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LAND AT THE FORMER ALBION WORKS, HUNNINGLEY LANE, STAIRFOOT, BARNSLEY, SOUTH YORKSHIRE, S70 3DY



PHASE 1 PRELIMINARY GEO-ENVIRONMENTAL RISK ASSESSMENT

Prepared by

SILKSTONE ENVIRONMENTAL LTD

For

PETER THOMPSON ARCHITECTURAL DESIGN CONSULTANT LTD

On behalf of

C SOAR & SONS LTD

SEPTEMBER 2020

Report Ref: 20155/P1/0

DOCUMENT ISSUE RECORD

Project No.	20155
Client	Peter Thompson Architectural Design Consultant Ltd on behalf of C Soar & Sons Ltd
Project	Land at the former Albion Works, Hunningley Lane, Stairfoot, Barnsley, S70 3DY
Document Title	Phase 1 Preliminary Geo-Environmental Risk Assessment

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REVISION RECORD

Revision	Date	Description	Prepared by
0	11/09/2020	Phase 1 Preliminary Geo-Environmental Risk Assessment	AJA/NFP

EXECUTIVE (NON-TECHNICAL) SUMMARY

Silkstone Environmental Ltd (SEL) have carried out a Phase 1 Preliminary Geo-Environmental Risk Assessment (Desk Study Report) for land at the former Albion works, Hunningley Lane, Barnsley, for Peter Thompson Architectural Design Consultant Ltd on behalf of C Soar & Sons Ltd (the Client).

The Client proposes to develop the site as a haulage/transport depot including two buildings to be utilised for garaging and storage and a yard area for the storage of skips and vehicles. The client has submitted a planning application to Barnsley Metropolitan Borough Council (2020/0289) and SEL have been appointed to inform the design.

This section summarises the findings of the report and makes recommendations regarding further work. It should be read in conjunction with the whole report to gain a full understanding of the conclusions reached.

Following a review of current and historic land uses both on site and within the surrounding area, this assessment has derived an overall risk rating of **Low to Moderate**. The risk mainly relates to construction workers and end users from the release of potential contaminative materials during the previous demolition of the buildings on site, potential ground contamination associated with the former use of the site as an engineering works and for the storage of scrap metals and from historical uses within the surrounding area.

It is recommended that a Phase 2 intrusive site investigation is undertaken to assess the contamination status of the site with respect to its past land use.

Phase 2 Geo-Environmental Site Investigations

- Window sampling and trial pitting to assess the contamination status of the site and provide geotechnical information relating to the underlying soils in order to provide ground bearing information for the proposed development (SPTs).
- Gas monitoring wells should be installed in the window sampling locations to assess the risk from ground gases. These locations would usually be monitored for six visits over a minimum period of three months. Following this, the Initial Environmental Risk Assessment would be reappraised.
- Representative soil samples should be recovered from the window sampling locations, which should be sent for appropriate contamination analysis and any groundwater encountered should be sampled and tested for a similar range of contaminants.

Ground Gas Risk

CIRIA Report C665 (Ref. F) identifies the potential sources of hazardous ground gases that may be generated from infilled land or other sources, and provides guidance on assessing the risk from these features. It is normal practice within the industry that where potentially infilled land occurs within 250m of a site, it should be assessed for risk from ground gas.

This report has identified the risk of ground gases from a small area of landfill (65-89m N), an infilled former water reservoir (49-57m E), an unