR) Contamination thresholds for sub-surface water pipes, for the protection of buried pipes.
- Building Research Establishment (BRE) Special Digest SD1 (2005), 'Concrete in Aggressive Ground', for the protection of buried concrete.

x WASTE DISPOSAL, SITE WASTE MANAGEMENT PLANS AND MATERIAL MANAGEMENT PLANS

Under current Waste Management Regulations, waste soil materials produced from the site will require characterisation to enable it to be disposed of correctly.

The chemical analysis results included in this report should be provided to the relevant landfill operators to establish the characterisation of the waste, confirm its suitability for landfill disposal and provide estimated costings. If material is classified as hazardous, then the site will need to be registered with the Environment Agency prior to the movement of the waste. Depending on the receiving landfill's current permit, further chemical analysis, incorporating Waste Acceptance Criteria (WAC) leachate analysis, may be required.

All materials removed from the site will be classified as 'waste' and therefore must be removed by a suitably licensed carrier of waste. This applies whether or not the waste is contaminated. All waste removed to landfill will attract Landfill Tax.

The developer/builder is likely to be classed as the waste producer and therefore, has a duty of care to ensure that all waste is disposed of appropriately. This includes ensuring the waste carrier is licensed and disposes of the waste to a suitably licensed landfill site. They are also required to keep a paper trail from 'cradle to grave' including copies of the waste disposal tickets.

Efficient materials management on site is recommended as it can lead to significant cost savings when compared to the traditional side casting or single stockpile of arisings. GRM can assist in the production of Material Management Plans under the CL:AIRE Definition of Waste: Code of Practice. The DoWCoP enables:

- The direct transfer and re-use of clean naturally occurring soil materials between sites, and
- The re-use of both contaminated and uncontaminated materials on their site of origin and between sites within defined Cluster projects.

GRM can also undertake the role of Qualified Person and submit the DoW CoP project Declaration.

Likewise making the site as volume neutral as possible will reduce the costs of development. Whilst not a statutory requirement, Site Waste Management Plans allow better waste management practices, help to reduce the amount of waste produced and identify best environmental disposal options. Implementing a Site Waste Management Plan (SWMP) can reduce costs (increasing business profits) and maximise resource efficiency.

xi GEOTECHNICAL ASSESSMENT GENERAL COMMENTS

Where finished floor levels of proposed structures have not been provided by the Client, then for the purposes of initial assessment, GRM will assume that finished levels will not vary appreciably from the existing ground levels. If the depths of any underground engineering works (i.e. sewers, pumping stations

etc.) are unknown they will not be taken in to account in the assessment and it will be assumed that any such works will not compromise foundation or ground stability.

Should the development proposals or finished levels be different from these assumptions then the comments/recommendations in the Geotechnical Assessment may require revising.

It should be noted that the results of window sampling and/or cable percussive boreholes may not give a true indication of a soils actual engineering properties (i.e. stability, mass structure etc). GRM consider that that prior to development trial pitting should be undertaken to confirm the recommendations in the Geotechnical Assessment.

xii GEOTECHNICAL ASSESSMENT – ENGINEERING GROUND TREATMENT

Near surface soils have the potential to be disturbed by weathering and site traffic. Precautions should always be taken to avoid this, as excessive disturbance may leads to more onerous floor slab designs, road cap thickness and increased amounts of off-site disposal etc.

Near surface soils may need treatment or reinforcing to allow safe movement of construction plant and labour. An assessment by the contractor should be undertaken once the type of machinery/plant needed to complete the development is known.

xiii GEOTECHNICAL ASSESSMENT – EXCAVATIONS

Excavation instability (over-break) can result in damage to existing services or structures (e.g. foundations, roads or boundary walls/fences) both on and off-site, as well as increased foundation concrete costs. In order to minimise this, all excavations deeper than 1.2m deep (or any excavation within 1.5m of any existing structure or service) should be supported. Full support should be provided to the full depth of all near vertically sided excavations in made ground, soft and very soft clays and granular soils. A reduction to intermediate support should be acceptable within firm and stiffer natural clays.

Wherever possible, man entry into excavations should be prevented; however, where this is not possible, entry to, and time spent in, excavations should be kept to a minimum.

The build program should be tailored to reflect the impact that deep excavations through potentially unstable strata can have on adjacent properties, so that they are not undermined.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times. Reference should be made to HSE construction information sheet No. 8 (Revision 1) ‘Safety in Excavations’.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

If contaminated water enters excavations it should be removed and transported to an appropriate treatment facility by a suitably licensed carrier before construction begins.

xiv GEOTECHNICAL ASSESSMENT – SUBSTRUCTURES

Where practicable, existing buried construction should be fully removed; however, if this is not practicable all new foundations should be carried down to fully penetrate it and it should be broken well away from all new structures.

There may be existing structures and/or infrastructure in close proximity to the proposed development. New build foundations may be constructed next to pavements with existing underground services beneath them, or excavations may be required near existing footings associated with adjacent properties. These potential hazards need to be taken into consideration when designing foundations and the groundworker needs to be made aware of their potential impact during the redevelopment works. Foundations close to existing underground services or buildings may require alternative foundation techniques (such as piling) to protect the integrity of these structures.

The contractor for the works should carry them out in such a fashion so as to not cause excessive overbreak, concrete usage or undermine existing buildings/roads/ services that are to be retained.

xv GEOTECHNICAL ASSESSMENT – SOAKAWAYS

Soakaway testing in trial pits by GRM is broadly carried out in accordance with BRE DG 365 (2016). The testing comprises the excavation of a test pit to a suitable depth, and the placement of water into the pit. The level of water present is then monitored over time. For borehole installations, the permeability testing (falling head/rising head) is undertaken in accordance with BS5930.

If it is decided to proceed with the use of soakaway drainage, then the following general points should be noted:

- Soakaways should not be placed so that water can be discharged through potentially contaminated made ground.
- The Environment Agency may require soakaways to be sealed systems such that only roof run off falls to soakaway.
- Interceptors are likely to be required for soakaways for highway drainage. The adopting authority for the highways should be consulted at the earliest opportunity regarding the use of soakaways for highways drainage.
- Consideration of site levels and slopes should be taken into account during the design.
- The construction of all soakaways should be in accordance with the current building regulations.
- Soakaways should not be placed within 5m of a proposed building.
- Placement of soakaways needs to be considered so as to avoid ponding of water down slope.
- The base of a soakaway should not be below the highest recorded water level.
- The Environment Agency prefer 1m of dry soil to be present between the base of a soakaway and the water table to provide attenuation for contamination.

xvi GEOTECHNICAL ASSESSMENT – FOUNDATIONS

If soft or hard spots are encountered during foundation excavation then they should be replaced with suitably compacted material or the footings deepened to suitable strata, to avoid differential settlement.

If strata of differing bearing character (e.g. sand and clay) are encountered at foundation levels within the excavations for a single plot then the excavation depths should be altered as appropriate to ensure the foundations rest on a single stratum, or strata that will not induce differential settlement. Where this is impractical then GRM should be contacted to assess a reinforced concrete detail or an alternative foundation solution (e.g. piles or vibro-replacement).

NOTES ON LIMITATIONS

General

GRM Development Solutions Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement had been executed, or with whom an assignment had been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from GRM Development Solutions Limited; a charge may be levied against such approval.

GRM Development Solutions Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) the consequences of this document being used by any third party with whom an agreement has not been executed.

Phase I Environmental Audits/ Desk Studies

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, GRM Development Solutions Limited reserves the right to review such information and as considered necessary and appropriate to modify the opinions accordingly. It should be noted that any risks identified in a Phase 1 report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits (Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, and controlled waters.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as provisional only and must, in any event, be confirmed by a commercial adviser.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. Whilst exploratory testing is intended to gain an accurate representation of the site, the very nature of sampling and testing is such that it cannot ensure that all localised conditions are detected

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

Phase II Geo-environmental Investigations (Combined Geotechnical and Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environment risks together with engineering and development implications. If costs have been included in relation to site development a commercial adviser must confirm these.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site for each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time the site work was conducted. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

APPENDIX B

1 CC_CC-ZZ-0001_Proposed Site Plan @ 1 to 200
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P01	PW	Issued for Infomation	14/05/21

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Client Name:
Midlands Partnership NHSFT

Site Name:
Redwoods Centre, Somerby Drive, Bicton Heath, Shrewsbury, SY3 8DS

Project Name:
Oak Ward Proposed Seclusion

Drawing Title:
Proposed Site Plan

Project No:	Sheet Size:	Scale:	
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Drawn by:	**Checked by:**	**Approved by:**	**Revision:**
PW	MC	AA	P01
Suitability:			**Status:**
Issued for Information			S2

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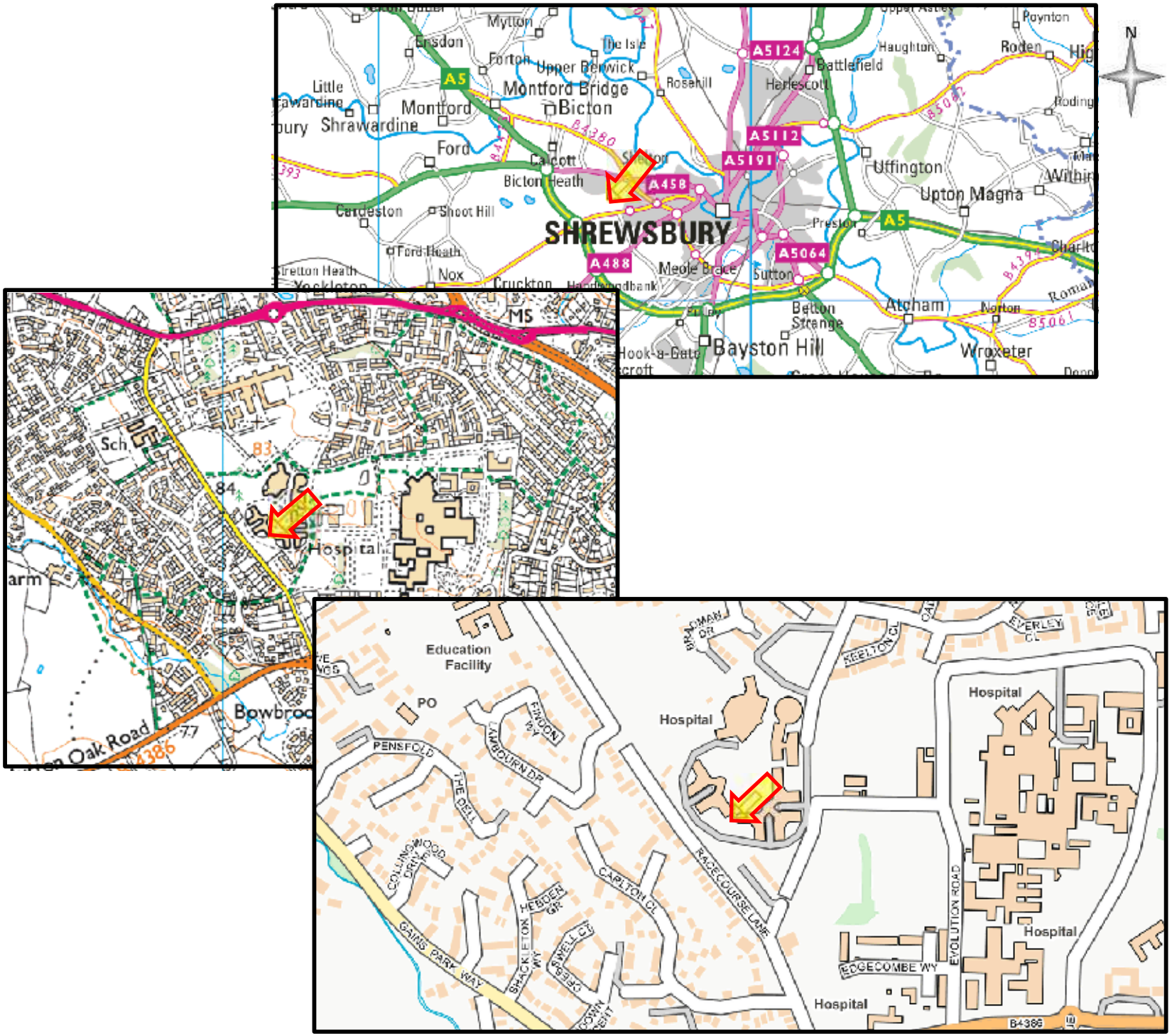
APPENDIX C



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NOTES:

Approximate site location

GRM Development Solutions Ltd
Laurus House, First Ave, Centrum 100,
Burton-on-Trent, Staffordshire
Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:
Alan Johnson Partnership on behalf of South Staffordshire & Shropshire Healthcare NHS Foundation Trust

PROJECT:
Redwoods Centre, Somerby Drive, Shrewsbury

TITLE:
Site Location and Boundary Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
PW	July 2021
PROJECT No:	DRAWING No:
P9761	Fig.1

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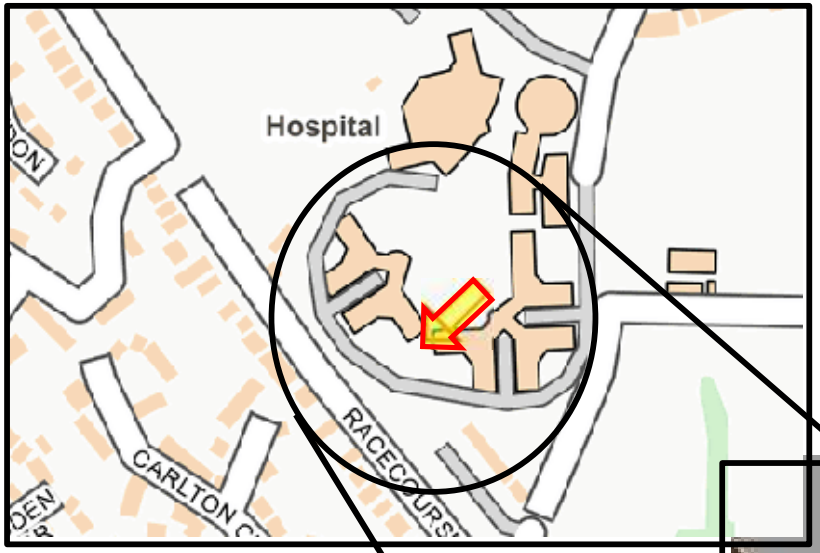

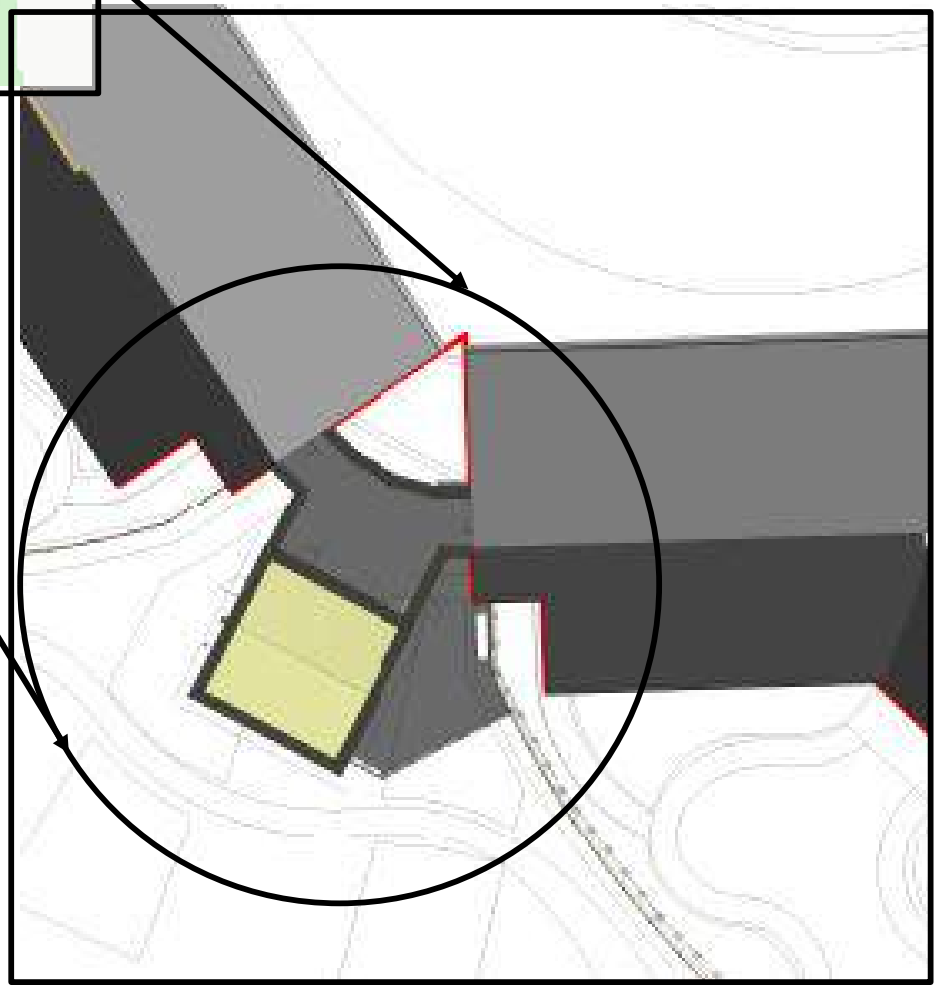

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CLIENT:
Alan Johnson Partnership on behalf of South Staffordshire & Shropshire Healthcare NHS Foundation Trust

PROJECT:
Redwoods Centre, Somerby Drive, Shrewsbury

TITLE:
Site Boundary Plan

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PW	July 2021
PROJECT No:	DRAWING No:
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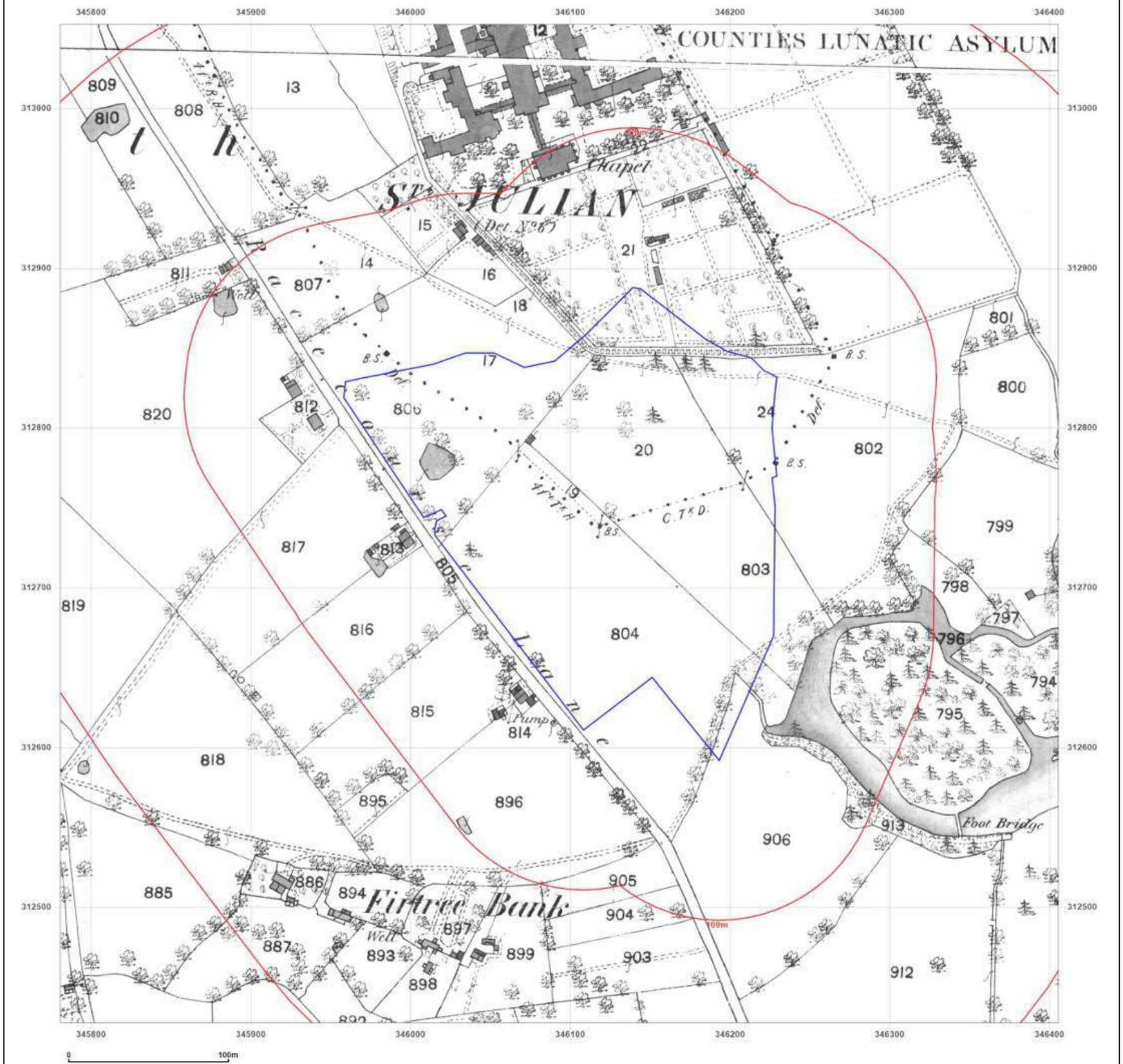
APPENDIX D



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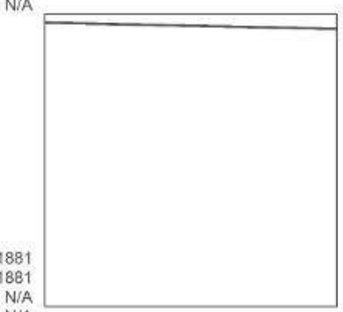

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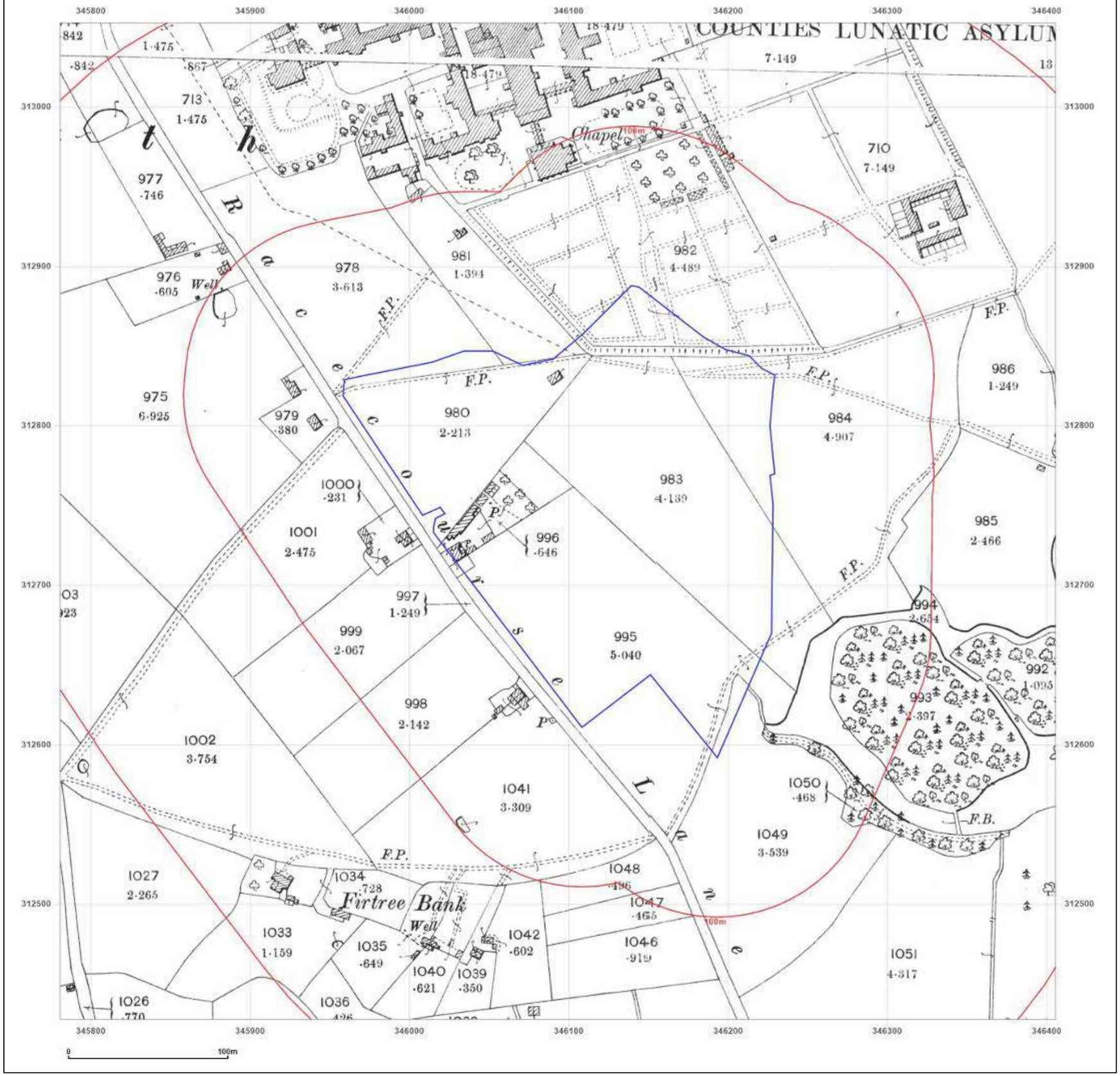

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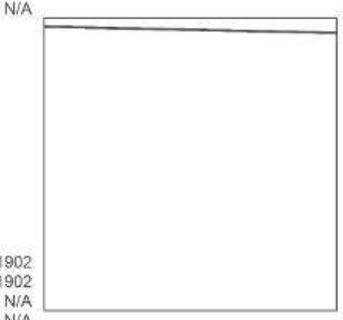

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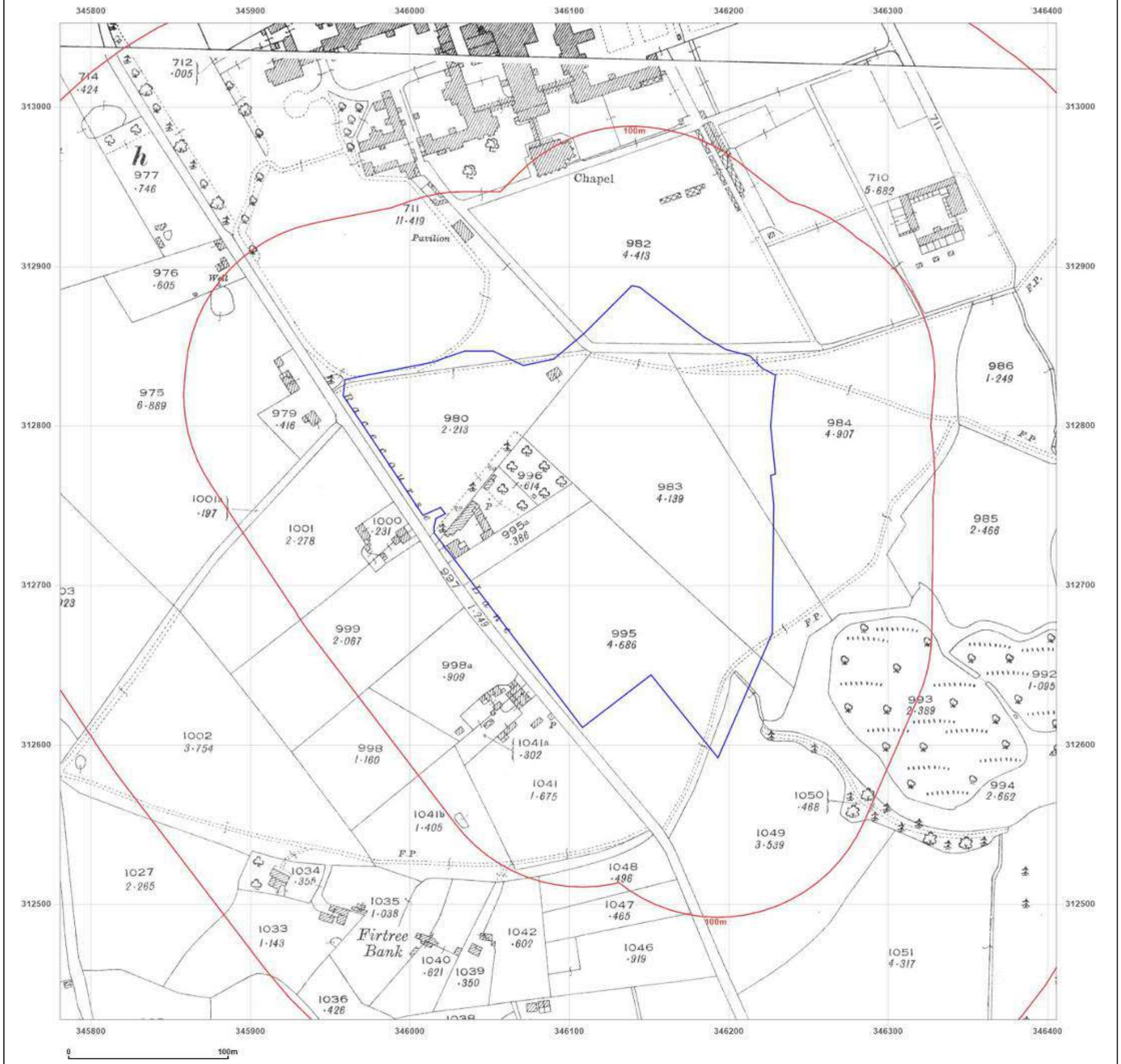

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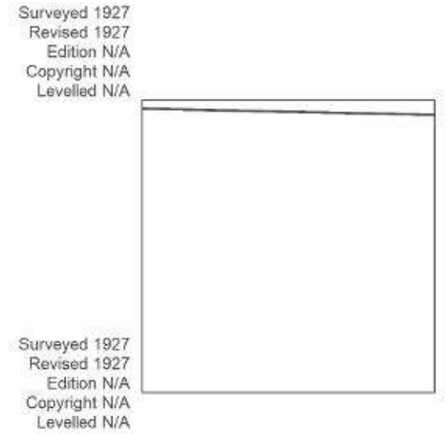

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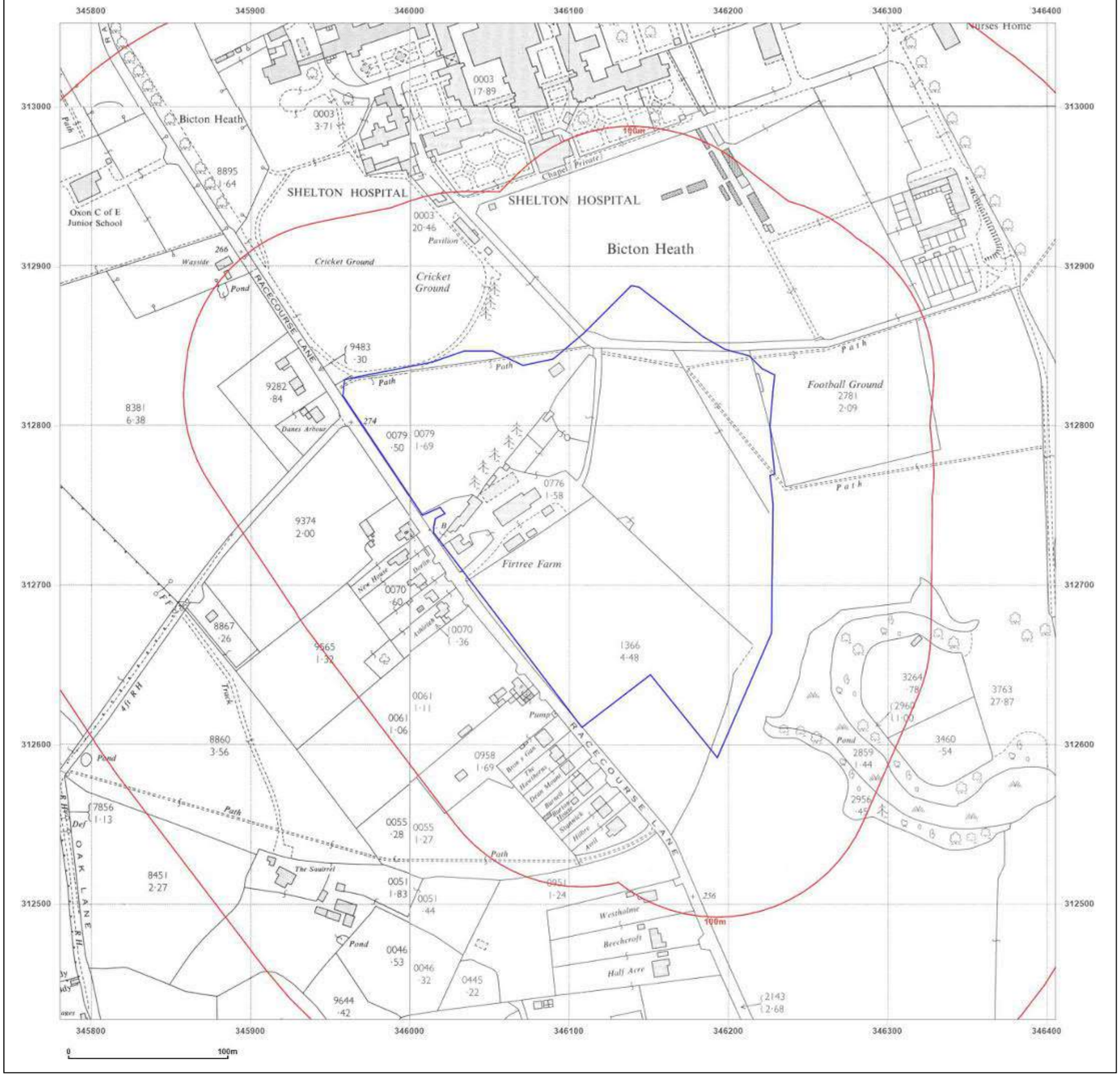

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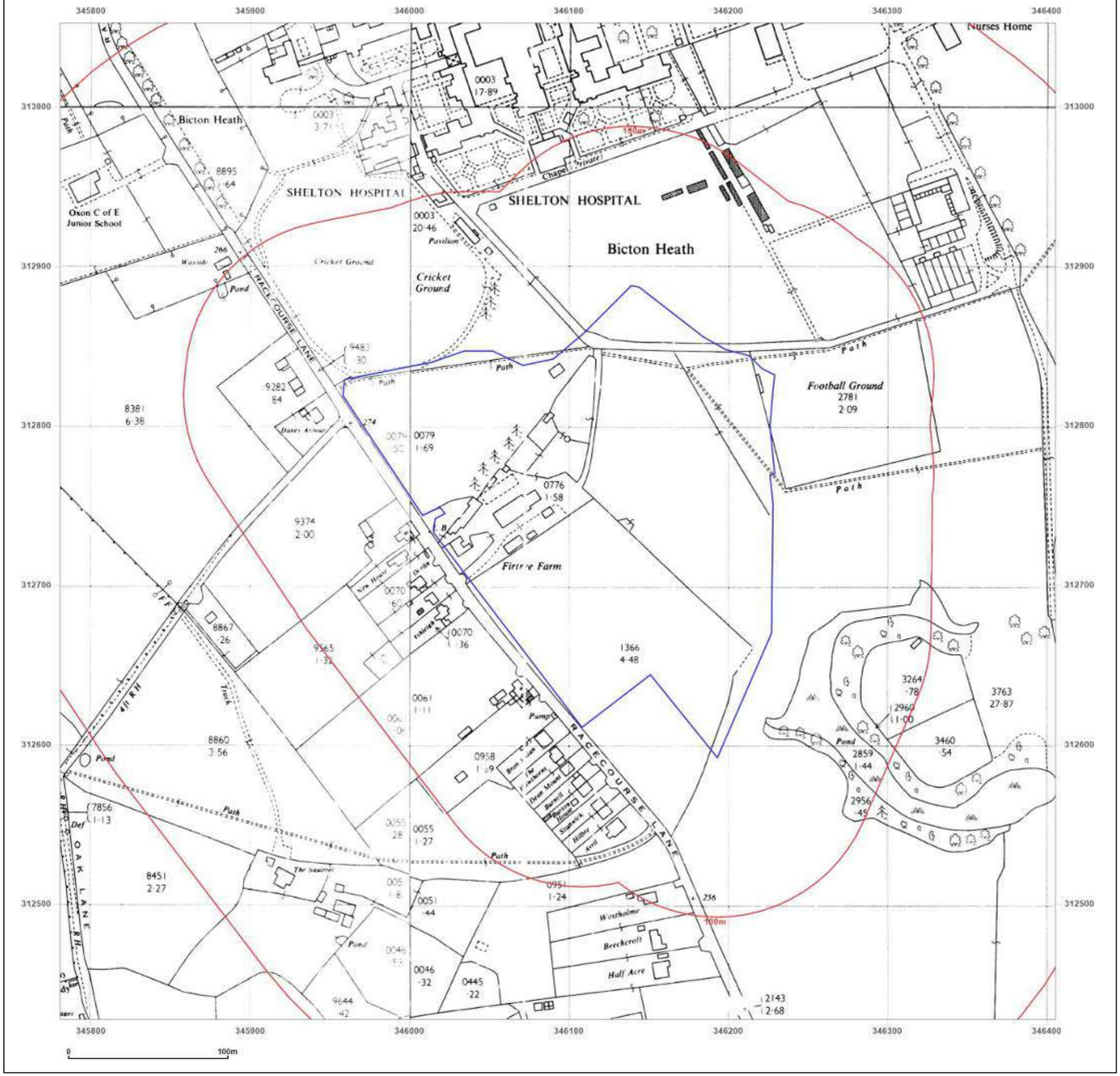

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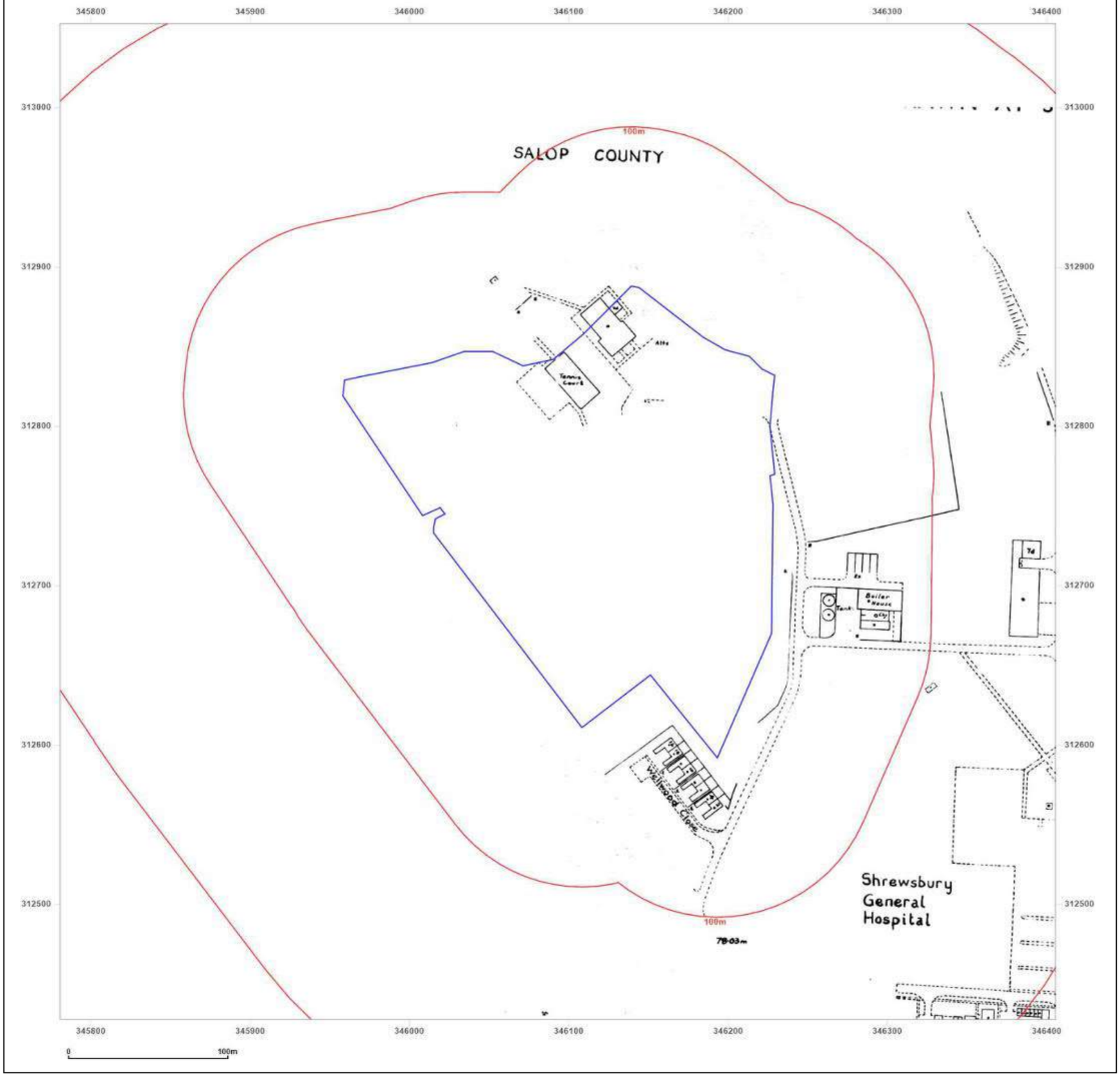

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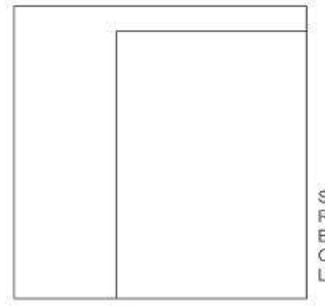

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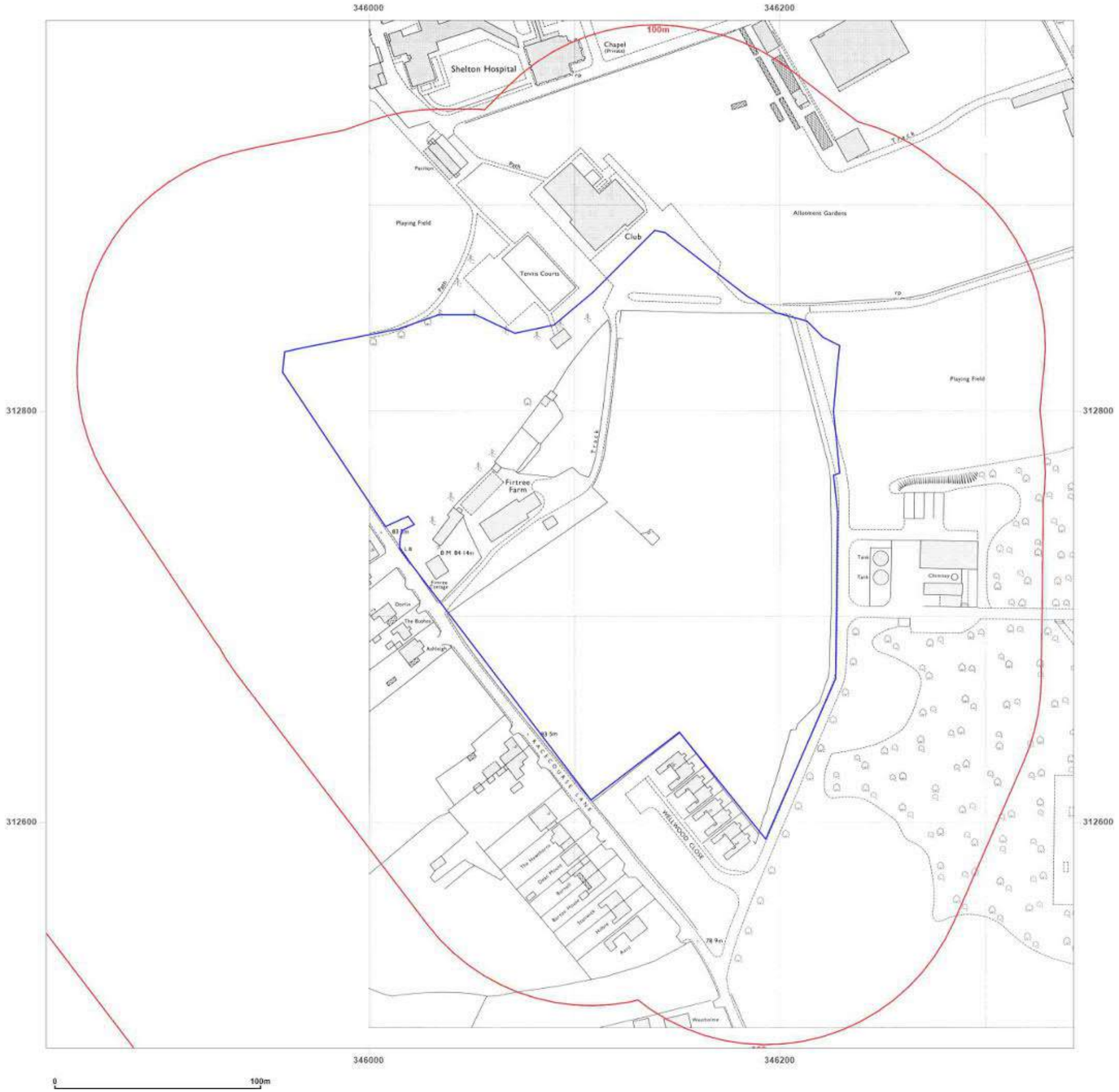

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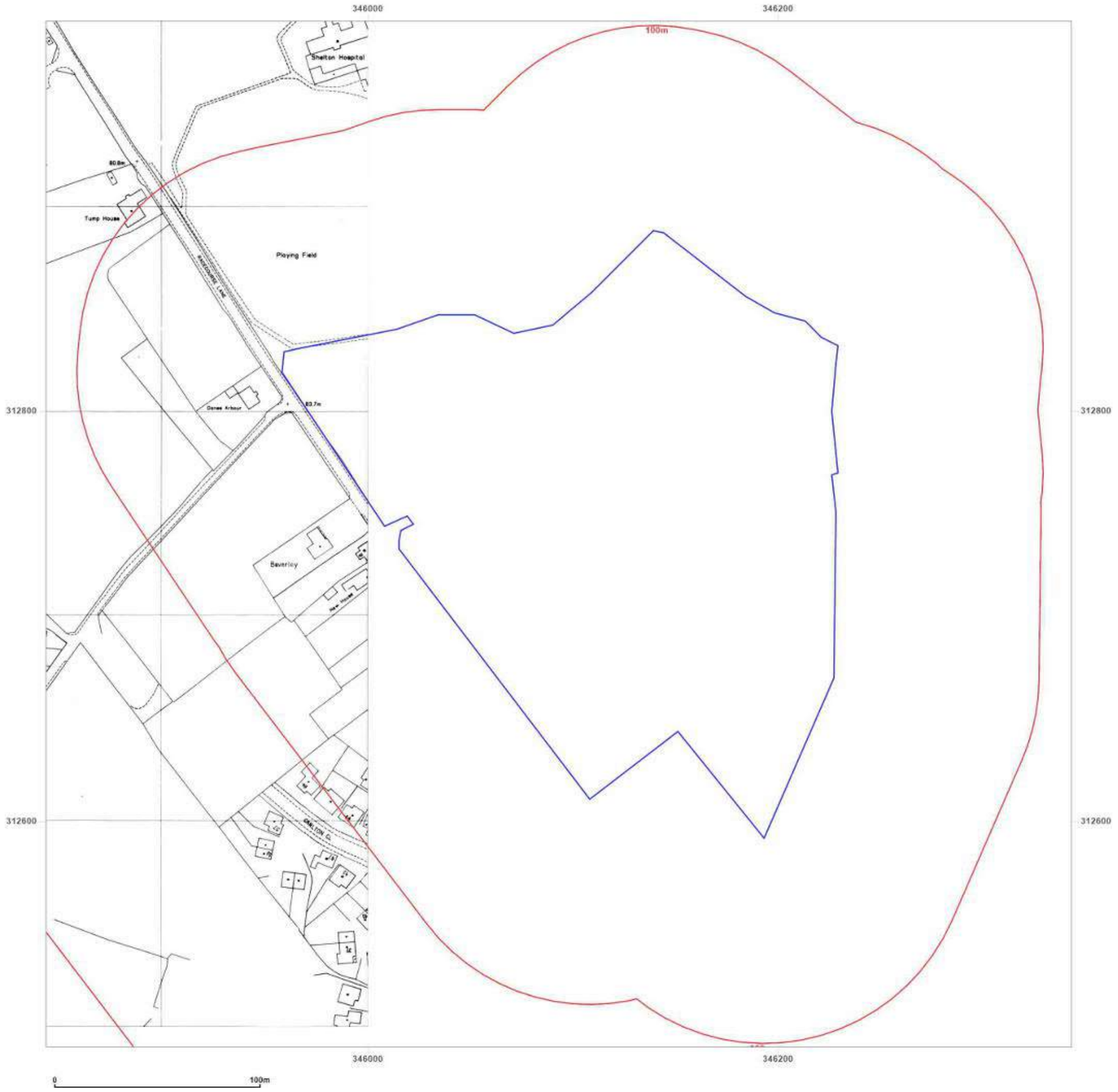

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Site Details:

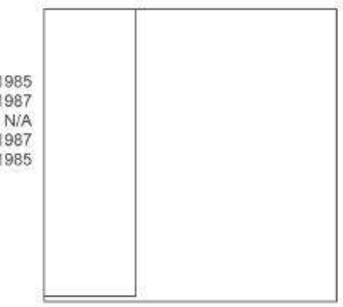
Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid
Map date: **1987**
Scale: 1:1,250
Printed at: 1:2,000

N
W E
S

Surveyed 1985
Revised 1987
Edition N/A
Copyright 1987
Levelled 1985



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Production date: 04 July 2021

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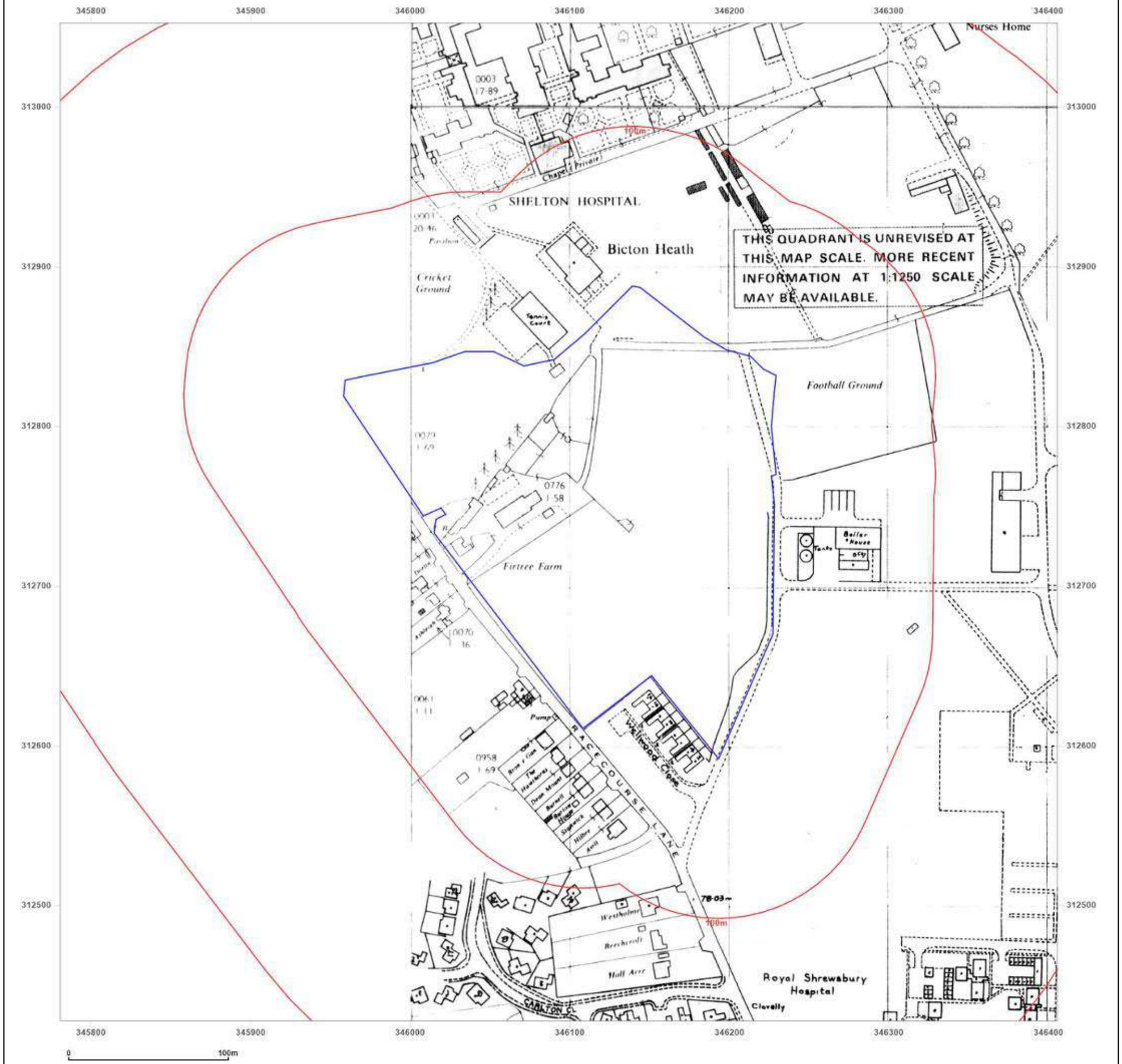

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1988**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1968
Revised 1988
Edition N/A
Copyright 1988
Levelled 1968

Surveyed 1976
Revised 1988
Edition N/A
Copyright 1988
Levelled 1976

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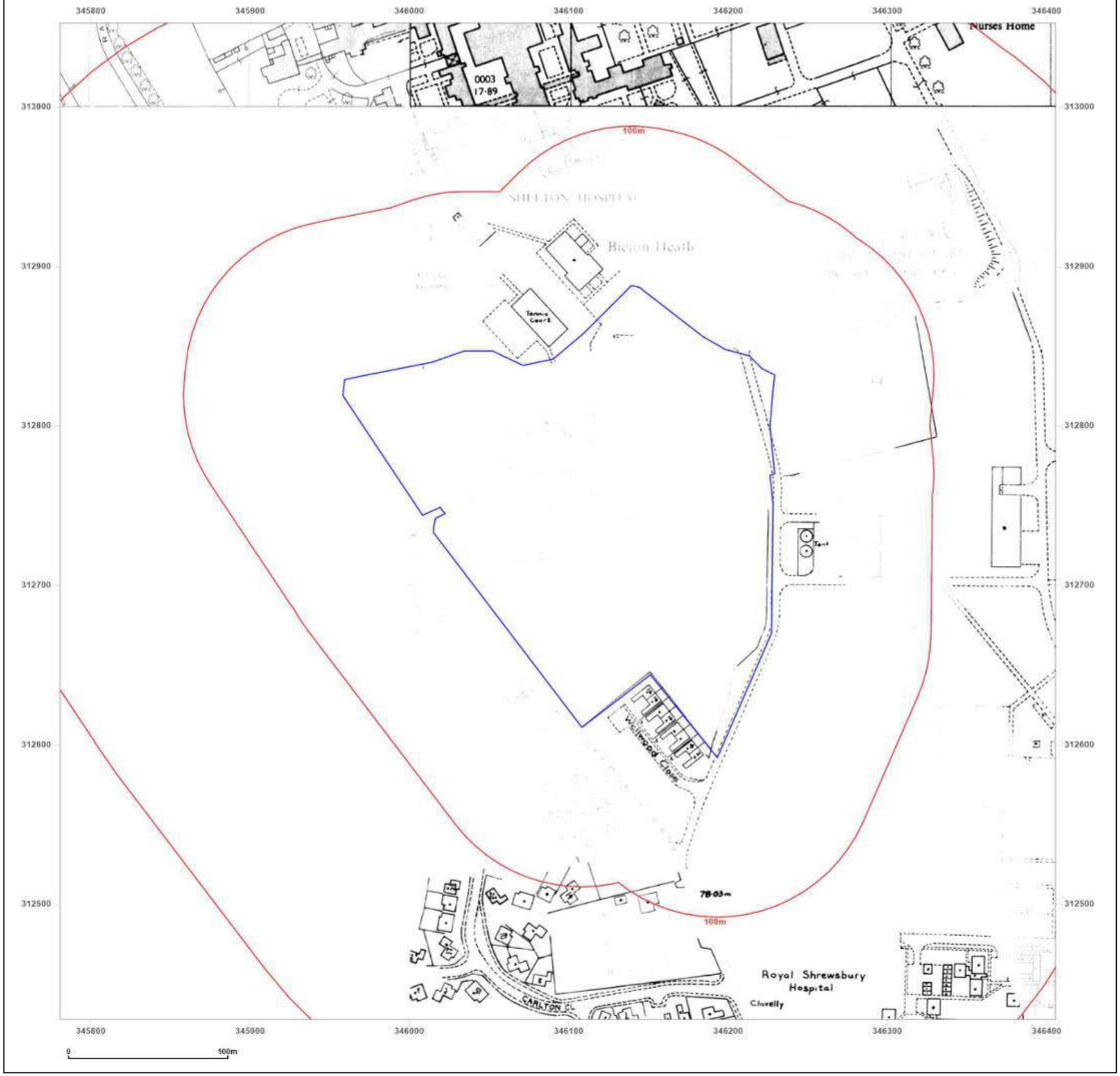

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid
Map date: **1988-1989**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1968
Revised 1989
Edition N/A
Copyright 1989
Levelled 1968

Surveyed 1968
Revised 1988
Edition N/A
Copyright 1988
Levelled 1968

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1988
Levelled 1976

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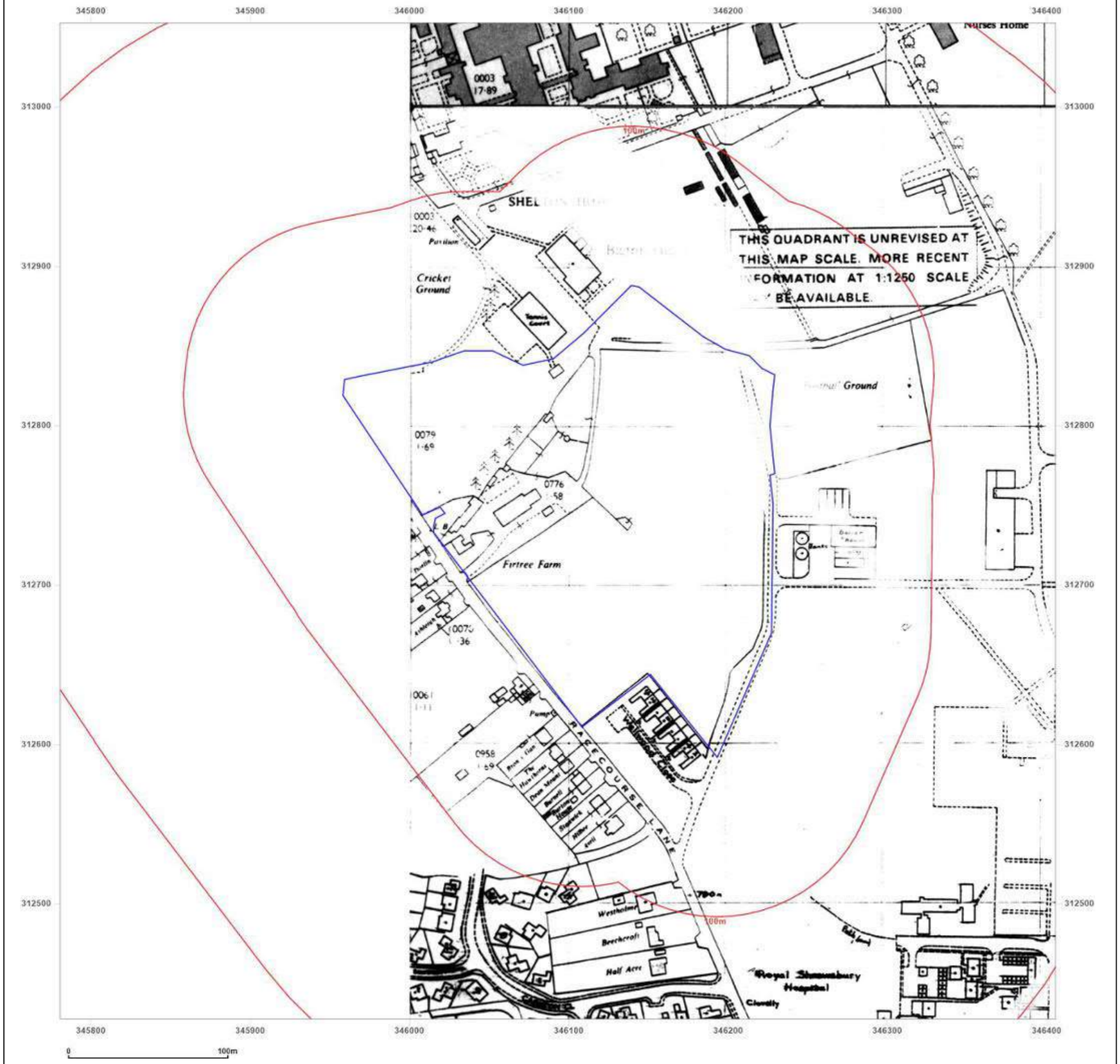

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1988-1989**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1968
Revised 1988
Edition N/A
Copyright 1988
Levelled 1968

Surveyed 1976
Revised 1989
Edition N/A
Copyright 1989
Levelled 1976

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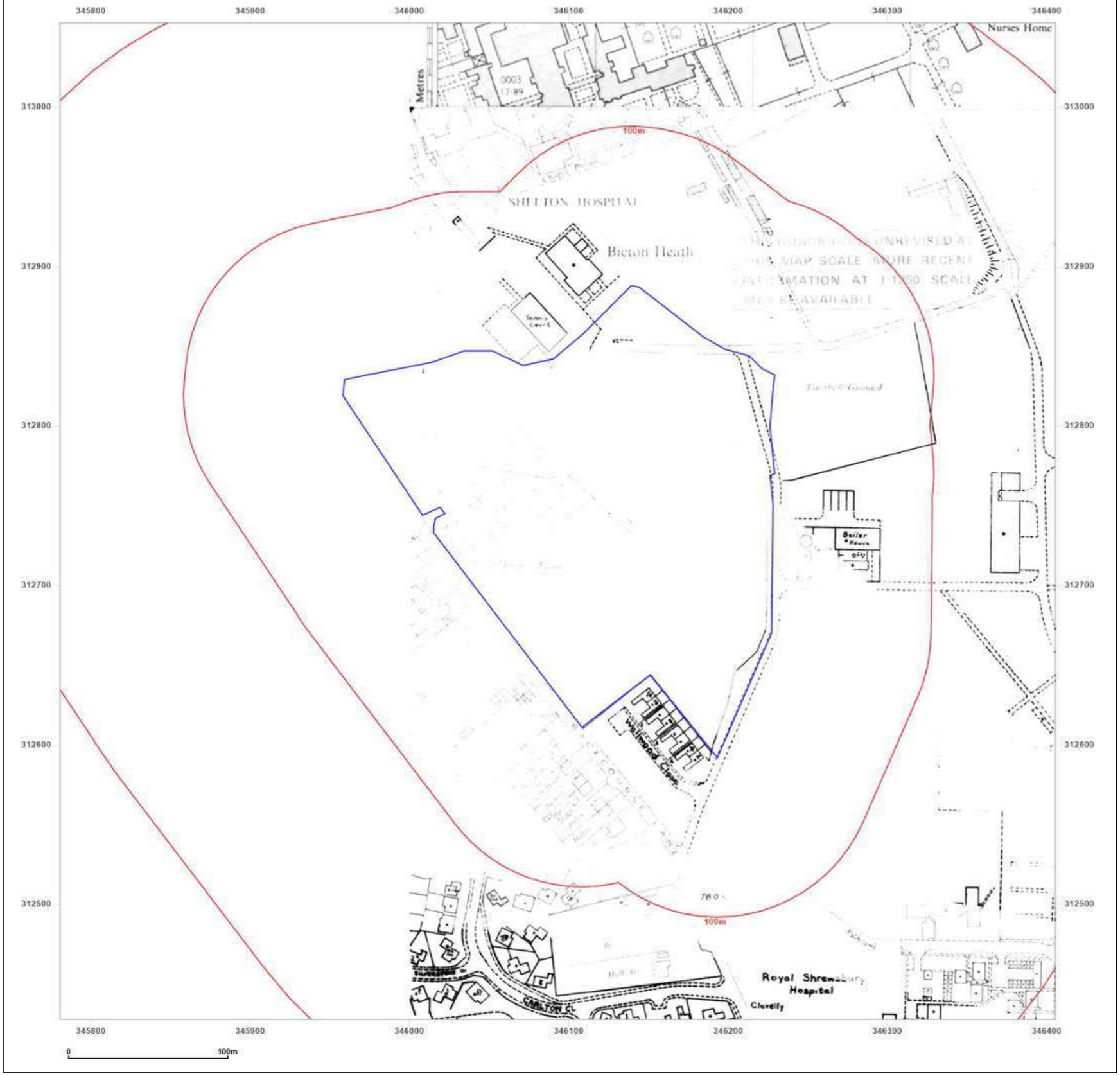

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1989-1990**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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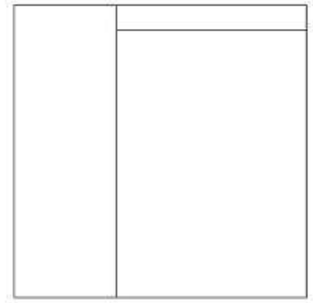
Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1989
Levelled N/A

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1986
Revised 1986
Edition N/A
Copyright 1987
Levelled 1958

Surveyed 1967
Revised 1988
Edition N/A
Copyright 1988
Levelled 1967

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1992
Levelled N/A

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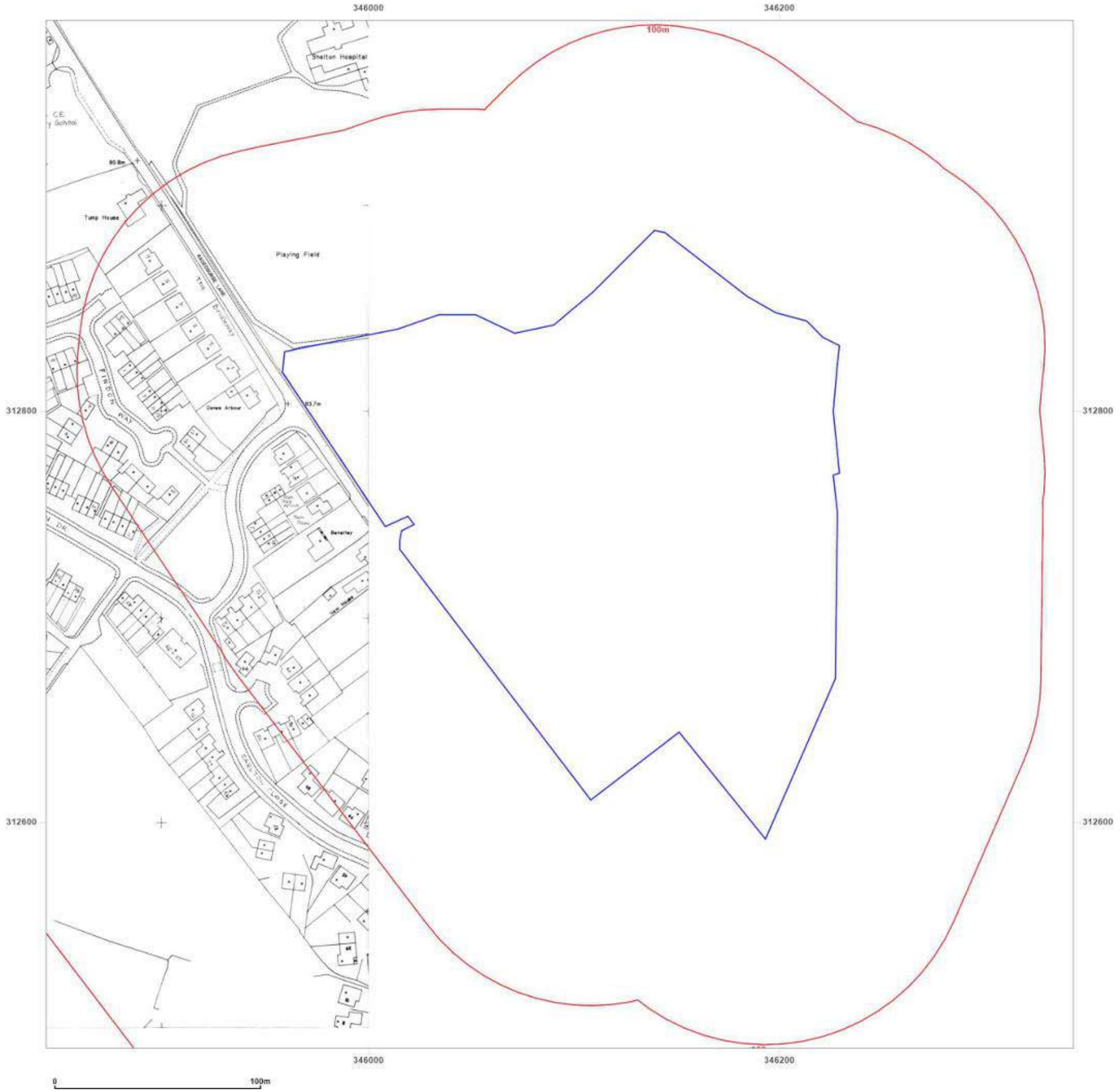

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1993
Revised 1993
Edition N/A
Copyright 1993
Levelled N/A

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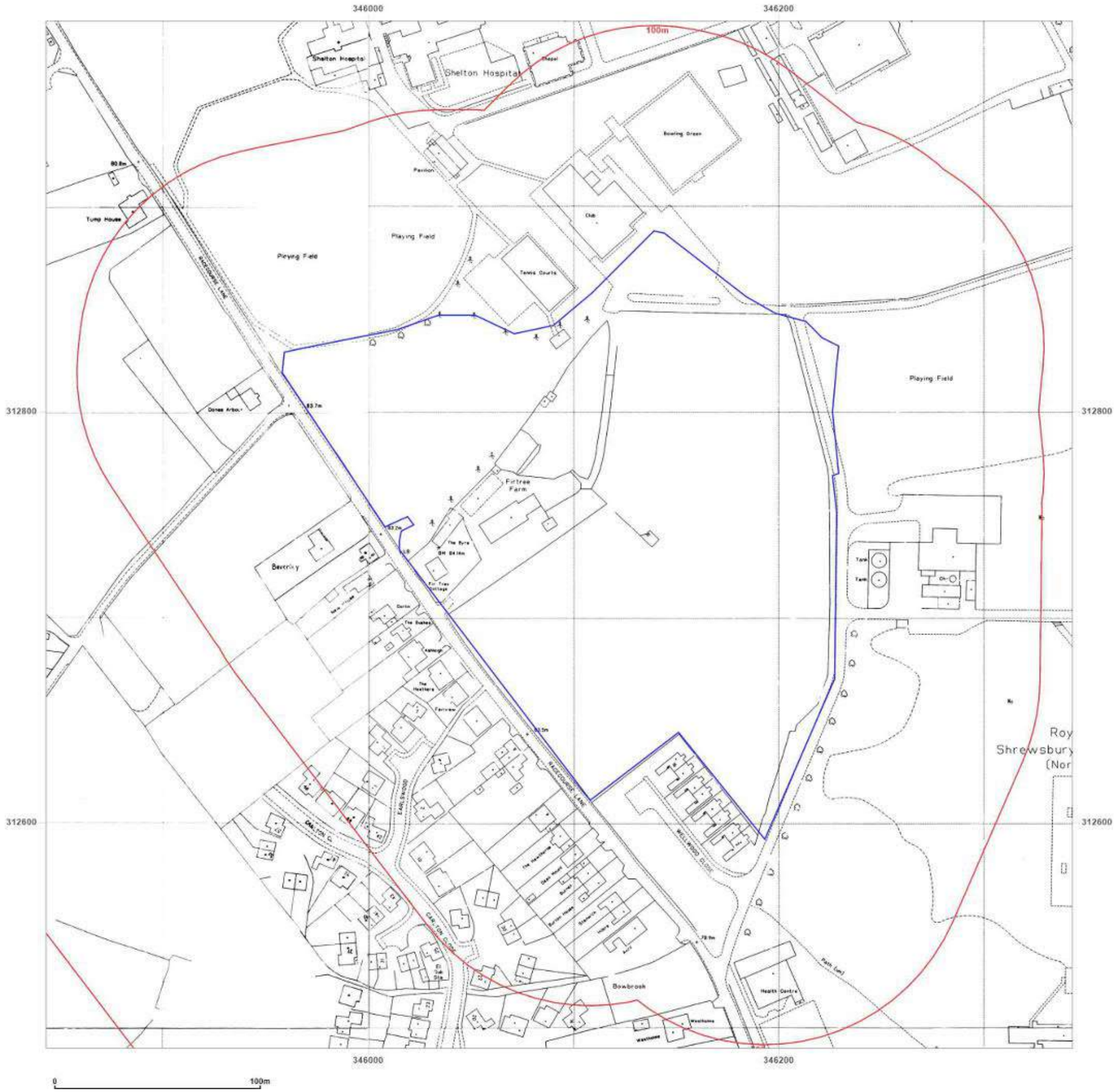

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1989-1994**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1994 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1994 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1994 Levelled N/A

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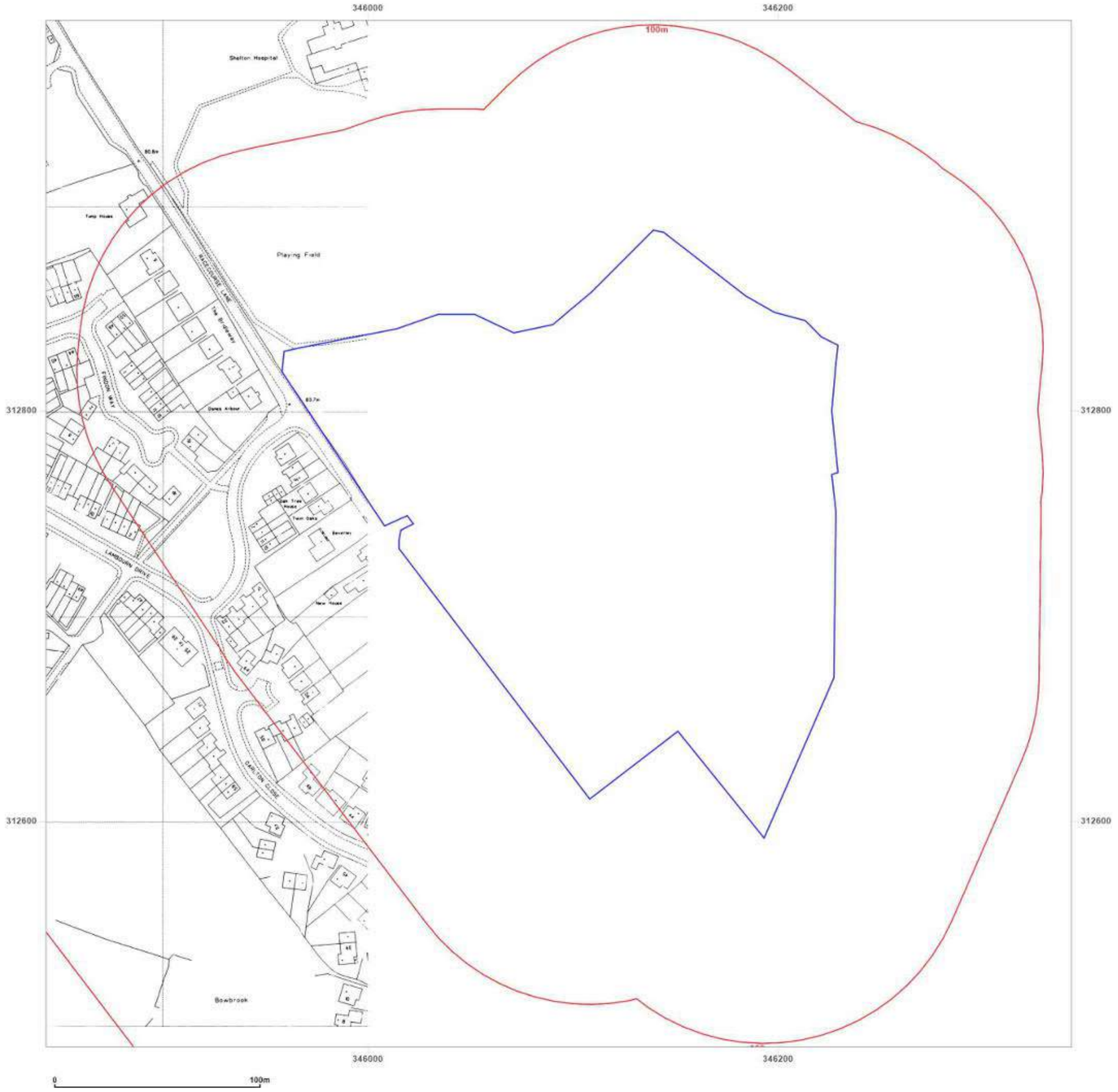

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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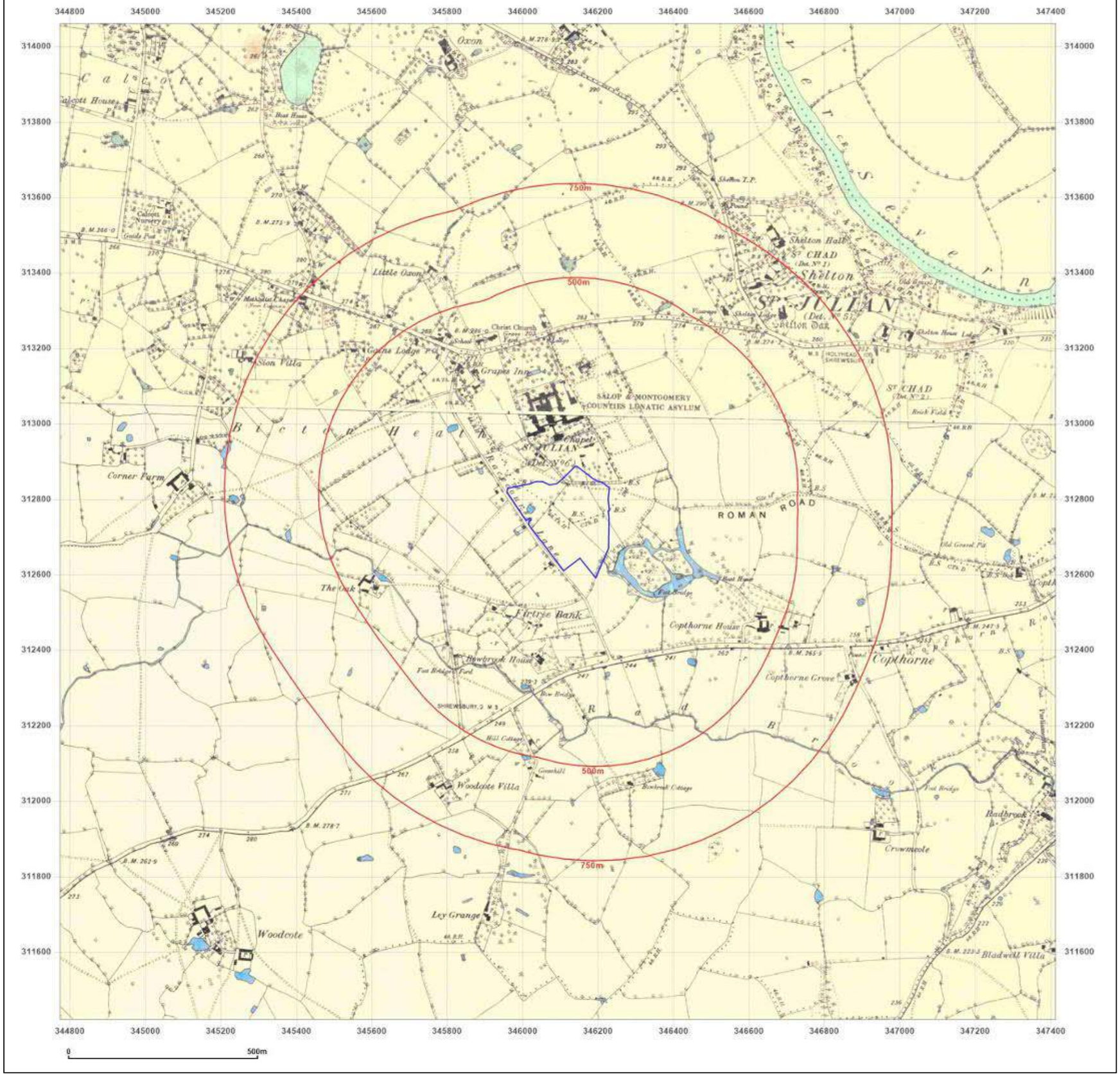

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

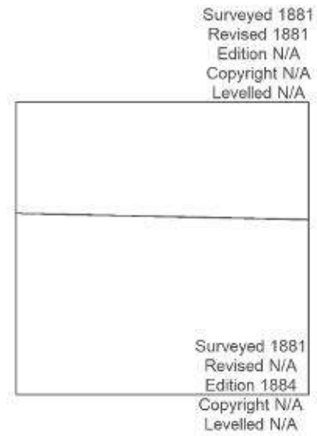
Map Name: County Series

Map date: **1881-1884**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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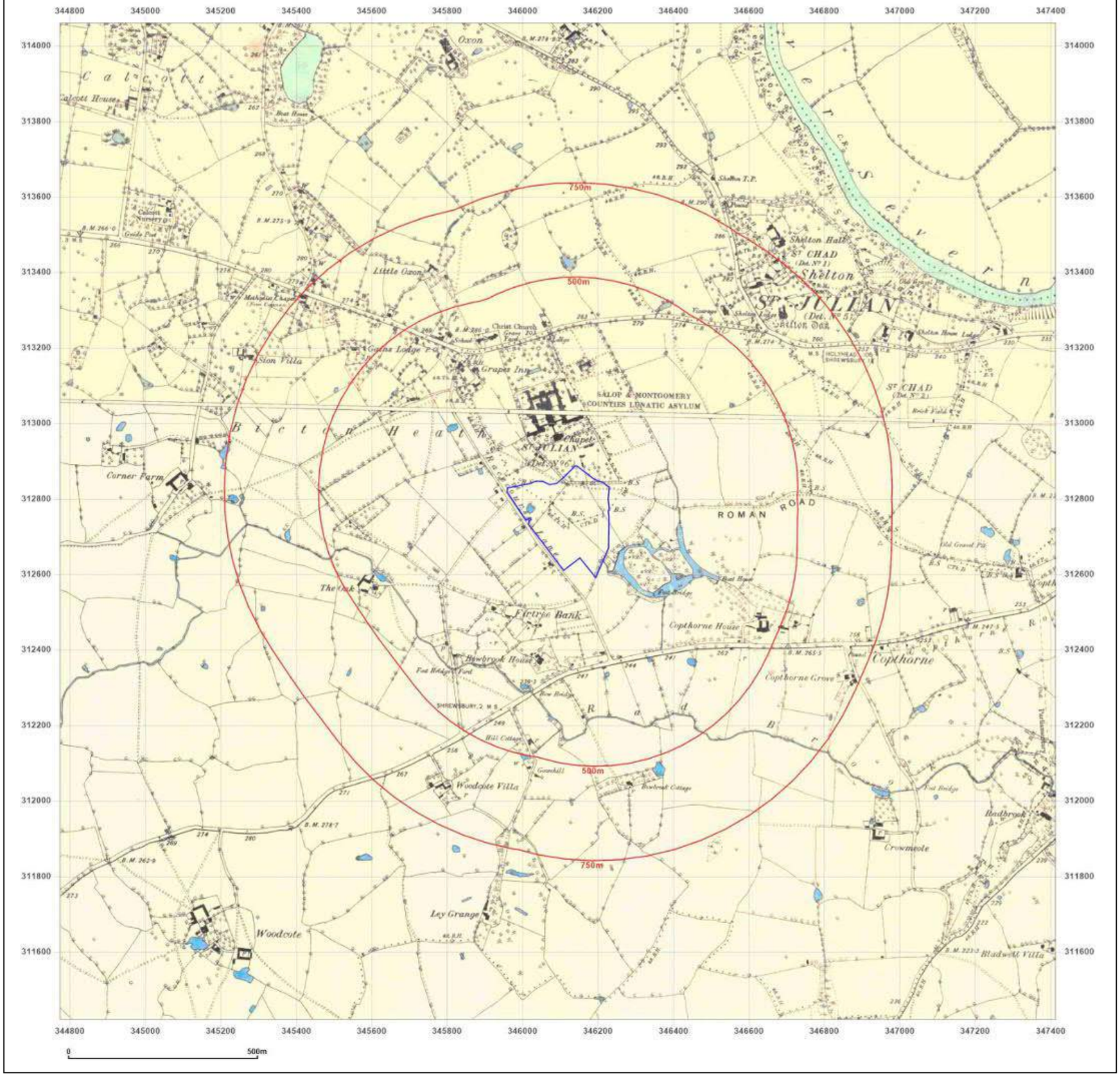

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: County Series

Map date: **1881-1885**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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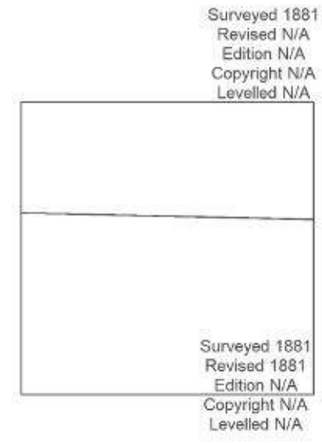

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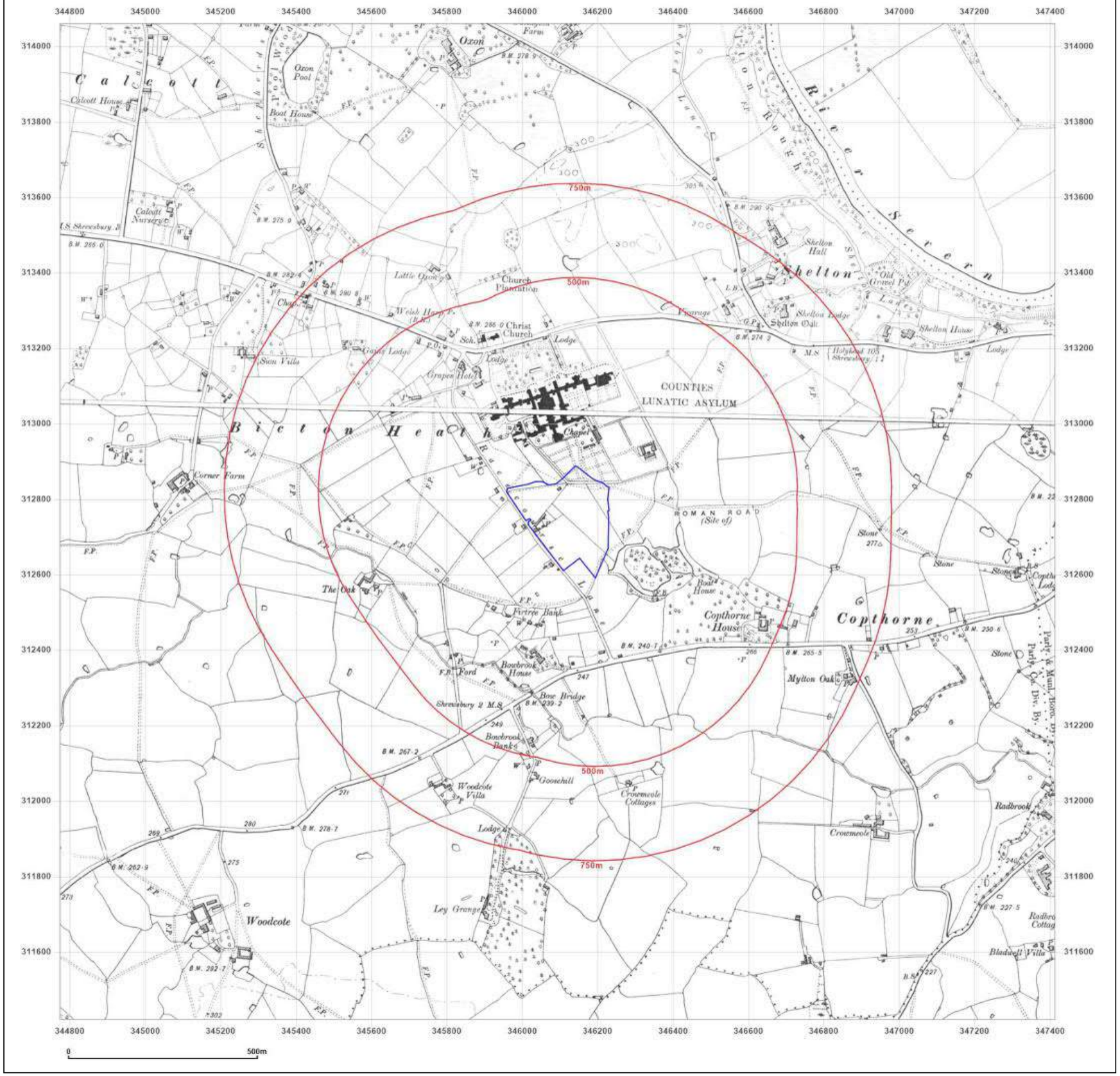

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: County Series

Map date: **1900-1901**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1880
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1901
Edition N/A
Copyright N/A
Levelled N/A

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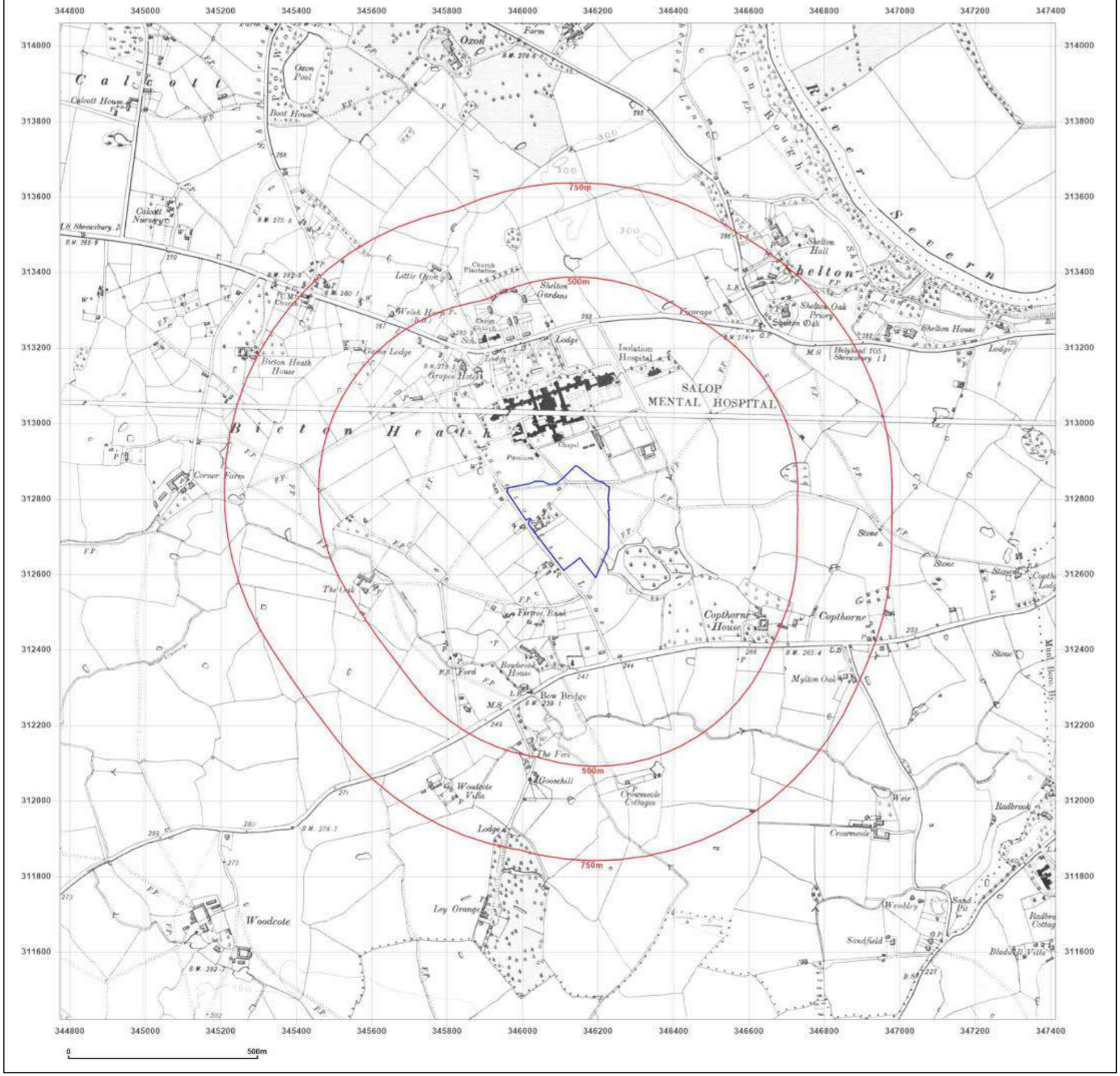

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: County Series

Map date: **1925**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1880
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

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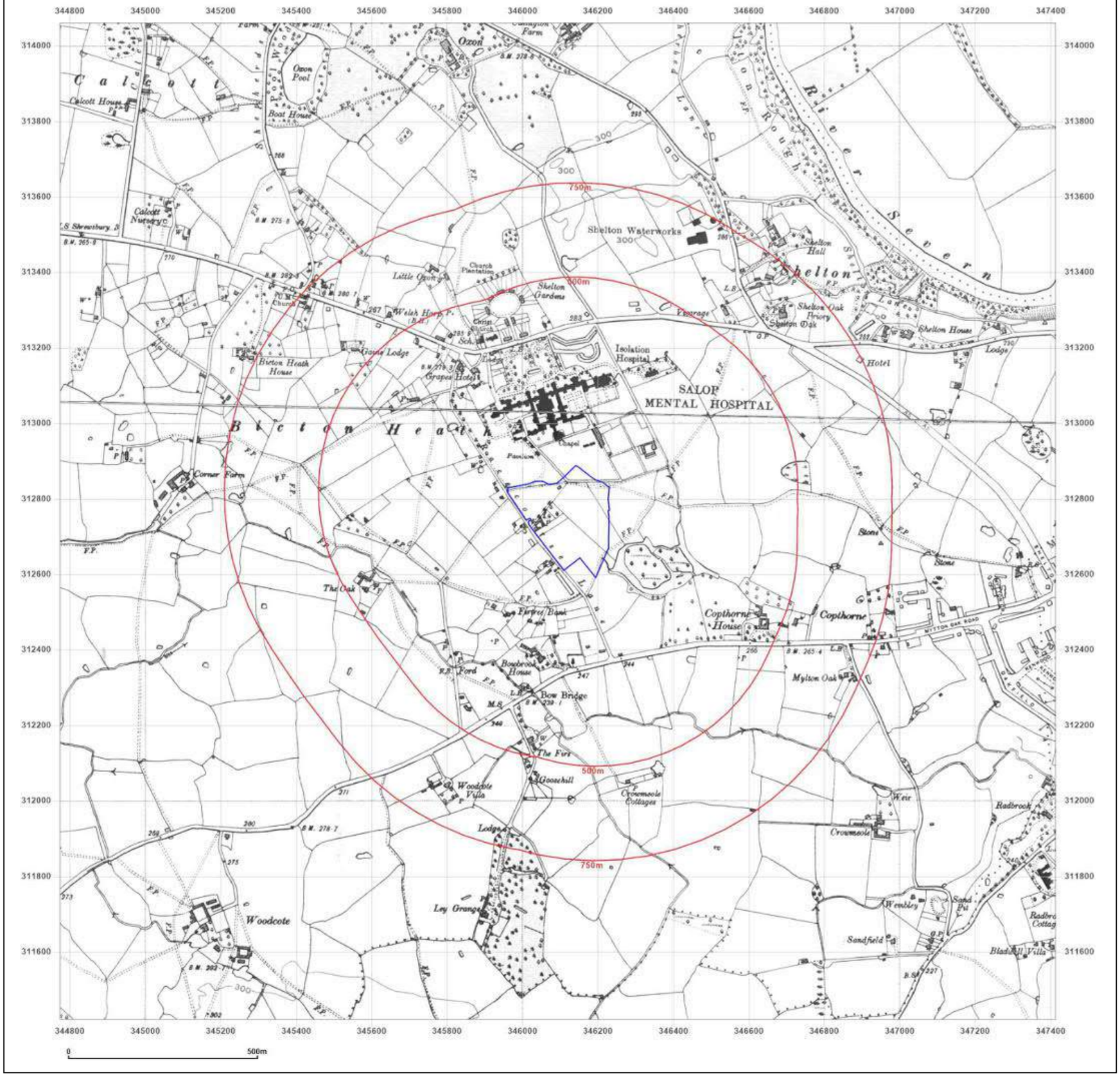

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1880
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

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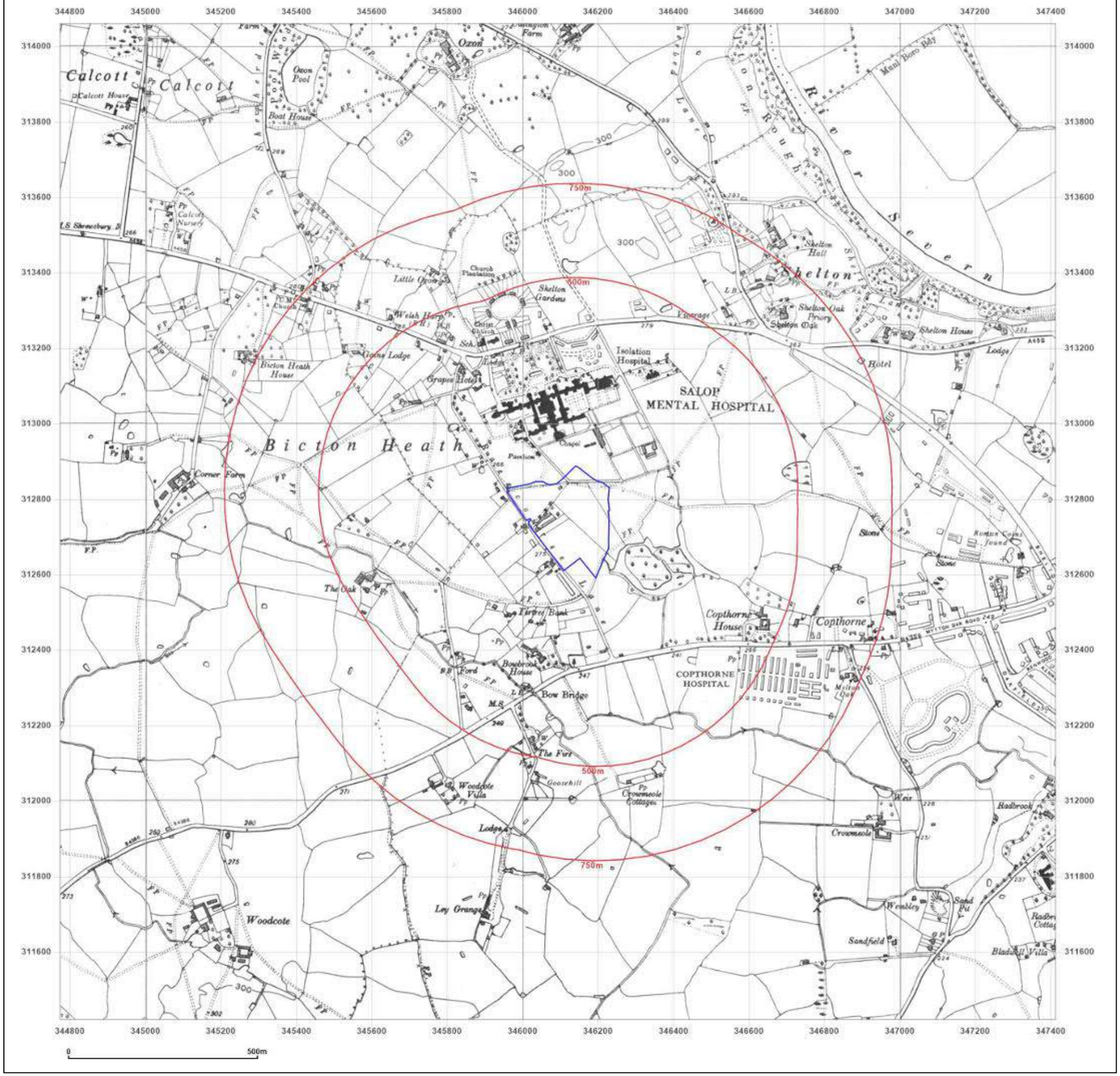

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Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: Provisional
Map date: **1949-1954**
Scale: 1:10,560
Printed at: 1:10,560

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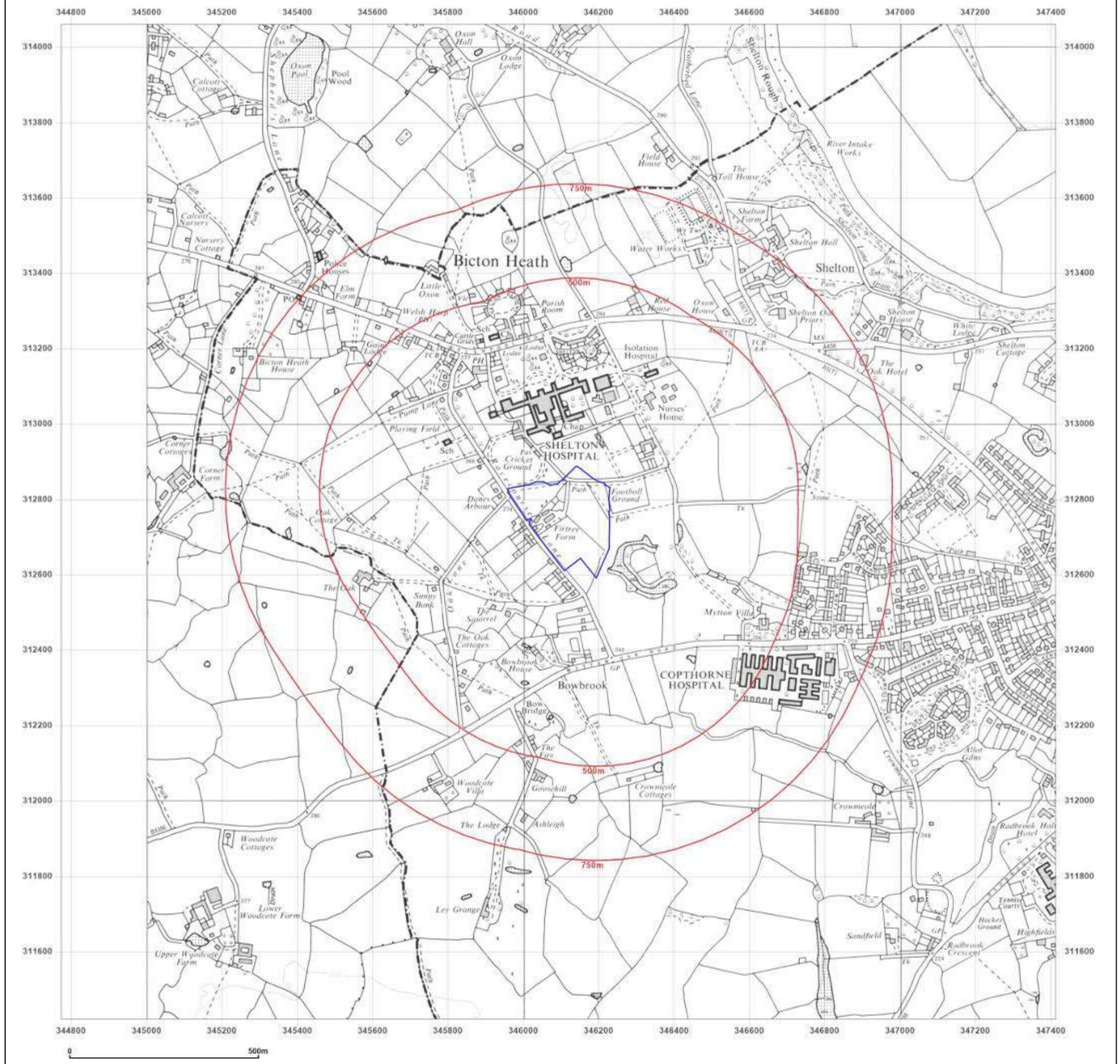

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: Provisional

Map date: **1969**

Scale: 1:10,560

Printed at: 1:10,560

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W E
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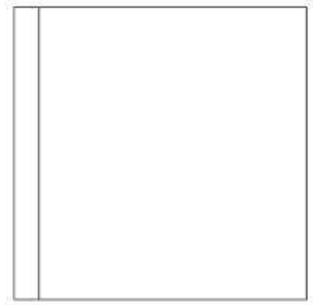

Surveyed 1969
Revised 1969
Edition N/A
Copyright N/A
Levelled N/A

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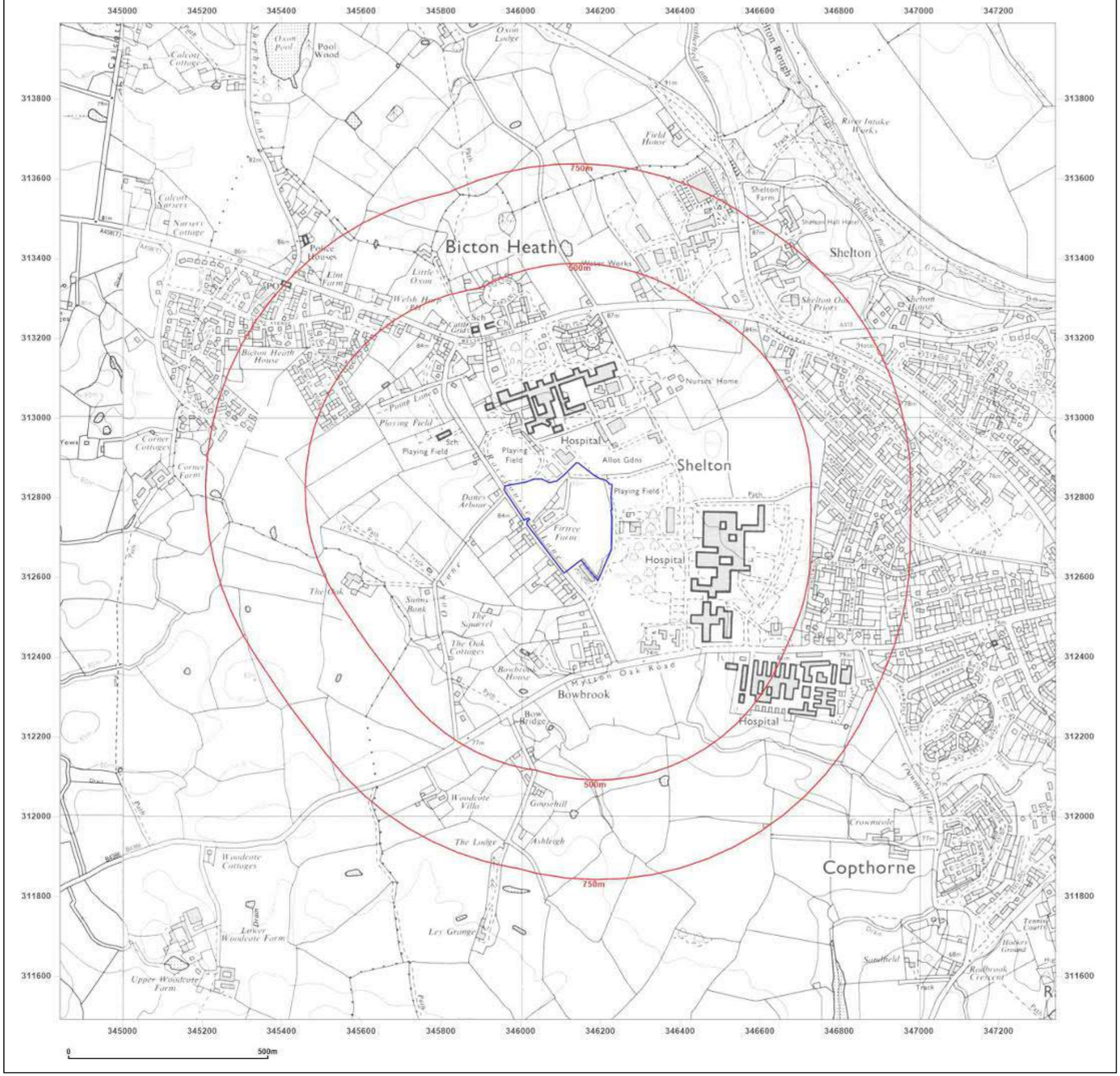

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1977-1981**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1973
Revised 1977
Edition N/A
Copyright 1977
Levelled 1973

Surveyed 1981
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

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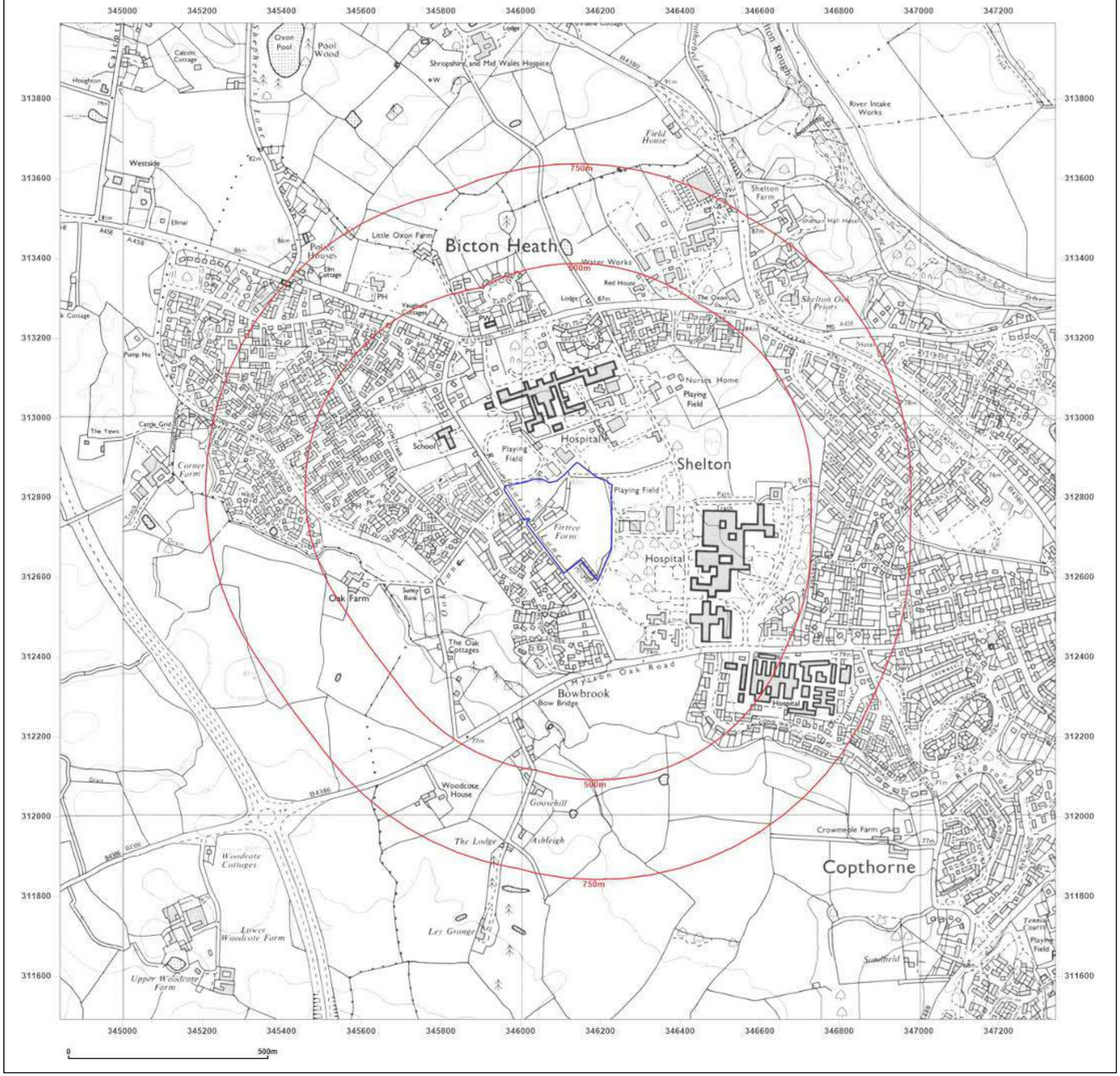

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Site Details:

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Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1973
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1981
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

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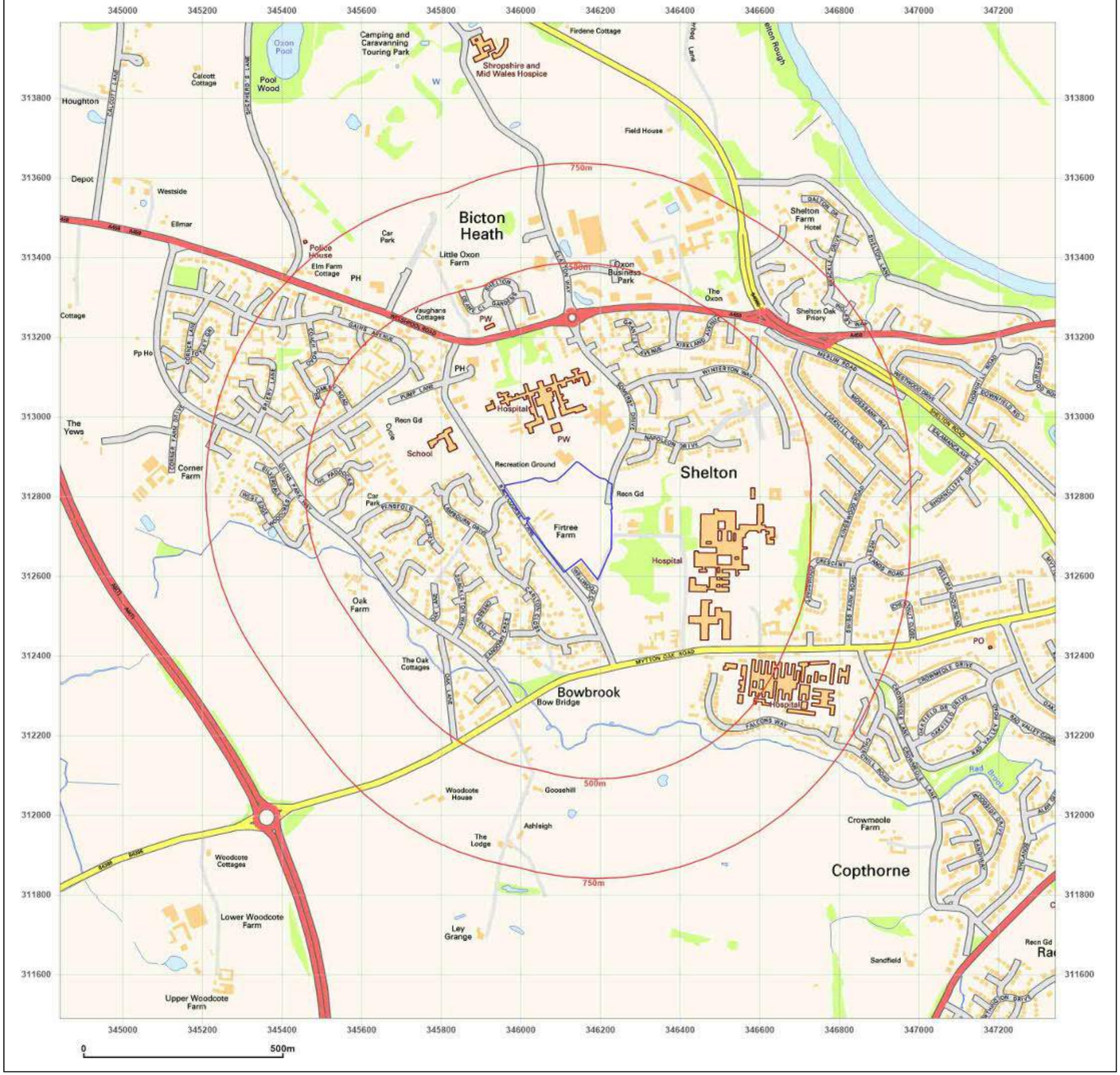

emapsite™

Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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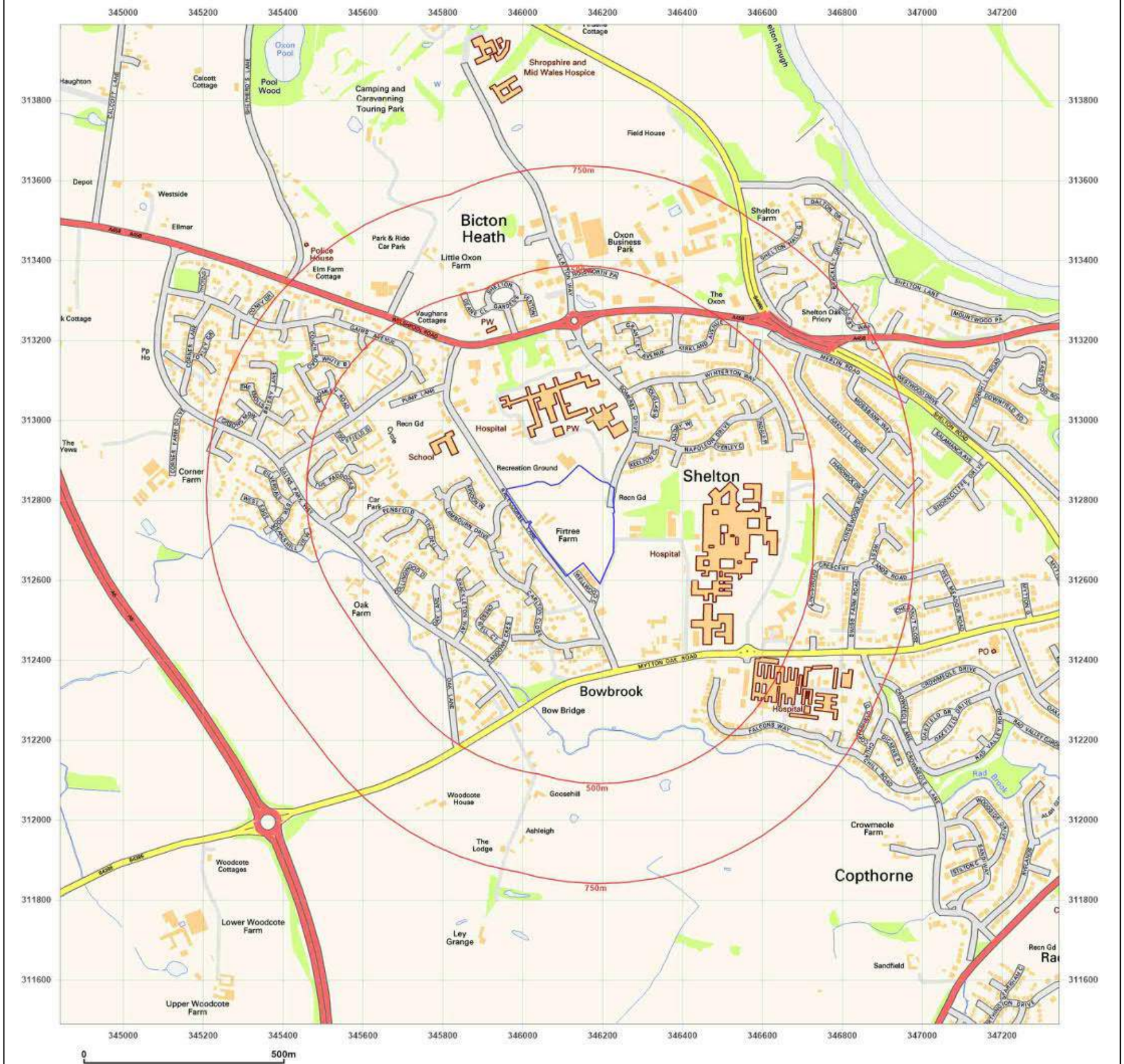
Production date: 04 July 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



emapsite™

Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
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2010

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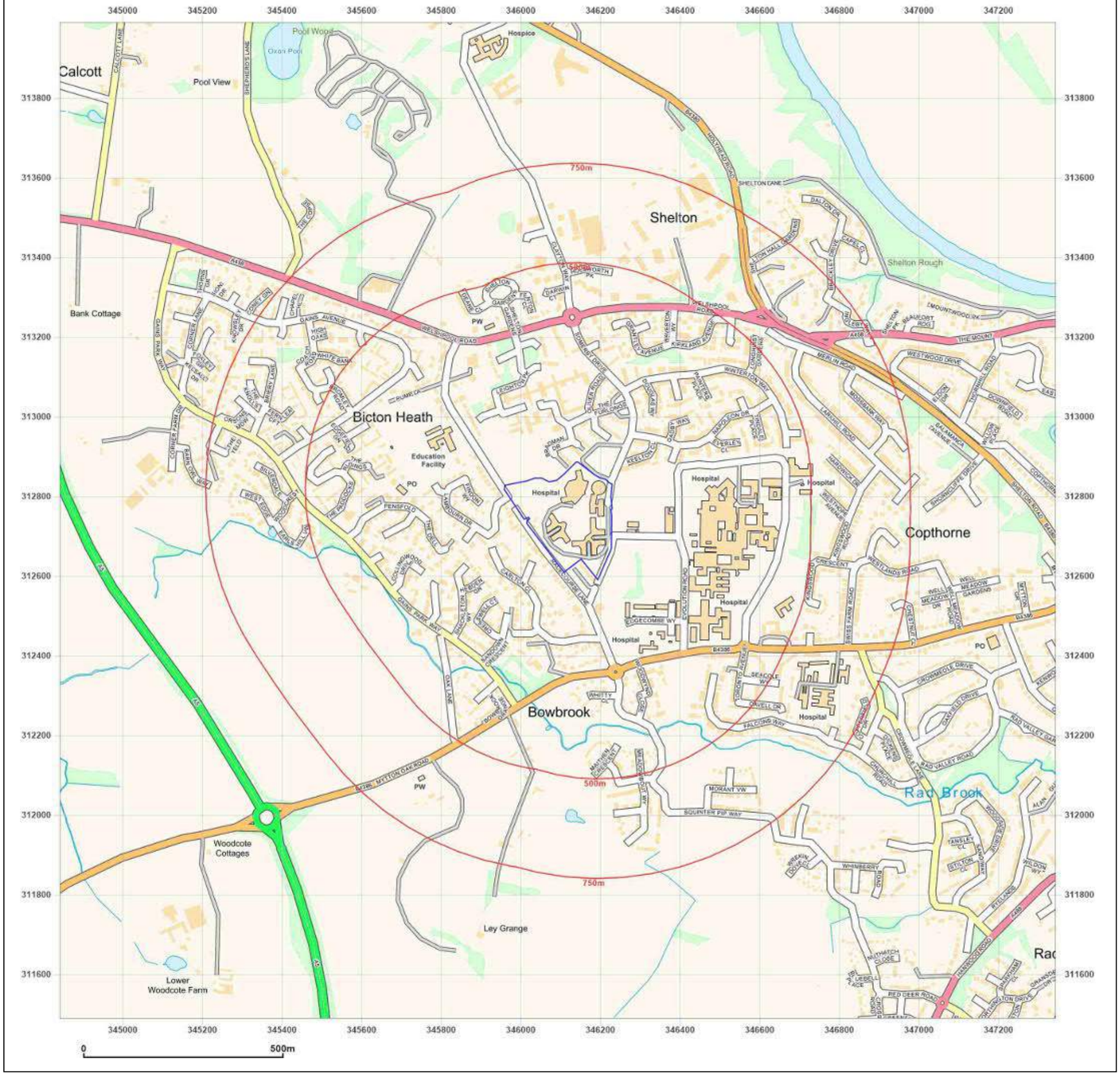

Site Details:

Redwoods Centre, Somerby Drive, Bicton Heath, SY3 8DS

Client Ref: EMS_706147_923202
Report Ref: EMS-706147_923202
Grid Ref: 346093, 312740

Map Name: National Grid

Map date: **2021**

Scale: 1:10,000

Printed at: 1:10,000

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2021

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Production date: 04 July 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf

APPENDIX E

SJ 41 SE 79 **4608 1278** **Copthorne, Shrewsbury** **Block C**

Surface level +85.5 m
Water not encountered
203 mm shell and auger
June 1979

Waste 9.7 m
Bedrock 3.3 m +

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.2	0.2
Till	Clay, silty at base, calcareous, reddish brown; rare subrounded pebbles, mainly quartzite	7.5	7.7
	Silt, calcareous, reddish brown to yellow-brown	2.0	9.7
Bridgnorth Sandstone	Sandstone, friable, red	3.3+	13.0

WELL BORING at [illegible]

Geol. map — 1 in. map New Series 152 — 6 in. map [illegible] — 152

[M]ade by — Date 1891 - 1892

Sunk 117 feet. Bored 190 feet.

Communicated by [illegible] (Committee on Underground Waters) for 1894, p. 43 (p. 307 [illegible] vol.) — 31

Height above Ordnance Datum 267 — Rest level of water 106

Yield 172,800 gals per day. Average quantity pumped 45,000 gals per day

Quality (with copy of analysis on ~~separate sheet~~ [illegible]) excellent drinking water.

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS Feet.	THICKNESS Inches.	DEPTH Feet.	DEPTH Inches.
Wrong. The questionnaire not understood by T H W	Well ~~(no record)~~	17		~~17~~	17
	Yellow clay with pebbles	9			
	Sandy red clay	4			30
	Sandy gravel	3			
	Sandy grey and red loam	19			
	Coarse gravel	3			55 [illegible]
	Red sandstone rock (Bunter Beds)	55			
Total depth to bottom of bore from surface (of ground) is 190 ft	grey " " "	6			
	red " " "	91		207	

Bottom of shaft +112

Analysis by [illegible], Public Analyst [illegible]

grains per gallon

Solids in suspension … none	
Solids in solution dried at 180°C.	22·0
Oxygen absorbed in [illegible] at 15°C	0·014
[illegible] ammonia	0·003
Albuminoid ammonia	0·0055
Nitrogen in nitrates	0·26
nitrites (none)	
Chlorine in chlorides	1·45
Hardness (temporary)	11½°
permanent	6½°
	18°

An approximate analysis of solids gives the following results:- grains per gallon

Carbonates of alkaline earths principally lime	16·0
Sulphate of magnesia	3·6
Chloride of sodium	2·4
	22·0

"This is an excellent drinking water, free from all [illegible] of animal contamination; it is perhaps [illegible] hard for [illegible] purposes, as is the case with [illegible] to be [illegible]".

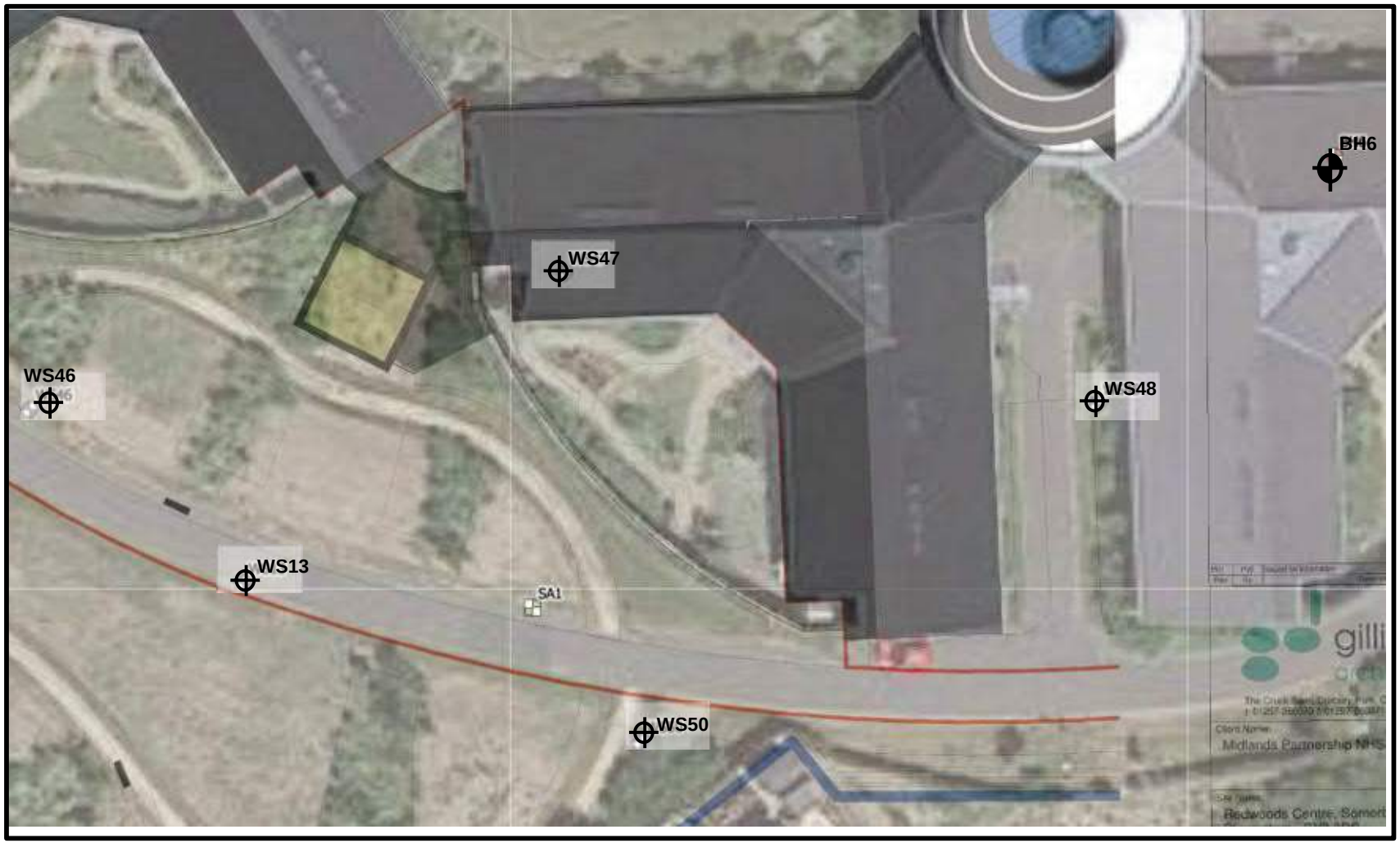
Abstract put on [illegible] Jan/31

TAW

T.H.
TRANSF

P.T.O.

APPENDIX F



DO NOT SCALE

NOTES:

BH1 **Clarkebond Cable Percussive Borehole Location 2010**

WS1 **Clarkebond Window sample hole location 2010**

GRM Development Solutions Ltd
Laurus House, First Ave, Centrum 100,
Burton-on-Trent, Staffordshire
Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:
Alan Johnson Partnership on behalf of South Staffordshire & Shropshire Healthcare NHS Foundation Trust

PROJECT:
Redwoods Centre, Somerby Drive, Shrewsbury

TITLE:
Exploratory Hole Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
PW	July 2021
PROJECT No:	DRAWING No:
P9761	Fig.3

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CONSULTING ENGINEERS

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WINDOW SAMPLE LOG

Project: SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY			WINDOW SAMPLE No: **WS13**
Job No: YB00437	Date: 25-02-09	Ground Level (m): 83.00	Co-Ordinates (): E 346,111.0 N 312,655.0
Contractor: H.B. BORING AND COMPANY LIMITED			Sheet: 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
				82.50		(0.50) 0.50	SUBSOIL: Comprising soft, friable, dark brown, slightly silty, clayey SAND with gravel.		
1.00-1.45	SPT	N13		81.00		(1.50) 2.00	Soft, pale orangish brown/grey, slightly gravelly, clayey, very sandy SILT with small pockets of sand and clay. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone and siltstone. [POSSIBLE GLACIAL TILL]		
2.00-2.45	SPT	N15		80.00		(1.00) 3.00	Medium dense, orangish brown, silty, very clayey SAND with pockets of clay and gravel. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone and siltstone. [POSSIBLE GLACIAL TILL]		
3.00-3.45 3.00-3.30 4.00-4.45	SPT T SPT	N19 N30		78.60		(1.40) 4.40	Stiff to very stiff, brown, silty, sandy CLAY with frequent fine to coarse, sub-angular gravel of sandstone and siltstone. [POSSIBLE GLACIAL TILL]		
5.00-5.45	SPT	N5		77.55		(1.05) 5.45	Loose, red, silty, very clayey, very fine SAND.		
							End of Hole at 5.45m BGL.		

Boring Progress and Water Observations

Date	Time	Depth	Tube Depth	Tube Dia. mm	Water Dpt

SAMPLES & TEST
E = Environmental Sample
T = Geotechnical Sample

GENERAL REMARKS
1. Hand excavated service inspection pit to 1.20mbgl.
2. Groundwater not encountered.
3. Borehole backfilled with arisings.

All dimensions in metres Scale 1:50	Client: SSSFT	Method/ Plant Used: DANDO TERRIER	Logged By: JEC

Log 08F CBGE WINDOW SAMPLE LOG ... SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY ... WS LOGS.GPJ CLARKE BOND.GDT 11/03/2009 10:15:52

CONSULTING ENGINEERS

clarkebond

WINDOW SAMPLE LOG

Project				WINDOW SAMPLE No
SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY				WS46
Job No YB00437	Date 10-09-09	Ground Level (m) 83.1*	Co-Ordinates ()	
Contractor GROUND INVESTIGATION SPECIALISTS				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
						(0.30) 0.30	Topsoil (Drillers Description)		
1.00	CPT	N50/ 0.25					Firm to stiff brown very sandy, silty CLAY/clayey SILT with occasional fine to coarse gravel of sandstone and siltstone and occasional pockets of sand. (Drillers Description). [SUPERFICIAL DEPOSITS].		
2.00	CPT	N21							
3.00	CPT	N50/ 0.26				(5.15)			
4.00	CPT	N52							
5.00	CPT	N55				5.45			
							End of hole at 5.45m bgl.		

Boring Progress and Water Observations

Date	Time	Depth	Tube Depth	Tube Dia. mm	Water Dpt

*Taken from M&A Survey Ltd Dwg No 08/104-03, 08/104-04, 08/104-05

GENERAL REMARKS

1. Hand dug service inspection pit excavated to approximately 1.2m bgl.
2. GW not encountered.
3. End of hole at 5.45m bgl.
4. Hole backfilled with arisings.

All dimensions in metres Scale 1:37.5	Client SSSFT	Method/ Plant Used COMPETITOR	Logged By JC

08f/08

Log "BEF CBGE WINDOW SAMPLE LOG 01G3 MIDLANDS\BIRMINGHAM PROJECTS\YB00437 - SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY\PRODUCTION\DATA - GEO ENVICB DATA\GINT\PHASE 2B - SEPT-OCT 09\YB00437 PH 2B - TT 090909.GPJ CLARKE BOND.GDT 05/11/2009 10:15:35

CONSULTING ENGINEERS

clarkebond

WINDOW SAMPLE LOG

Project				WINDOW SAMPLE No
SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY				WS47
Job No	Date	Ground Level (m)	Co-Ordinates ()	
YB00437	10-09-09	82.0*		
Contractor				Sheet
GROUND INVESTIGATION SPECIALISTS				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.20	Brown very dry/friable sandy gravelly claycy SILT with rootlets. Gravel is fine to coarse, subrounded to subangular of siltstone and sandstone. [TOPSOIL].		
0.50	E						Very dense from 1m bgl, pale silty very fine-grained SAND, with bands of gravel. Gravel is fine to medium, subangular to angular of siltstone, and subrounded of quartz. [SUPERFICIAL DEPOSITS].		
1.00	CPT	N50/ 0.26				(2.20)			
1.70	E						....at 1.8m bgl a band of gravel in a sandy silty matrix was recovered.		
2.00	CPT	N38				2.50			
2.70	T						Stiff brown, slightly sandy, very silty CLAY with occasional medium to coarse gravel and pockets of medium-grained sand. Gravel is subrounded of siltstone ans sandstone. [SUPERFICIAL DEPOSITS].		
3.00	CPT	N27							
3.50	T					(2.95)			
4.00	T								
4.00	CPT	N50/ 0.27							
5.00	CPT	N33				5.45	End of hole at 5.45m bgl.		

Boring Progress and Water Observations					
Date	Time	Depth	Tube Depth	Tube Dia. mm	Water Dpt

*Taken from M&A Survey Ltd Dwg No 08/104-03, 08/104-04, 08/104-05

GENERAL REMARKS

1. Hand dug service inspection pit excavated to approximately 1.2m bgl.
2. GW not encountered.
3. End of hole at 5.45m bgl.
4. Hole backfilled with arisings.

All dimensions in metres Scale 1:37.5	Client SSSFT	Method/ Plant Used COMPETITOR	Logged By JC

Log TDIF CBGE WINDOW SAMPLE LOG O:\CB MIDLANDS\BIRMINGHAM PROJECTS\YB00437 - SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY\PRODUCTION\DATA - GEO ENV\CB DATA\GINT\PHASE 2B - SEPT-OCT 09\YB00437 PH 2B - T1 090909.GPJ CLARKE BOND.GDT 05/11/2009 10:15:38

CONSULTING ENGINEERS

clarkebond

WINDOW SAMPLE LOG

Project				WINDOW SAMPLE No
SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY				WS48
Job No	Date	Ground Level (m)	Co-Ordinates ()	
YB00437	09-09-09	80.7*		
Contractor				Sheet
GROUND INVESTIGATION SPECIALISTS				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.00-1.00	E					(0.40) 0.40	Brown very dry/friable sandy gravelly clayey SILT with rootlets. Gravel is fine to coarse, subrounded to subangular of siltstone and sandstone. [TOPSOIL].		
1.00	CPT	N50/ 0.24				(1.10) 1.50	Stiff/hard friable orange/brown, mottled grey sandy very gravelly SILT with fine to coarse subangular gravel of mudstone. [SUPERFICIAL DEPOSITS].		
						(0.40) 1.90	Orange slightly gravelly slightly clayey silty medium-grained SAND. [SUPERFICIAL DEPOSITS].		
2.00-2.20 2.00-2.10	T E					(1.50)	Stiff, friable in parts, orange/brown sandy clayey gravelly SILT. Gravel is fine to coarse, subangular of mudstone. [SUPERFICIAL DEPOSITS].		
2.50-2.70	T								
3.00-3.20	T					3.40	End of hole at 3.4m bgl.		

Boring Progress and Water Observations					
Date	Time	Depth	Tube Depth	Tube Dia. mm	Water Dpt

*Taken from M&A Survey Ltd Dwg No 08/104-03, 08/104-04, 08/104-05

GENERAL REMARKS

1. Hand dug service inspection pit excavated to approximately 1.2m bgl.
2. GW not encountered.
3. End of hole at 3.4m bgl.
4. Hole backfilled with arisings.

All dimensions in metres Scale 1:37.5	Client SSSFT	Method/ Plant Used COMPETITOR	Logged By JC

Log 08F CBGS WINDOW SAMPLE LOG O:\CB_MIDLANDS\BIRMINGHAM PROJECTS\YB00437 - SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY\PRODUCTION\DATA - GEO ENV\GI DATA\GINT\PHASE 2B - SEPT-OCT 09\YB00437 FH 2B - TT 090909.GPJ CLARKE BOND GDT 08/11/2009 10:15:40

CONSULTING ENGINEERS

clarkebond

WINDOW SAMPLE LOG

Project				WINDOW SAMPLE No
SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY				WS50
Job No	Date	Ground Level (m)	Co-Ordinates ()	
YB00437	08-09-09	82.5*		
Contractor				Sheet
GROUND INVESTIGATION SPECIALISTS				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						(0.30) 0.30	MADE GROUND: Comprising firm, brown, slightly sandy, gravelly silt/clay. Gravel is fine to medium, sub-rounded to sub-angular siltstone and sandstone.		
0.40-0.60	T						Firm to stiff, orangey brown (mottled grey between 0.3 and 2.00mbgl) sandy, gravelly CLAY with occasional small (<5mm diameter) pockets of soft, black silt. Gravel is fine to medium, sub-angular to rounded mudstone and sandstone. [SUPERFICIAL DEPOSITS].		
1.00	CPT	N50							
1.20-1.40	T								
1.40-1.60	T								
2.00	CPT	N33							
2.40-2.60	T					(4.50)			
3.00	CPT	N50/ 0.23							
3.40-3.60	T								
4.00	CPT	N50/ 0.23							
4.40-4.60	T								
						4.80			
4.80-5.00	T						Firm, reddish brown CLAY. [SUPERFICIAL DEPOSITS].		
5.00	CPT	N36				(0.65)			
						5.45			
							End of Hole at 5.45m BGL.		

Boring Progress and Water Observations

Date	Time	Depth	Tube Depth	Tube Dia. mm	Water Dpt

*Taken from M&A Survey Ltd Dwg No 08/104-03, 08/104-04, 08/104-05

GENERAL REMARKS

1. Hand dug service inspection pit excavated to approximately 1.2m bgl.
2. GW not encountered.
3. End of hole at 5.45m bgl.
4. Hole backfilled with arisings.

All dimensions in metres Scale 1:37.5	Client SSSFT	Method/ Plant Used COMPETITOR	Logged By PD

Log *08F GSGE WINDOW SAMPLE LOG O:\CB MIDLANDS\BIRMINGHAM PROJECTS\YB00437 SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY\PRODUCTION\DATA - GEO E\MVCB DATA\GINT\PHASE 2B - SEPT-OCT 09\YB00437 PH 2B - TT 090506.GPJ CLARKE BOND.GDT 05/11/2009 10:15:45

CONSULTING ENGINEERS

clarkebond

PERCUSSIVE BOREHOLE LOG

Project				PERCUSSIVE BOREHOLE No
SHELTON MENTAL HEALTH HOSPITAL, SHREWSBURY				BH6
Job No	Date	Ground Level (m)	Co-Ordinates ()	
YB00437	09-09-09	80.7*		
Contractor				Sheet
GROUND INVESTIGATION SPECIALISTS				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.10-1.20	B					0.10	TOPSOIL.		
						(1.50)	Vey stiff light brown dessicated SILT with some gravel. [SUPERFICIAL DEPOSITS].		
1.20-1.65	D								
1.20-1.65	SPT	N16				1.60			
1.70	D						Firm/stiff brown slightly sandy, slightly gravelly silty CLAY. [SUPERFICIAL DEPOSITS].		
2.00-2.45	U	17 blows							
2.45-2.60	D								
2.80	D								
3.00-3.45	D								
3.00-4.00	B								
3.00-3.45	SPT	N8				(4.10)			
4.00-4.30	U	50 blows							
4.30-4.45	D								
4.80	D								
5.00-5.45	D								
5.00-5.45	SPT	N16				5.70			
5.80	D						Firm red SILT/SILTY SAND. [SUPERFICIAL DEPOSITS].		
6.00-6.45	U	27 blows							
6.45-6.60	D								
6.60-7.00	B								
7.00-7.45	D								
7.00-7.45	SPT	N21							
7.80	D					(4.35)			
8.00-8.45	U	27 blows							
8.45-8.60	D								
8.60-9.00	B								
9.00-9.45	D								
9.00-9.45	SPT	N17							
9.60-10.05	D								
9.60	D					10.05			
9.60-10.05	SPT	N10					End of hole at 10.05m bgl.		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	1. Hand dug service inspection pit excavated to approximately 1.2m bgl. 2. GW not encountered. 3. End of hole at 10.05m bgl. 4. Combined gas & GW monitoring well installed to 9.7m bgl.

All dimensions in metres Scale 1:65.625	Client SSSFT	Method/ Plant Used CP RIG	Logged By DRILLERS LOGS

Log *08A CBGE PERCUSSIVE BOREHOLE LOG O:\CB MIDLANDS\BIRMINGHAM PROJECTS\YB00437 - SHELTON MENTAL HEALTH HOSPITAL SHREWSBURY\PRODUCTION\DATA - GEO ENVC\3 DATA\GINT\PHASE 2\YB00437 PH 2B - TT 090609.GPJ CLARKE BOND GDT 06/10/2009 16:09:02

APPENDIX G

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Redwoods Centre,Somerby Drive,Bicton Heath,SY3 8DS

Order Details

Date: 05/07/2021

Your ref: EMS_706147_923203

Our Ref: EMS-706147_923203

Client: emapsite

Site Details

Location: 346120 312751

Area: 4.77 ha

Authority: Shropshire Council - Unitary

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	1	0	7	13	-
15	1.2	Historical tanks	0	5	1	0	-
16	1.3	Historical energy features	0	0	2	8	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses	1	0	11	17	-
20	2.2	Historical tanks	0	12	4	0	-
20	2.3	Historical energy features	0	0	4	28	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	1	1	0	-
25	3.7	Waste exemptions	0	1	10	8	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
28	4.1	Recent industrial land uses	1	3	7	-	-
29	4.2	Current or recent petrol stations	0	0	0	0	-
29	4.3	Electricity cables	0	0	0	0	-
30	4.4	Gas pipelines	0	0	0	0	-
30	4.5	Sites determined as Contaminated Land	0	0	0	0	-

30	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
31	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
31	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
31	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
31	**4.12**	**Radioactive Substance Authorisations**	0	0	9	5	-
33	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	1	-
34	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
34	4.15	Pollutant release to public sewer	0	0	0	0	-
34	4.16	List 1 Dangerous Substances	0	0	0	0	-
34	4.17	List 2 Dangerous Substances	0	0	0	0	-
35	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	6	-
35	4.19	Pollution inventory substances	0	0	0	0	-
36	4.20	Pollution inventory waste transfers	0	0	0	0	-
36	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
37	**5.1**	**Superficial aquifer**	Identified (within 500m)				
39	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
41	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
42	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
43	5.5	Groundwater vulnerability- local information	None (within 0m)				
44	**5.6**	**Groundwater abstractions**	0	0	0	0	7
46	**5.7**	**Surface water abstractions**	0	0	0	0	4
47	**5.8**	**Potable abstractions**	0	0	0	0	5
49	**5.9**	**Source Protection Zones**	1	0	0	1	-
49	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

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

50	**6.2**	**Surface water features**	0	1	0	-	-
51	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
51	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
52	**6.5**	**WFD Groundwater bodies**	2	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
53	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
53	7.2	Historical Flood Events	0	0	0	-	-
53	7.3	Flood Defences	0	0	0	-	-
53	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
54	7.5	Flood Storage Areas	0	0	0	-	-
55	7.6	Flood Zone 2	None (within 50m)				
55	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
56	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
58	**9.1**	**Groundwater flooding**	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
59	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
60	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
60	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
60	10.4	Special Protection Areas (SPA)	0	0	0	0	0
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
61	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
61	**10.7**	**Designated Ancient Woodland**	0	0	0	0	4
61	10.8	Biosphere Reserves	0	0	0	0	0
62	10.9	Forest Parks	0	0	0	0	0
62	10.10	Marine Conservation Zones	0	0	0	0	0
62	10.11	Green Belt	0	0	0	0	0
62	10.12	Proposed Ramsar sites	0	0	0	0	0

62	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
63	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
63	10.15	Nitrate Sensitive Areas	0	0	0	0	0
63	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
64	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
65	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
66	11.1	World Heritage Sites	0	0	0	-	-
67	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
67	11.3	National Parks	0	0	0	-	-
67	**11.4**	**Listed Buildings**	0	0	2	-	-
68	11.5	Conservation Areas	0	0	0	-	-
68	11.6	Scheduled Ancient Monuments	0	0	0	-	-
68	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	**12.1**	**Agricultural Land Classification**	Grade 3a (within 250m)				
70	12.2	Open Access Land	0	0	0	-	-
70	12.3	Tree Felling Licences	0	0	0	-	-
70	12.4	Environmental Stewardship Schemes	0	0	0	-	-
71	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
72	**13.1**	**Priority Habitat Inventory**	0	0	1	-	-
73	13.2	Habitat Networks	0	0	0	-	-
73	13.3	Open Mosaic Habitat	0	0	0	-	-
73	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
74	**14.1**	**10k Availability**	Identified (within 500m)				
75	14.2	Artificial and made ground (10k)	0	0	0	0	-
76	14.3	Superficial geology (10k)	0	0	0	0	-

76	14.4	Landslip (10k)	0	0	0	0	-
77	14.5	Bedrock geology (10k)	0	0	0	0	-
77	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
78	**15.1**	**50k Availability**	Identified (within 500m)				
79	15.2	Artificial and made ground (50k)	0	0	0	0	-
79	15.3	Artificial ground permeability (50k)	0	0	-	-	-
80	**15.4**	**Superficial geology (50k)**	2	1	1	3	-
81	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
81	15.6	Landslip (50k)	0	0	0	0	-
81	15.7	Landslip permeability (50k)	None (within 50m)				
82	**15.8**	**Bedrock geology (50k)**	1	0	0	1	-
83	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
83	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
84	**16.1**	**BGS Boreholes**	2	0	15	-	-
Page	Section	Natural ground subsidence					
86	**17.1**	**Shrink swell clays**	Very low (within 50m)				
87	**17.2**	**Running sands**	Low (within 50m)				
89	**17.3**	**Compressible deposits**	Moderate (within 50m)				
91	**17.4**	**Collapsible deposits**	Very low (within 50m)				
92	**17.5**	**Landslides**	Very low (within 50m)				
93	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
94	18.1	Natural cavities	0	0	0	0	-
95	18.2	BritPits	0	0	0	0	-
95	**18.3**	**Surface ground workings**	0	6	4	-	-
95	18.4	Underground workings	0	0	0	0	0
96	18.5	Historical Mineral Planning Areas	0	0	0	0	-

96	18.6	Non-coal mining	0	0	0	0	0
96	18.7	Mining cavities	0	0	0	0	0
96	**18.8**	**JPB mining areas**	Identified (within 0m)				
97	18.9	Coal mining	None (within 0m)				
97	18.10	Brine areas	None (within 0m)				
97	18.11	Gypsum areas	None (within 0m)				
97	18.12	Tin mining	None (within 0m)				
97	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
98	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
99	**20.1**	**BGS Estimated Background Soil Chemistry**	3	2	-	-	-
99	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
99	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
100	21.1	Underground railways (London)	0	0	0	-	-
100	21.2	Underground railways (Non-London)	0	0	0	-	-
100	21.3	Railway tunnels	0	0	0	-	-
100	21.4	Historical railway and tunnel features	0	0	0	-	-
100	21.5	Royal Mail tunnels	0	0	0	-	-
101	21.6	Historical railways	0	0	0	-	-
101	21.7	Railways	0	0	0	-	-
101	21.8	Crossrail 1	0	0	0	0	-
101	21.9	Crossrail 2	0	0	0	0	-
101	21.10	HS2	0	0	0	0	-

Recent aerial photograph

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Capture Date: 20/04/2020

Site Area: 4.77ha

Recent site history - 2017 aerial photograph

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Capture Date: 10/05/2017

Site Area: 4.77ha

Recent site history - 2012 aerial photograph

Capture Date: 27/03/2012

Site Area: 4.77ha

Recent site history - 2010 aerial photograph

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Capture Date: 25/10/2010

Site Area: 4.77ha

Recent site history - 2000 aerial photograph

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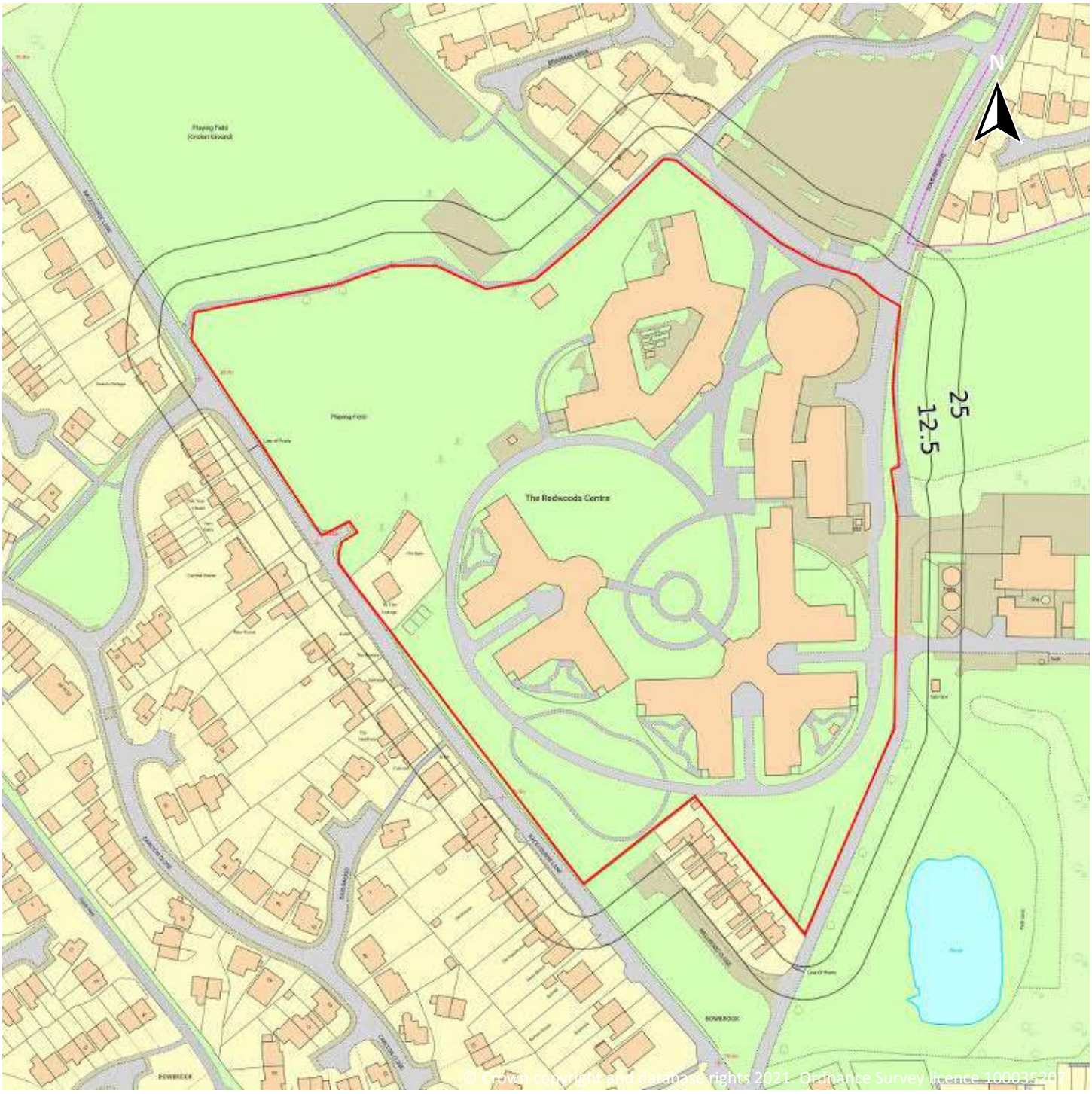
Capture Date: 25/08/2000

Site Area: 4.77ha

OS MasterMap site plan



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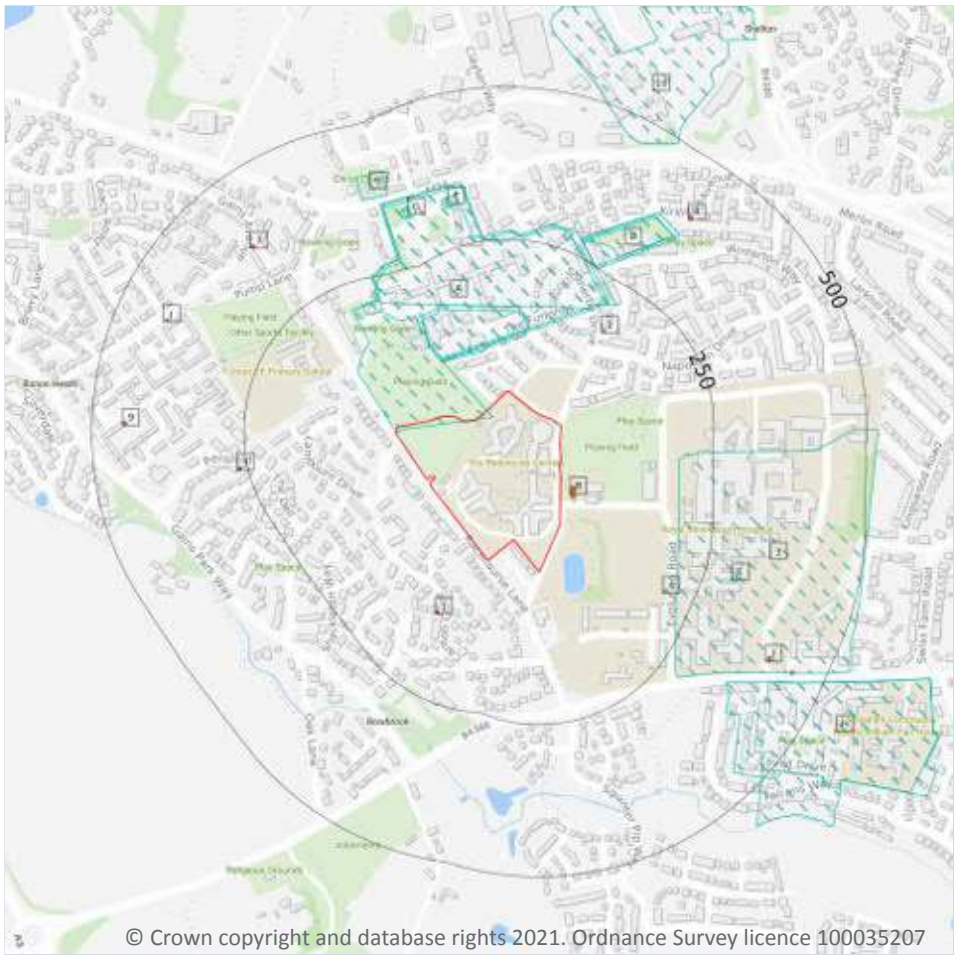
Site Area: 4.77ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	21

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Mental Hospital**	**1954**	**885670**

ID	Location	Land use	Dates present	Group ID
A	76m NW	Mental Hospital	1925	931286
A	79m NW	Mental Hospital	1938	867238
C	87m N	Hospital	1969 - 1993	851906
C	140m N	Mental Hospital	1925 - 1938	946886
3	192m E	Hospital	1981 - 1993	944407
D	247m NE	Isolation Hospital	1954	897865
D	249m NE	Isolation Hospital	1925 - 1938	910291
D	275m NE	Isolation Hospital	1969	915914
E	295m E	Boat House	1901	845847
E	300m E	Boat House	1881	952166
F	316m N	Unspecified Heap	1925	876597
F	317m N	Unspecified Heap	1900	925539
F	317m N	Unspecified Heap	1938	955696
G	325m NW	Unspecified Heap	1925	870360
G	327m NW	Unspecified Heap	1938	865107
G	327m NW	Unspecified Heap	1900	922186
H	356m SE	Hospital	1981 - 1993	951110
6	375m N	Grave Yard	1881	817152
H	418m SE	Hospital	1954 - 1969	979376
10	462m NE	Water Works	1981 - 1993	887613

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**6**

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
B	16m E	Tanks	1988 - 1989	140926
B	16m E	Unspecified Tank	1988	129909
B	16m E	Unspecified Tank	1981 - 1996	137190
B	17m E	Unspecified Tank	1981	133948
B	17m E	Unspecified Tank	1994 - 1996	148387
4	199m SE	Unspecified Tank	1981 - 1996	131323

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**10**

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	115m SW	Electricity Substation	1988 - 1996	82708
2	166m NE	Electricity Substation	1996	60165
5	259m W	Electricity Substation	1987 - 1997	71891
7	375m NW	Electricity Substation	1984 - 1996	77234
8	397m NE	Electricity Substation	1989 - 1998	84764
I	399m SE	Electricity Substation	1976 - 1990	83882
J	415m NW	Gas Governing Station	1996	63708
J	415m NW	Gas Governor	1984	76000
9	442m W	Electricity Substation	1987 - 1997	79818
I	444m SE	Electricity Substation	1988 - 1990	80846

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

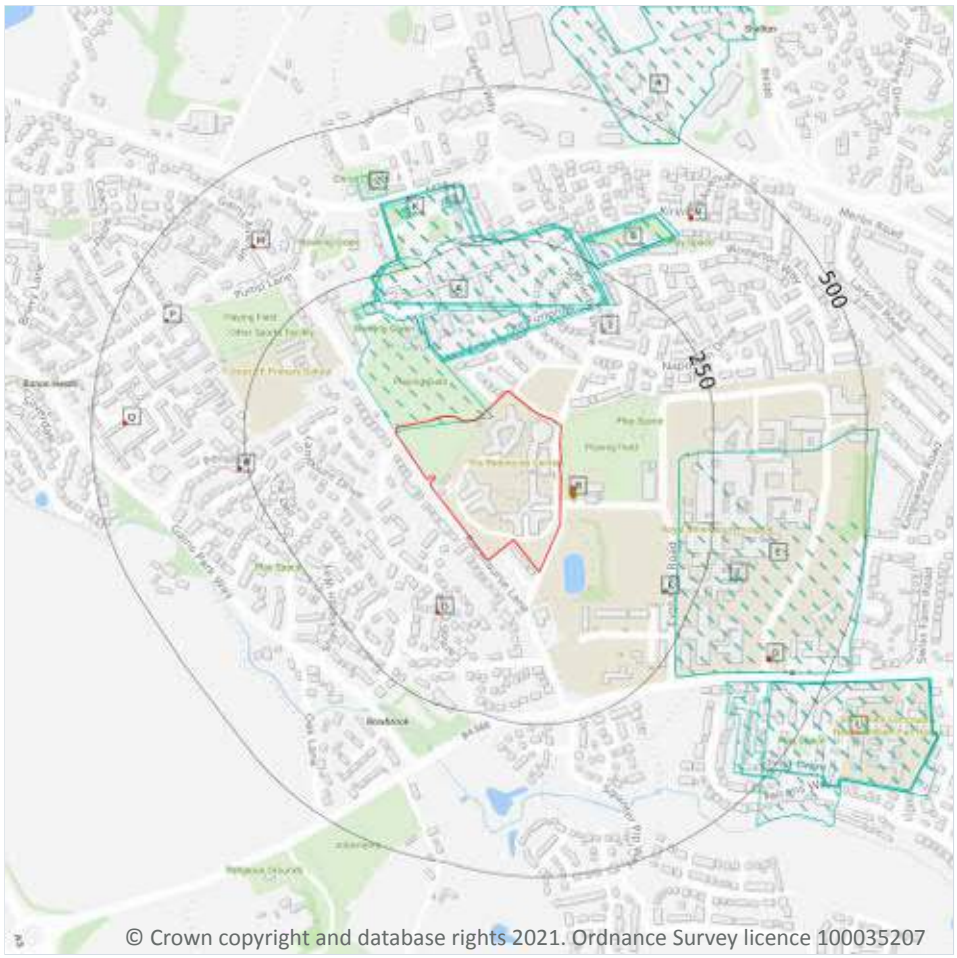
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



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Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	29

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Mental Hospital**	**1954**	**885670**
A	76m NW	Mental Hospital	1925	931286
A	79m NW	Mental Hospital	1938	867238

ID	Location	Land Use	Date	Group ID
C	87m N	Hospital	1969	851906
C	87m N	Hospital	1981	851906
C	87m N	Hospital	1993	851906
C	140m N	Mental Hospital	1938	946886
C	144m N	Mental Hospital	1925	946886
E	192m E	Hospital	1981	944407
E	192m E	Hospital	1993	944407
G	247m NE	Isolation Hospital	1954	897865
G	249m NE	Isolation Hospital	1938	910291
G	256m NE	Isolation Hospital	1925	910291
G	275m NE	Isolation Hospital	1969	915914
I	295m E	Boat House	1901	845847
I	300m E	Boat House	1881	952166
J	316m N	Unspecified Heap	1925	876597
J	317m N	Unspecified Heap	1938	955696
J	317m N	Unspecified Heap	1900	925539
K	325m NW	Unspecified Heap	1925	870360
K	327m NW	Unspecified Heap	1938	865107
K	327m NW	Unspecified Heap	1900	922186
L	356m SE	Hospital	1993	951110
2	375m N	Grave Yard	1881	817152
L	380m SE	Hospital	1981	951110
L	418m SE	Hospital	1969	979376
L	423m SE	Hospital	1954	979376
R	462m NE	Water Works	1981	887613
R	462m NE	Water Works	1993	887613

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**16**

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
B	16m E	Tanks	1988	140926
B	16m E	Tanks	1988	140926
B	16m E	Tanks	1989	140926
B	16m E	Tanks	1989	140926
B	16m E	Unspecified Tank	1988	129909
B	16m E	Unspecified Tank	1988	137190
B	17m E	Unspecified Tank	1996	137190
B	17m E	Unspecified Tank	1981	133948
B	17m E	Unspecified Tank	1994	137190
B	17m E	Unspecified Tank	1996	148387
B	17m E	Unspecified Tank	1994	148387
B	17m E	Unspecified Tank	1981	137190
F	199m SE	Unspecified Tank	1996	131323
F	199m SE	Unspecified Tank	1994	131323
F	200m SE	Unspecified Tank	1988	131323
F	201m SE	Unspecified Tank	1981	131323

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**32**

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
D	115m SW	Electricity Substation	1996	82708
D	115m SW	Electricity Substation	1994	82708
D	115m SW	Electricity Substation	1988	82708
1	166m NE	Electricity Substation	1996	60165
H	259m W	Electricity Substation	1996	71891
H	259m W	Electricity Substation	1997	71891
H	260m W	Electricity Substation	1987	71891
H	260m W	Electricity Substation	1987	71891
H	260m W	Electricity Substation	1993	71891
M	375m NW	Electricity Substation	1996	77234
M	376m NW	Electricity Substation	1984	77234
M	377m NW	Electricity Substation	1984	77234
N	397m NE	Electricity Substation	1994	84764
N	397m NE	Electricity Substation	1998	84764
N	397m NE	Electricity Substation	1994	84764
N	398m NE	Electricity Substation	1989	84764
O	399m SE	Electricity Substation	1988	83882
O	399m SE	Electricity Substation	1988	83882
O	400m SE	Electricity Substation	1987	83882
O	400m SE	Electricity Substation	1988	83882
O	400m SE	Electricity Substation	1990	83882
O	400m SE	Electricity Substation	1976	83882
P	415m NW	Gas Governing Station	1996	63708
P	415m NW	Gas Governor	1984	76000
P	416m NW	Gas Governor	1984	76000
Q	442m W	Electricity Substation	1996	79818
Q	442m W	Electricity Substation	1997	79818

ID	Location	Land Use	Date	Group ID
Q	442m W	Electricity Substation	1987	79818
Q	443m W	Electricity Substation	1987	79818
Q	443m W	Electricity Substation	1993	79818
O	444m SE	Electricity Substation	1988	80846
O	444m SE	Electricity Substation	1990	80846

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

Site Outline

Search buffers in metres (m)

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	2

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

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

ID	Location	Details		
A	34m E	Site Name: Royal Shrewsbury Hospital, Clinical Waste Transfer Station Site Address: Royal Shrewsbury Hospital, Mytton Oak Road, Copthorne, Shrewsbury, Shropshire, SY3 8XQ Correspondence Address: -	Type of Site: Clinical Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHR007 EPR reference: EA/EPR/YP3099CH/S002 Operator: Shropshire Health Authority Waste Management licence No: 47030 Annual Tonnage: 0	Issue Date: 08/07/1993 Effective Date: - Modified: - Surrendered Date: Sep 2 2008 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

ID	Location	Details		
A	63m E	Site Name: Shrewsbury Hospital Site Address: Waste Compund - Shrewsbury Hospital, Hytton Oak Road, Shrewsbury, Shropshire, SY3 8XQ Correspondence Address: -	Type of Site: Clinical Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHR027 EPR reference: EA/EPR/XP3498EW/S002 Operator: Shrewsbury & Telford Hospitals N H S Trust Waste Management licence No: 100307 Annual Tonnage: 0	Issue Date: 15/08/2008 Effective Date: - Modified: - Surrendered Date: Aug 6 2013 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

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

3.7 Waste exemptions

Records within 500m **19**

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

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

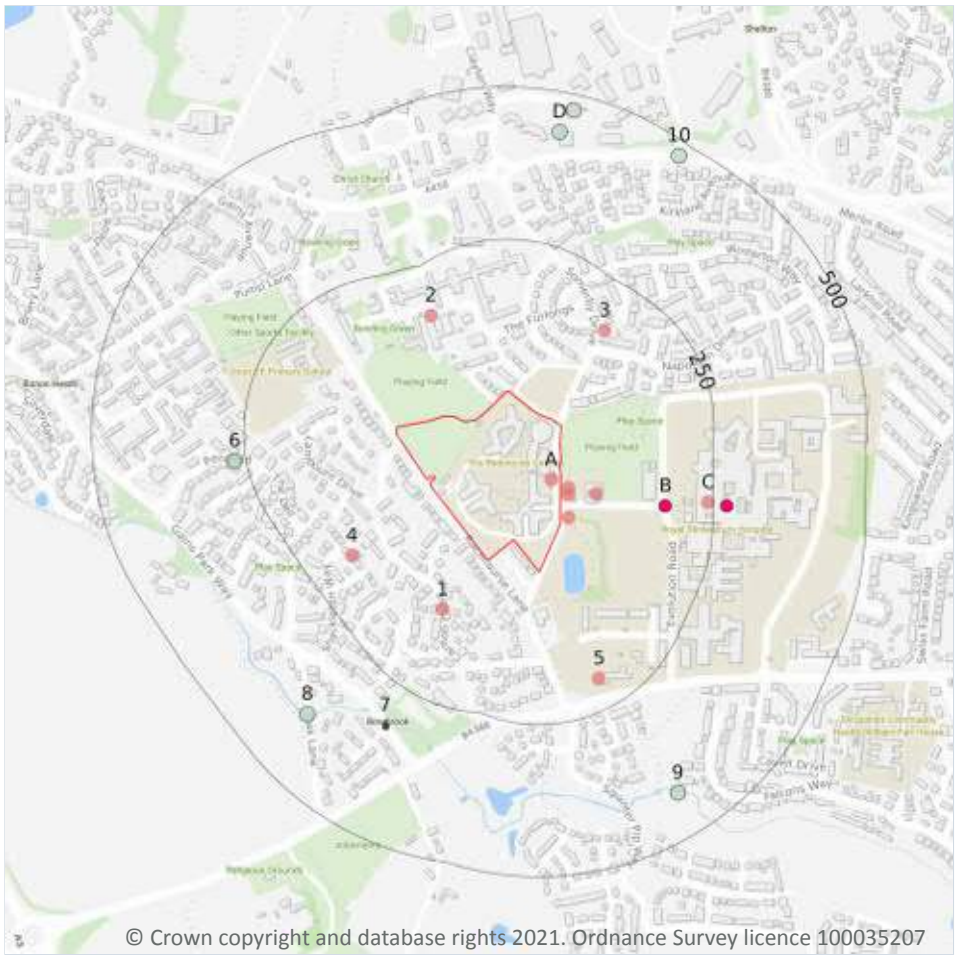
ID	Location	Site	Reference	Category	Sub-Category	Description
1	11m E	-	WEX231839	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
B	65m S	Mytton Oak Surgery Racecourse Lane SHREWSBURY SY3 5LZ	EPR/SF0906ZG/A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
B	71m S	RACECOURSE LANE, SHREWSBURY, SY3 5LZ	WEX146070	Storing waste exemption	Not on a farm	Storage of waste in secure containers
B	71m S	RACECOURSE LANE, SHREWSBURY, SY3 5LZ	WEX146070	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	73m S	Mytton Oak Surgery Racecourse Lane SHREWSBURY SY3 5LZ	EPR/WE5455CK/A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
2	166m NE	Redwoods Centre Somerby Drive SHREWSBURY SY3 8DS	EPR/HF0205PA/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes

ID	Location	Site	Reference	Category	Sub-Category	Description
3	201m NW	-	WEX143616	Using waste exemption	Not on a farm	Use of waste in construction
4	201m S	-	WEX248667	Using waste exemption	Not on a farm	Use of waste in construction
C	242m E	MYTTON OAK ROAD, SHREWSBURY, SY3 8XQ	WEX220885	Storing waste exemption	Not on a farm	Storage of waste in secure containers
C	242m E	MYTTON OAK ROAD, SHREWSBURY, SY3 8XQ	WEX074613	Storing waste exemption	Not on a farm	Storage of waste in secure containers
C	242m E	Shrewsbury and Telford Hospital NHS Trust SY3 8XQ	EPR/YF0405NZ /A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
D	336m SE	William Farr House, Mytton Oak Road, SHREWSBURY, SY3 8XL	WEX145908	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
D	336m SE	Shropshire Community Health NHS Trust, William Farr House, Mytton Oak Road, SHREWSBURY, SY3 8XL	WEX117178	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
E	432m N	Balfours New Windsor House Oxon Business Park Shrewsbury Shropshire SY3 5HJ	EPR/SH0577FV /A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
E	432m N	Balfours New Windsor House Oxon Business Park Shrewsbury Shropshire SY3 5HJ	EPR/SH0577FV /A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
E	432m N	Balfours New Windsor House Oxon Business Park Shrewsbury Shropshire SY3 5HJ	EPR/SH0577FV /A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
E	432m N	Balfours New Windsor House Oxon Business Park Shrewsbury Shropshire SY3 5HJ	EPR/SH0577FV /A001	Treating waste exemption	Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	432m N	Balfours New Windsor House Oxon Business Park Shrewsbury Shropshire SY3 5HJ	EPR/SH0577FV /A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose

ID	Location	Site	Reference	Category	Sub-Category	Description
5	445m N	HAFREN HOUSE, WELSHPOOL ROAD, SHELTON, SHREWSBURY, SY3 8BB	WEX152784	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Radioactive Substance Authorisations

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	**11**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Electricity Sub Station**	**Shropshire, SY3**	**Electrical Features**	**Infrastructure and Facilities**
A	12m E	Tank	Shropshire, SY3	Tanks (Generic)	Industrial Features
A	12m E	Tank	Shropshire, SY3	Tanks (Generic)	Industrial Features

ID	Location	Company	Address	Activity	Category
A	14m E	Gas Governor	Shropshire, SY3	Gas Features	Infrastructure and Facilities
A	57m E	Chimney	Shropshire, SY3	Chimneys	Industrial Features
1	110m SW	Electricity Sub Station	Shropshire, SY3	Electrical Features	Infrastructure and Facilities
2	167m N	Electricity Sub Station	Shropshire, SY3	Electrical Features	Infrastructure and Facilities
3	169m NE	Electricity Sub Station	Shropshire, SY3	Electrical Features	Infrastructure and Facilities
4	172m SW	The Dragon Company UK Ltd	32, Shackleton Way, Shrewsbury, Shropshire, SY3 8SW	Workwear	Industrial Products
5	200m SE	Electricity Sub Station	Shropshire, SY3	Electrical Features	Infrastructure and Facilities
C	242m E	Royal Shrewsbury Hospital	Mytton Oak Road, Shrewsbury, Shropshire, SY3 8XQ	Hospitals	Health Practitioners and Establishments

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	14

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

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Address	Details	
B	172m E	The Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: The Shrewsbury and Telford Hospital NHS Trust Type: - Permission number: YB3330DZ Date of approval: -	Effective from: 30/07/2013 Last date of update: 01/01/2020 Status: Issued
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 15/10/2003	Effective from: 12/11/2003 Last date of update: 01/01/2015 Status: Superseded By Variation

ID	Location	Address	Details	
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 24/08/2004	Effective from: 24/08/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 04/04/2008	Effective from: 04/04/2008 Last date of update: 01/01/2015 Status: Effective
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Superseded By Variation
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 01/12/1993	Effective from: 01/01/1994 Last date of update: 01/01/2015 Status: Superseded By Variation
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 11/10/1994	Effective from: 11/11/1994 Last date of update: 01/01/2015 Status: Superseded By Variation
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 23/08/1995	Effective from: 21/09/1995 Last date of update: 01/01/2015 Status: Superseded By Variation
B	172m E	Shrewsbury And Telford Hospital Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8XQ	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB7558 Date of approval: 10/07/2000	Effective from: 08/08/2000 Last date of update: 01/01/2015 Status: Superseded By Variation

ID	Location	Address	Details	
C	272m E	Shrewsbury And Telford Hospital Nhs Trust, Mytton Oak Road, Shrewsbury, SY3 8BR	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AA4413 Date of approval: 20/02/1992	Effective from: 20/02/1992 Last date of update: 06/01/2005 Status: Superseded By Variation
C	272m E	Shropshire Hospitals Nhs Trust, Royal Shrewsbury Hospital, Mytton Oak Road, Shrewsbury, SY3 8DN	Operator: Shropshire Hospitals Nhs Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AG5315 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled
C	272m E	Shrewsbury And Telford Hospital Nhs Trust, Mytton Oak Road, Shrewsbury, SY3 8BR	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AB7302 Date of approval: 31/10/1996	Effective from: 31/10/1996 Last date of update: 01/01/2015 Status: Superseded By Variation
C	272m E	Shrewsbury And Telford Hospital Nhs Trust, Mytton Oak Road, Shrewsbury, SY3 8BR	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AB7302 Date of approval: 24/08/2004	Effective from: 24/08/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
C	272m E	Shrewsbury And Telford Hospital Nhs Trust, Mytton Oak Road, Shrewsbury, SY3 8BR	Operator: Shrewsbury And Telford Hospital Nhs Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AB7302 Date of approval: 24/06/2008	Effective from: 24/06/2008 Last date of update: 01/01/2015 Status: Effective

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

4.13 Licensed Discharges to controlled waters

Records within 500m	**1**

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

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Address	Details	
7	318m SW	RACECOURSE LANE DEVELOPMENT SWS, RACECOURSE LANE, BICTON	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: S/02/08975/O Permit Version: 1 Receiving Water: RAD BROOK (RIVER SEVERN)	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 07/03/1983 Effective Date: 07/03/1983 Revocation Date: 20/12/1999

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m	**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m	**0**

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	6

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

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Details	
6	269m W	Incident Date: 02/10/2002 Incident Identification: 112029 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Animal and Vegetable Oil	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8	388m SW	Incident Date: 27/05/2002 Incident Identification: 81421 Pollutant: Agricultural Materials and Wastes Pollutant Description: Silage Liquors	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
9	427m SE	Incident Date: 10/03/2008 Incident Identification: 570017 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 2 (Significant) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
D	434m N	Incident Date: 27/12/2002 Incident Identification: 127753 Pollutant: Inorganic Chemicals/Products Pollutant Description: Other Inorganic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	474m N	Incident Date: 09/07/2001 Incident Identification: 14984 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
10	477m NE	Incident Date: 15/08/2002 Incident Identification: 100750 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

available.

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

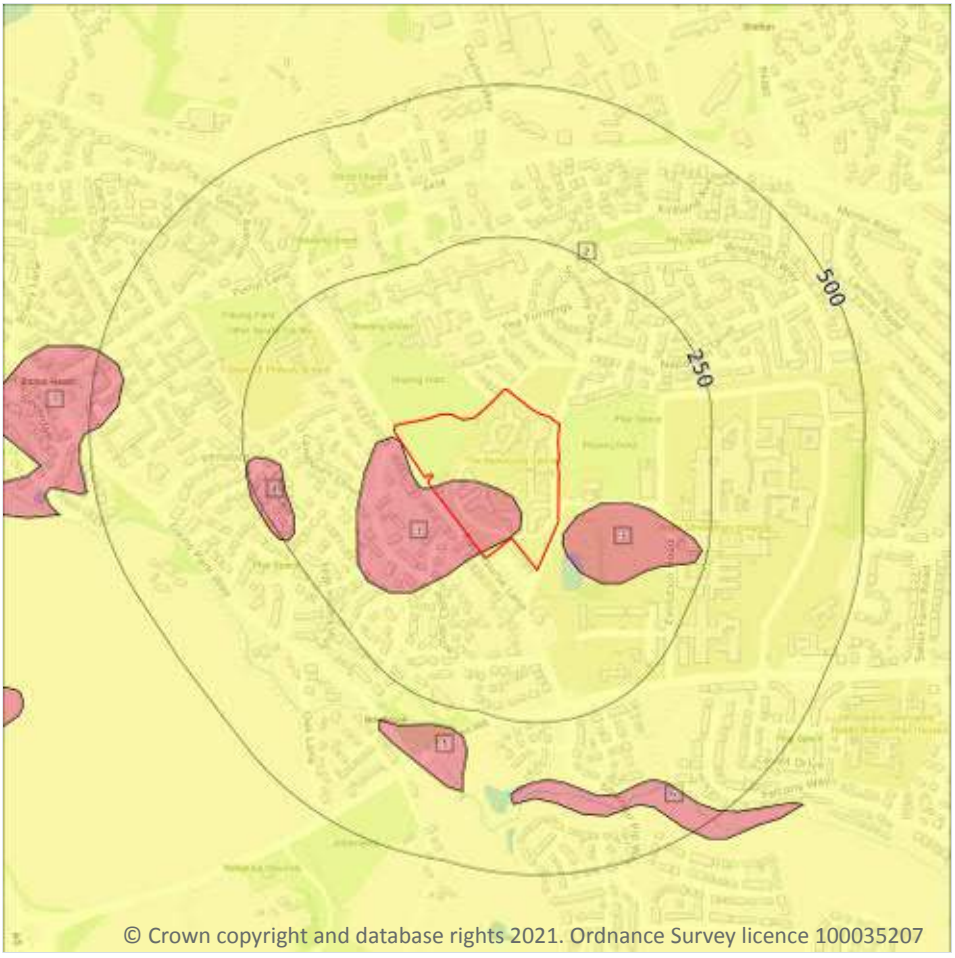
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m **7**

Aquifer status of groundwater held within superficial geology.

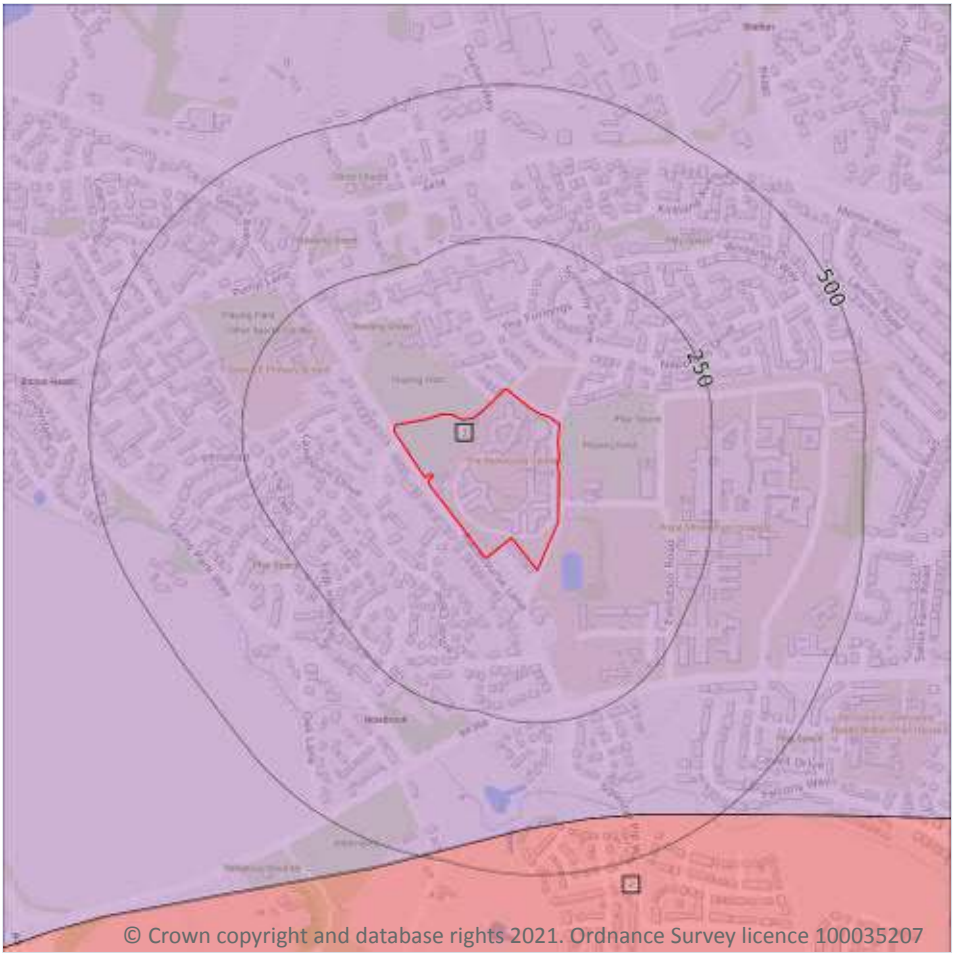
Features are displayed on the Hydrogeology map on **page 37**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**

ID	Location	Designation	Description
3	15m 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
4	194m W	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
5	284m S	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	344m S	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
7	452m W	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

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

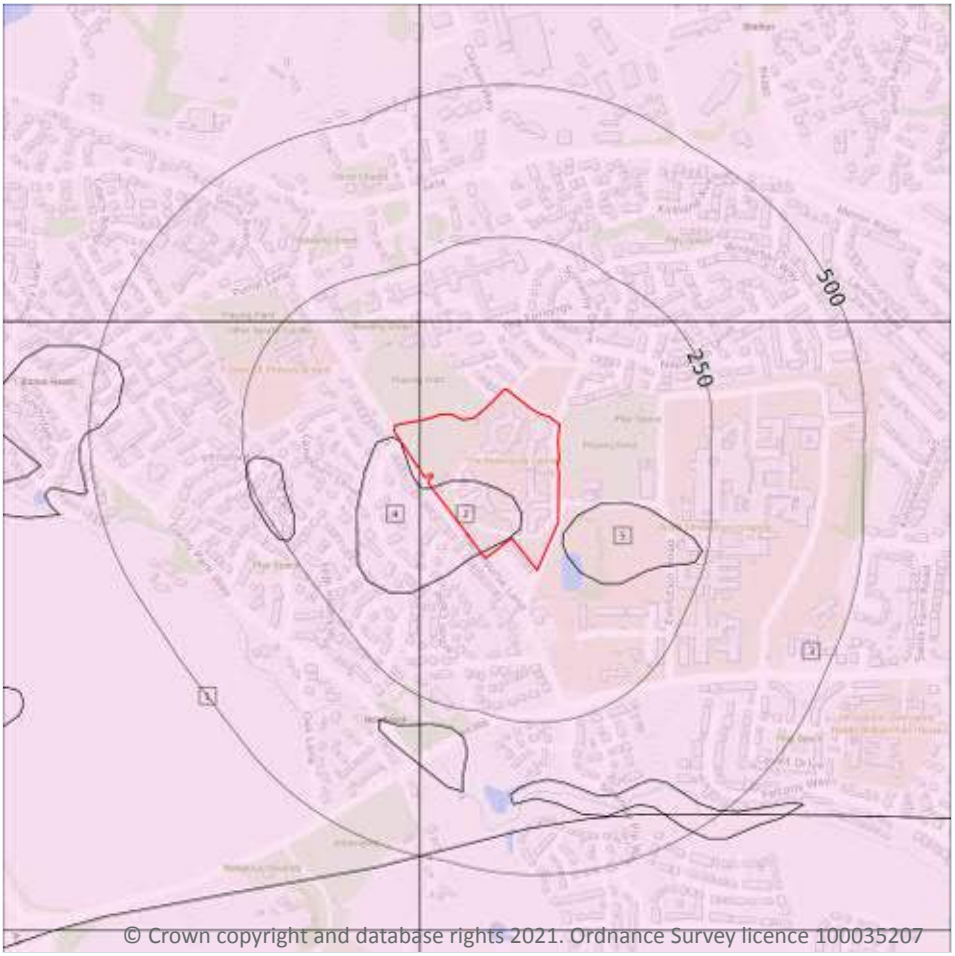
Aquifer status of groundwater held within bedrock geology.

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

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	416m S	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

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

Groundwater vulnerability



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Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	5

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

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

Features are displayed on the Groundwater vulnerability map on **page 41**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
3	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
4	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
5	15m SE	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones

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Site Outline

Search buffers in metres (m)

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

5.6 Groundwater abstractions

Records within 2000m	7

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Details	
-	744m N	Status: Active Licence No: MD/054/0002/008 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 1 ("A") Data Type: Point Name: Severn Trent Water Ltd Easting: 346372 Northing: 313596	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25,000 Original Application No: - Original Start Date: 03/08/2010 Expiry Date: 31/03/2022 Issue No: 3 Version Start Date: 22/10/2010 Version End Date: -
-	757m N	Status: Historical Licence No: 18/54/02/0635 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 1 Data Type: Point Name: SEVERN TRENT WATER LIMITED Easting: 346370 Northing: 313610	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25000 Original Application No: - Original Start Date: 01/04/2000 Expiry Date: 31/03/2010 Issue No: 2 Version Start Date: 14/06/2005 Version End Date: -
-	1112m N	Status: Historical Licence No: 18/54/02/0088 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: UDLINGTON FARM, BICTON - BOREHOLE Data Type: Point Name: MORRIS Easting: 346100 Northing: 314000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 09/06/1994 Version End Date: -
-	1322m SW	Status: Historical Licence No: 18/54/02/0629 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: WOODCOTE FARM, BOWBROOK, SHREWSBURY - BOREHOLE Data Type: Point Name: G & M LEWIS Easting: 345140 Northing: 311710	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/10/1999 Expiry Date: - Issue No: 1 Version Start Date: 21/10/1999 Version End Date: -
-	1430m N	Status: Historical Licence No: 18/54/02/0635 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 2 Data Type: Point Name: SEVERN TRENT WATER LIMITED Easting: 346370 Northing: 314300	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25000 Original Application No: - Original Start Date: 01/04/2000 Expiry Date: 31/03/2010 Issue No: 2 Version Start Date: 14/06/2005 Version End Date: -

ID	Location	Details	
-	1449m N	Status: Active Licence No: MD/054/0002/008 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHETON - BOREHOLE 2 ("B") Data Type: Point Name: Severn Trent Water Ltd Easting: 346369 Northing: 314319	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25,000 Original Application No: - Original Start Date: 03/08/2010 Expiry Date: 31/03/2022 Issue No: 3 Version Start Date: 22/10/2010 Version End Date: -
-	1993m S	Status: Historical Licence No: 18/54/02/0166 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: NEWTON FARM - WELL Data Type: Point Name: ROBERTS Easting: 346100 Northing: 310600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/09/1966 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**4**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Details	
-	1066m NE	Status: Active Licence No: 18/54/02/0020 Details: Potable Water Supply - Direct Direct Source: Surface Water Midlands Region Point: SHELTON ROUGHS - RIVER SEVERN INTAKE Data Type: Point Name: Severn Trent Water Ltd Easting: 346790 Northing: 313740	Annual Volume (m^3): 14,140,260 Max Daily Volume (m^3): 38,641 Original Application No: - Original Start Date: 22/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 01/04/2019 Version End Date: -

ID	Location	Details	
-	1491m NE	Status: Historical Licence No: 18/54/02/0649 Details: Spray Irrigation - Direct Direct Source: Surface Water Midlands Region Point: GRAVEL HILL FARM - RIVER SEVERN Data Type: Line Name: JC AND MW SUCKLEY Easting: 346680 Northing: 314300	Annual Volume (m^3): 60800 Max Daily Volume (m^3): 2200 Original Application No: - Original Start Date: 07/05/2002 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 07/05/2002 Version End Date: -
-	1848m N	Status: Active Licence No: 18/54/02/0578 Details: Spray Irrigation - Direct Direct Source: Surface Water Midlands Region Point: MONKMOOR & BICTON - RIVER SEVERN 1 Data Type: Line Name: G H DAVIES (FARMS) LTD Easting: 347070 Northing: 315420	Annual Volume (m^3): 17,400 Max Daily Volume (m^3): 820 Original Application No: - Original Start Date: 03/06/1994 Expiry Date: - Issue No: 100 Version Start Date: 03/06/1994 Version End Date: -
-	1999m E	Status: Historical Licence No: 18/54/02/0114 Details: Spray Irrigation - Direct Direct Source: Surface Water Midlands Region Point: BERWICK ROAD, SHREWSBURY - R SEVERN Data Type: Point Name: THE SHROPSHIRE & WEST MIDLANDS Easting: 348110 Northing: 313510	Annual Volume (m^3): 1200 Max Daily Volume (m^3): 250 Original Application No: - Original Start Date: 14/06/1966 Expiry Date: - Issue No: 101 Version Start Date: 09/10/2006 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**5**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Details	
-	744m N	Status: Active Licence No: MD/054/0002/008 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 1 ("A") Data Type: Point Name: Severn Trent Water Ltd Easting: 346372 Northing: 313596	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25,000 Original Application No: - Original Start Date: 03/08/2010 Expiry Date: 31/03/2022 Issue No: 3 Version Start Date: 22/10/2010 Version End Date: -
-	757m N	Status: Historical Licence No: 18/54/02/0635 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 1 Data Type: Point Name: SEVERN TRENT WATER LIMITED Easting: 346370 Northing: 313610	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25000 Original Application No: - Original Start Date: 01/04/2000 Expiry Date: 31/03/2010 Issue No: 2 Version Start Date: 14/06/2005 Version End Date: -
-	1066m NE	Status: Active Licence No: 18/54/02/0020 Details: Potable Water Supply - Direct Direct Source: Surface Water Midlands Region Point: SHELTON ROUGHS - RIVER SEVERN INTAKE Data Type: Point Name: Severn Trent Water Ltd Easting: 346790 Northing: 313740	Annual Volume (m^3): 14,140,260 Max Daily Volume (m^3): 38,641 Original Application No: - Original Start Date: 22/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 01/04/2019 Version End Date: -
-	1430m N	Status: Historical Licence No: 18/54/02/0635 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHELTON - BOREHOLE 2 Data Type: Point Name: SEVERN TRENT WATER LIMITED Easting: 346370 Northing: 314300	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25000 Original Application No: - Original Start Date: 01/04/2000 Expiry Date: 31/03/2010 Issue No: 2 Version Start Date: 14/06/2005 Version End Date: -
-	1449m N	Status: Active Licence No: MD/054/0002/008 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: SHETON - BOREHOLE 2 ("B") Data Type: Point Name: Severn Trent Water Ltd Easting: 346369 Northing: 314319	Annual Volume (m^3): 4,745,000 Max Daily Volume (m^3): 25,000 Original Application No: - Original Start Date: 03/08/2010 Expiry Date: 31/03/2022 Issue No: 3 Version Start Date: 22/10/2010 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**
2	255m N	2	Outer catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	1

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

Features are displayed on the Hydrology map on **page 50**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 50**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Severn - conf Bele Bk to conf Sundorne Bk**	**GB109054049142**	**Morda and Severn North Shropshire**	**Severn Uplands**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 50**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	994m NE	River	Severn - conf Bele Bk to conf Sundorne Bk	GB109054049142	Moderate	Fail	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	2

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

Features are displayed on the Hydrology map on **page 50**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Shropshire Middle Severn - PT Sandstone East Shropshire**	**GB40901G300100**	**Poor**	**Poor**	**Poor**	**2015**
A	**On site**	**Shropshire Middle Severn - PT Sandstone East Shropshire**	**GB40901G300100**	**Poor**	**Poor**	**Poor**	**2016**

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

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

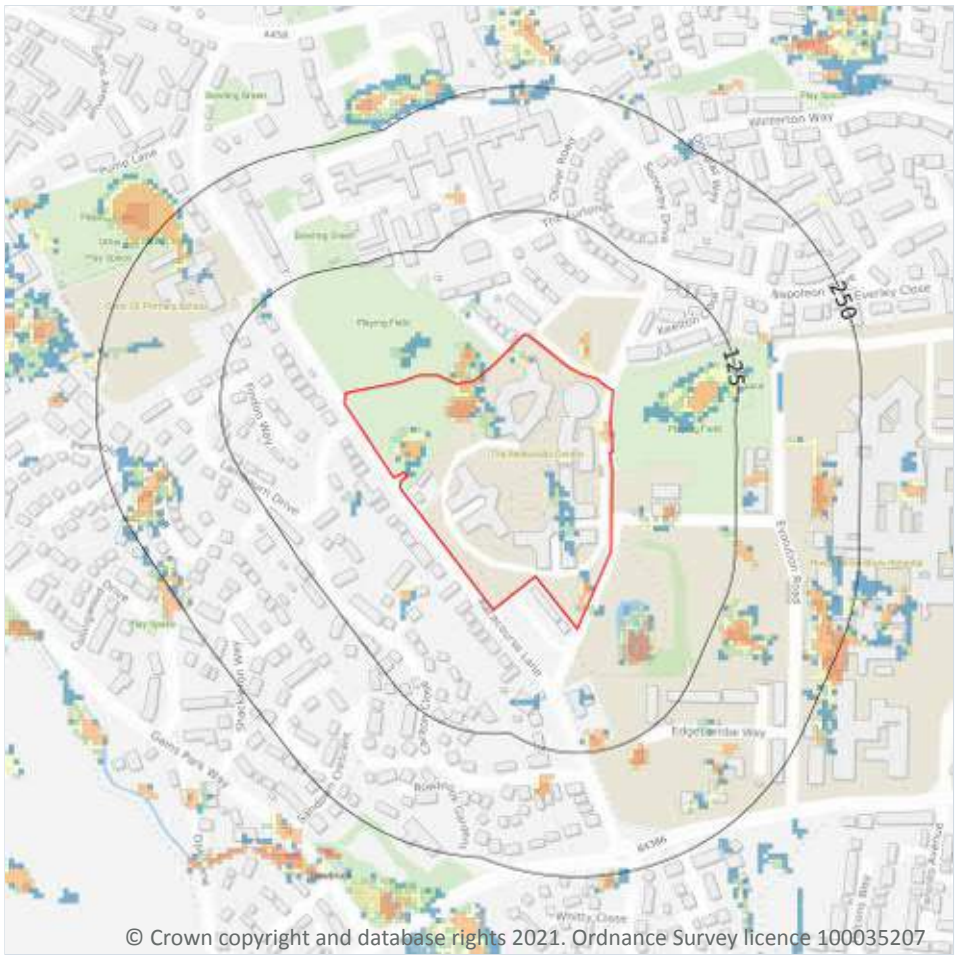
7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline
Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 56**

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

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Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

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

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

Features are displayed on the Groundwater flooding map on **page 58**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	4

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

Features are displayed on the Environmental designations map on **page 59**

ID	Location	Name	Woodland Type
1	1717m SW	Woodcote Coppice	Ancient Replanted Woodland
2	1756m SW	Woodcote Coppice	Ancient Replanted Woodland
3	1760m SW	Woodcote Coppice	Ancient & Semi-Natural Woodland
-	1934m SW	Woodcote Coppice	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

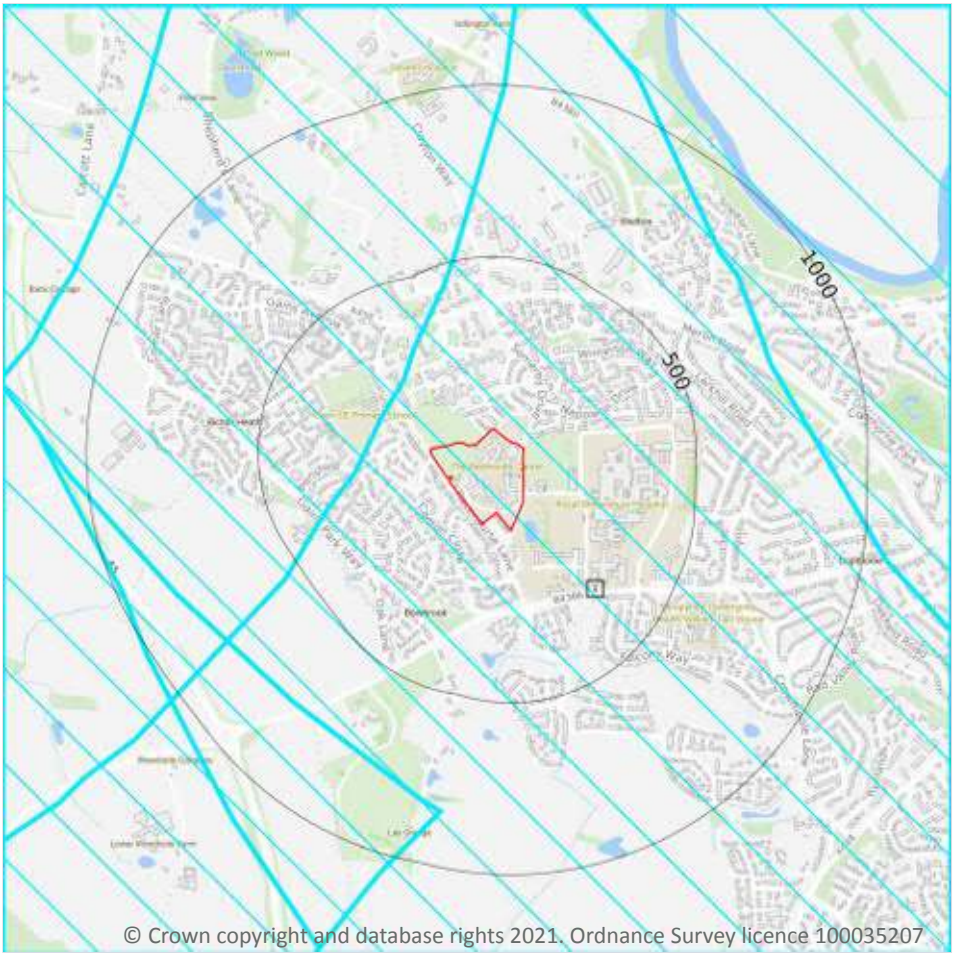
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 64**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t)** **Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**0**

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

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

11 Visual and cultural designations

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Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	2

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

Features are displayed on the Visual and cultural designations map on **page 66**

ID	Location	Name	Grade	Reference Number	Listed date
1	98m NW	Chapel At Shelton Hospital, Shrewsbury, Shropshire, SY3	II	1255091	06/04/1993
2	184m NW	Shelton Hospital, Shrewsbury, Shropshire, SY3	II	1270532	06/04/1993

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations

Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	3

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

Features are displayed on the Agricultural designations map on **page 69**

ID	Location	Classification	Description
1	On site	Grade 3	**Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.**

ID	Location	Classification	Description
2	46m SW	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.
3	231m S	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

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Site Outline

Search buffers in metres (m)

- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders

Habitat Networks

- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	**1**

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

Features are displayed on the Habitat designations map on **page 72**

ID	Location	Main Habitat	Other habitats
1	246m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 74**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**No coverage**	**No coverage**	**No coverage**	**NoCov**

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability

Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

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

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW152_shrewsbury_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

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Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **7**

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 80**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFDUD-XSV**	**GLACIOFLUVIAL DEPOSITS, DEVENSIAN**	**SAND AND GRAVEL**
2	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
3	15m SE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
4	194m W	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
5	284m S	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
6	344m S	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
7	452m W	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	**3**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Very High**	**High**
On site	**Mixed**	**High**	**Low**
15m SE	Intergranular	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

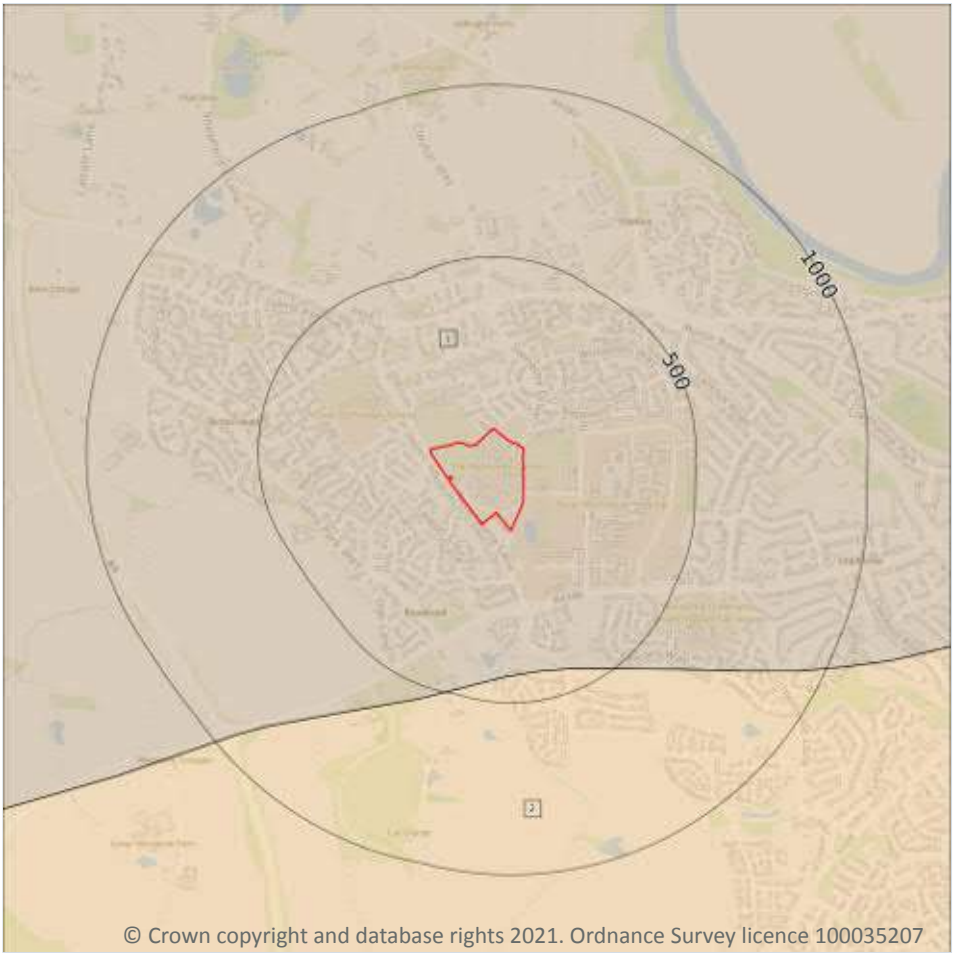
15.7 Landslip permeability (50k)

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



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Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	2

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 82**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**KNSF-SDST**	**KINNERTON SANDSTONE FORMATION - SANDSTONE**	**-**
2	416m S	SAL-MDSC	SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

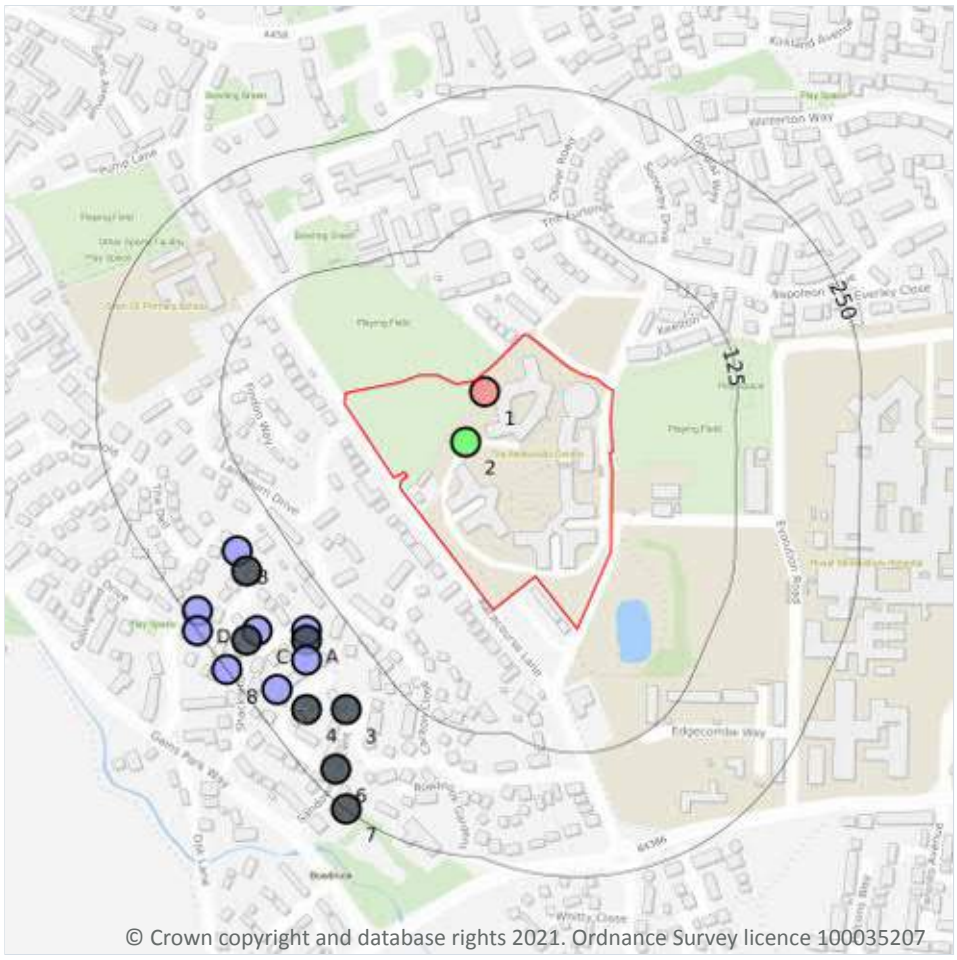
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



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Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	17

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

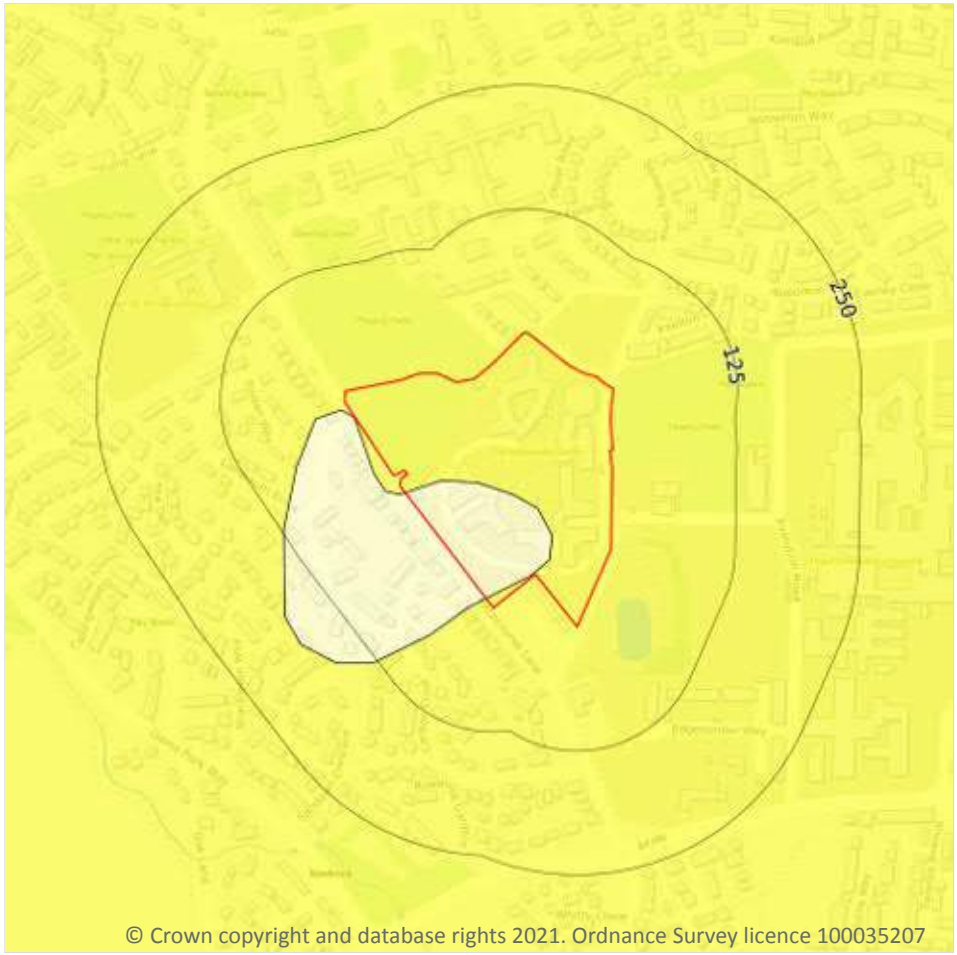
Features are displayed on the Boreholes map on **page 84**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	**On site**	**346100 312830**	**BICTON HEATH ASYLUM**	**57.91**	**N**	**162294**
2	**On site**	**346080 312780**	**COPTHORNE SHREWSBURY**	**13.0**	**N**	**162392**
A	162m SW	345920 312590	BOWBROOK PHASE 2 TP 207	2.0	N	162508

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	168m SW	345920 312580	BOW BROOK SHREWSBURY TP103	-	Y	N/A
B	173m SW	345850 312670	BOWBROOK PHASE 2 TP 201	3.0	N	162503
B	175m SW	345860 312650	BOW BROOK SHREWSBURY TP104	-	Y	N/A
3	179m SW	345960 312510	BOW BROOK SHREWSBURY TP102	-	Y	N/A
A	180m SW	345920 312560	BOWBROOK PHASE 2 TP 206	1.0	N	162507
C	202m SW	345870 312590	BOWBROOK PHASE 2 TP 208	2.0	N	162509
4	211m SW	345920 312510	BOW BROOK SHREWSBURY TP113	-	Y	N/A
C	216m SW	345860 312580	BOW BROOK SHREWSBURY TP106	-	Y	N/A
5	222m SW	345890 312530	BOWBROOK PHASE 2 TP 204	2.0	N	162506
6	226m SW	345950 312450	BOW BROOK SHREWSBURY TP101	-	Y	N/A
D	239m SW	345810 312610	BOWBROOK PHASE 2 TP 202	2.0	N	162504
7	250m SW	345960 312410	BOW BROOK SHREWSBURY TPB	-	Y	N/A
D	250m SW	345810 312590	MYTTON OAK ROAD PHASE 2 TP 251	2.0	N	15934475
8	250m SW	345840 312550	BOWBROOK PHASE 2 TP 203	3.0	N	162505

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

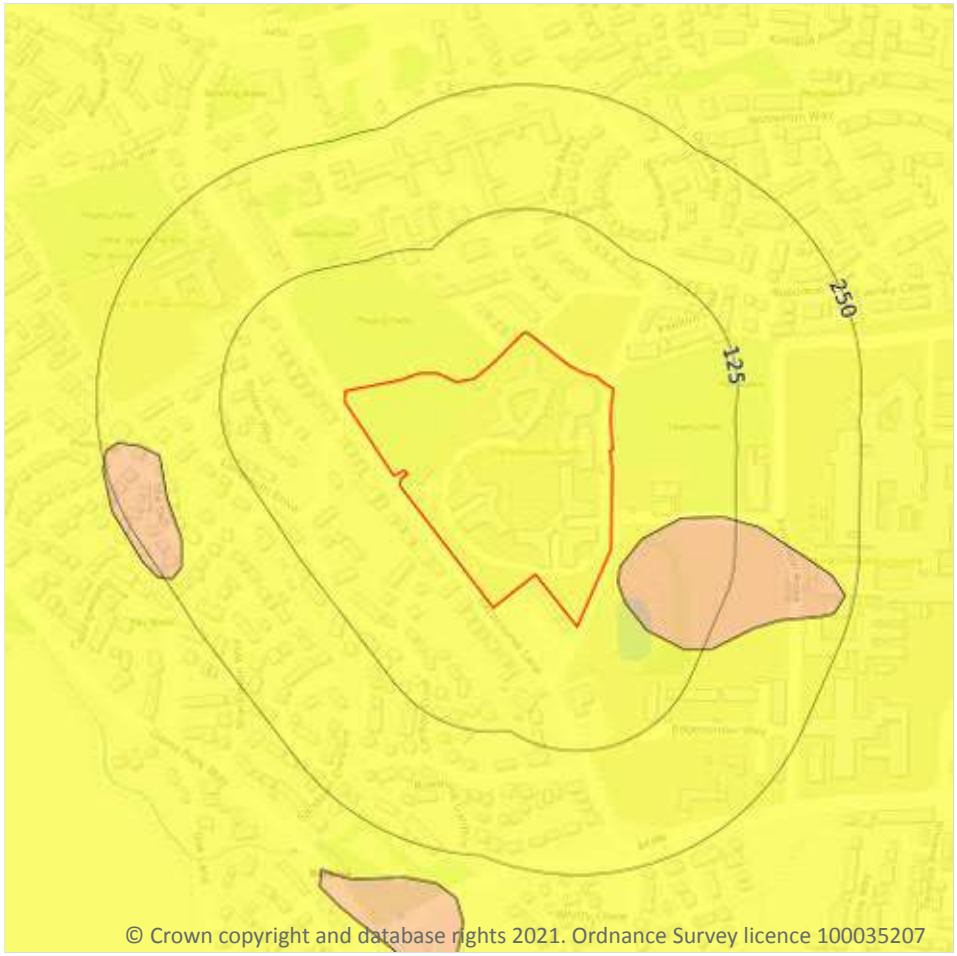
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 86**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	2

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

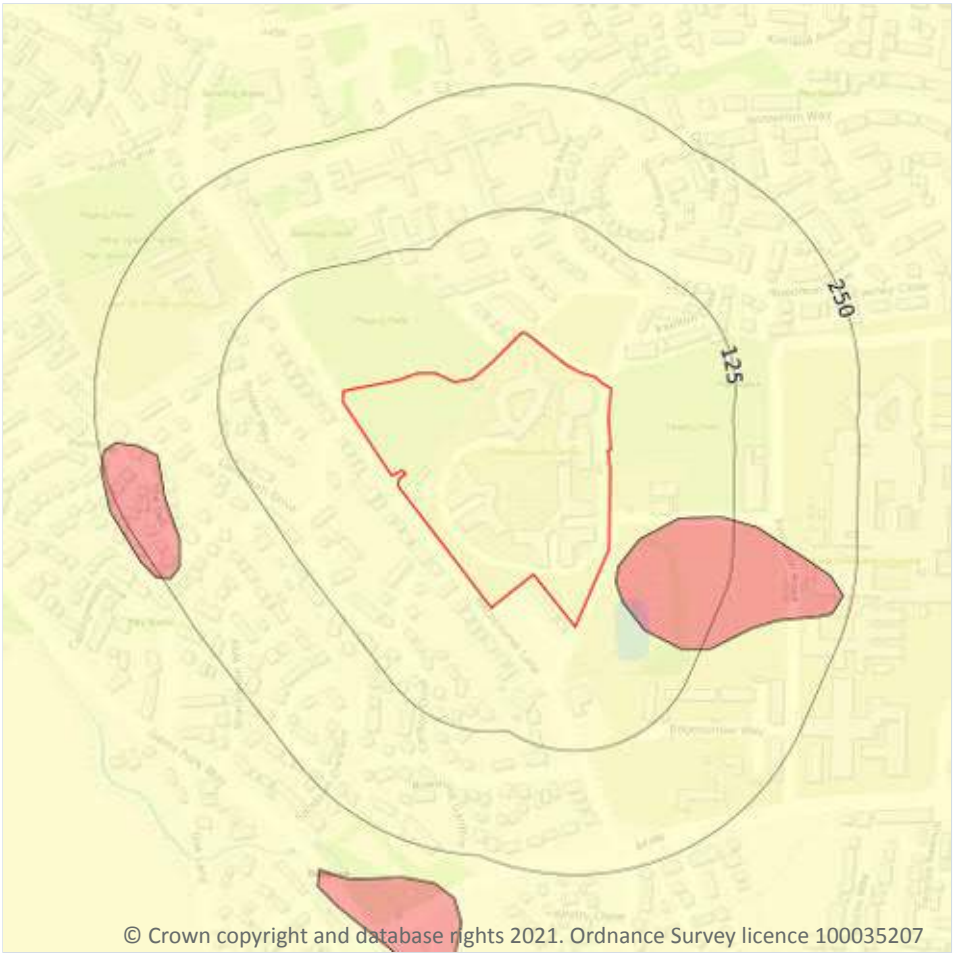
Features are displayed on the Natural ground subsidence - Running sands map on **page 87**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

Location	Hazard rating	Details
15m SE	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	2

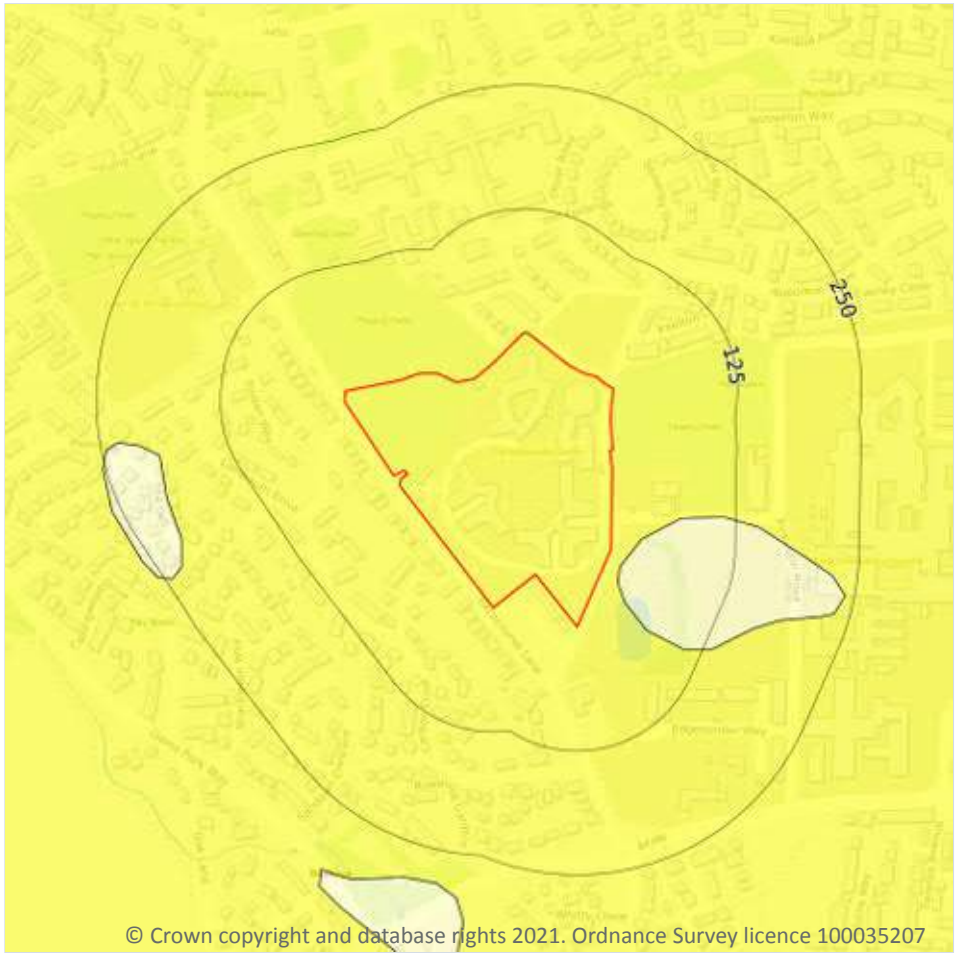
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 89**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**
15m SE	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	2

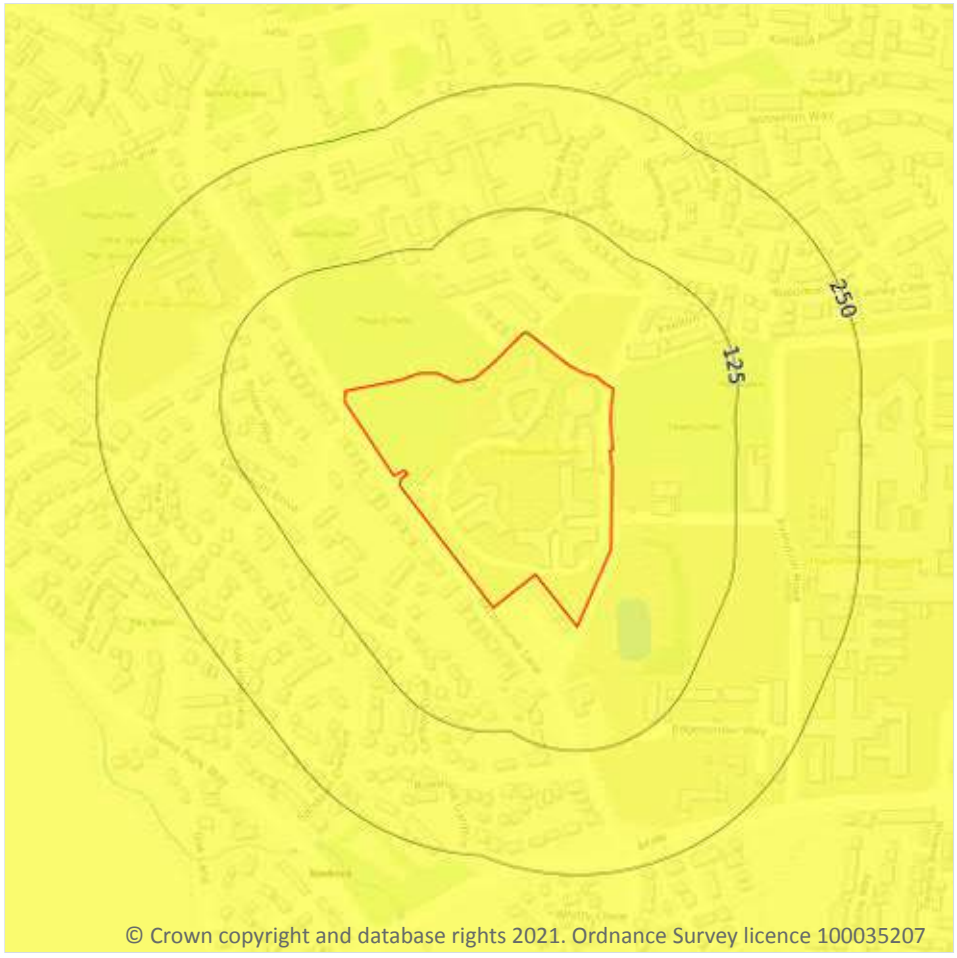
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 91**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**
15m SE	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

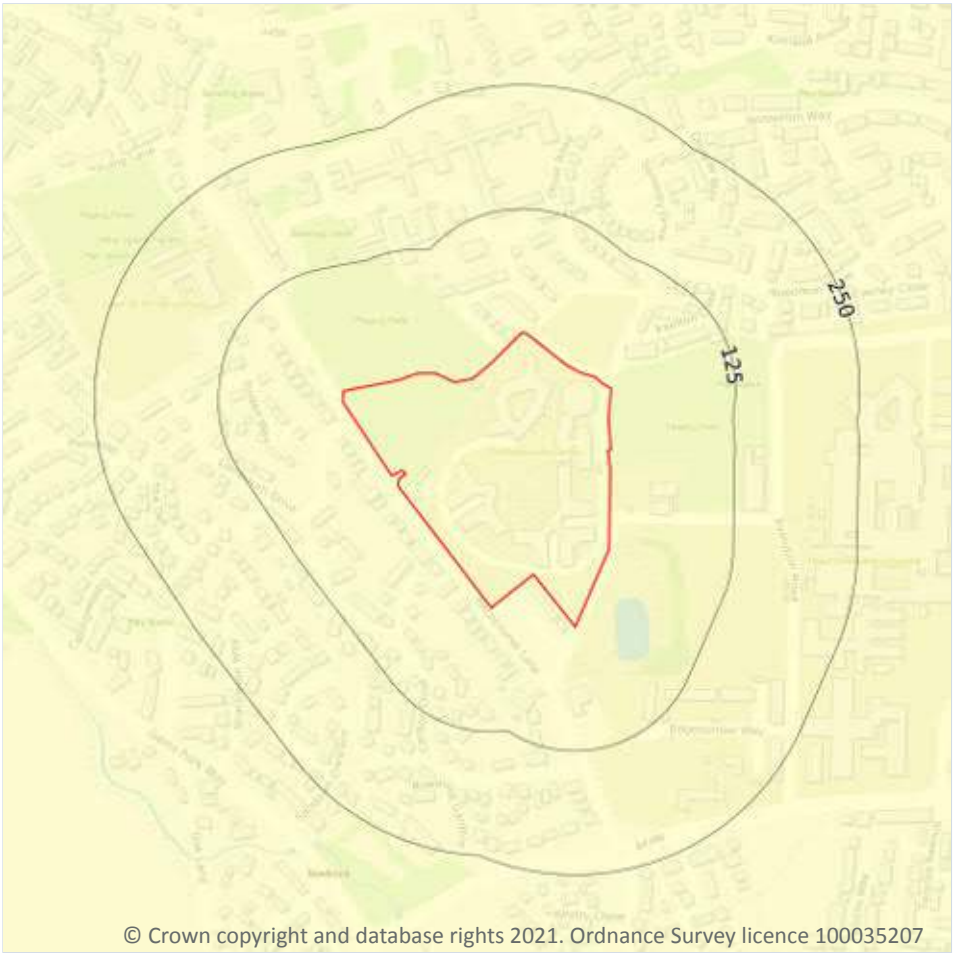
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 92**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

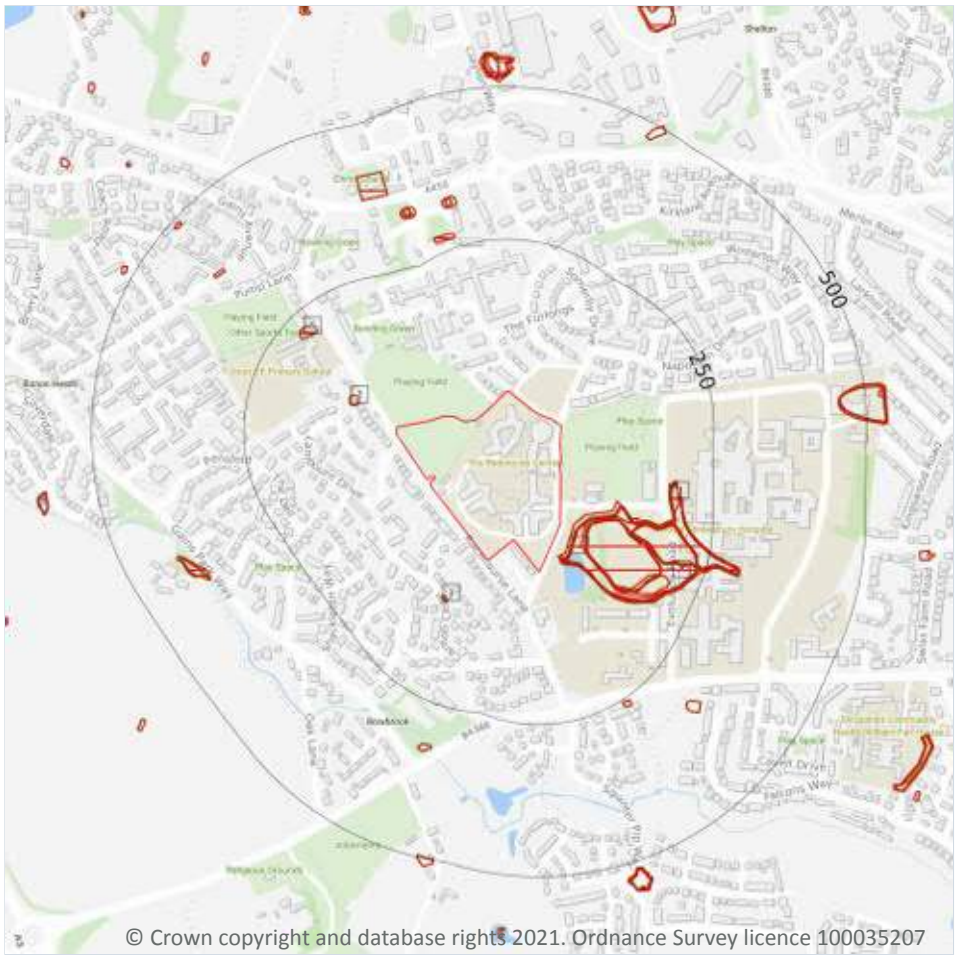
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 93**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	10

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 94**

ID	Location	Land Use	Year of mapping	Mapping scale
1	18m SE	Pond	1969	1:10560
A	23m SE	Pond	1954	1:10560
A	24m SE	Water Body	1938	1:10560
A	24m SE	Water Body	1925	1:10560
A	24m SE	Water Body	1901	1:10560
A	24m SE	Water Body	1881	1:10560
2	75m NW	Pond	1901	1:10560
3	92m SW	Pond	1901	1:10560
4	178m E	Pond	1969	1:10560
5	204m NW	Pond	1901	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	1

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

Location	Details
On site	**Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) may have information such as mining plans and maps held within their archive that have occurred within 1km of this property. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) can be obtained by emailing this report to enquiries.gs@jpb.co.uk.**

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

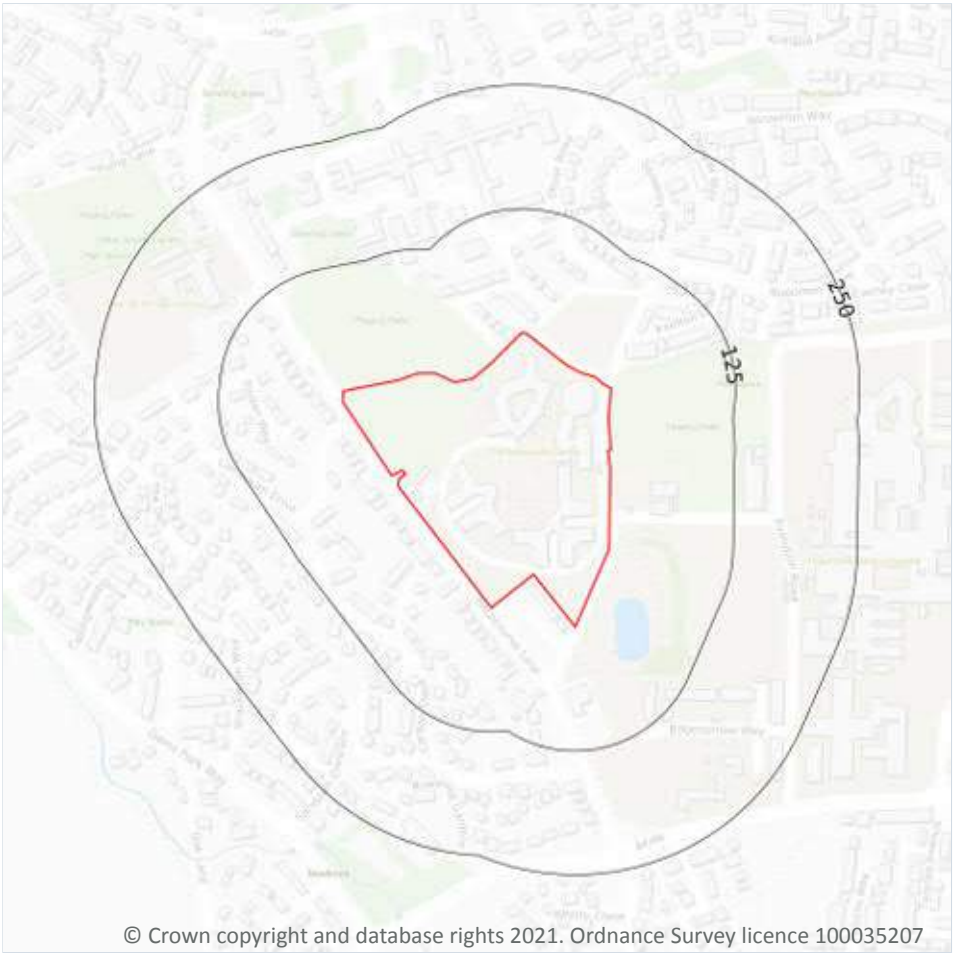
18.13 Clay mining

Records on site	0

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

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

19 Radon



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Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 98**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	5

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
1m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
15m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

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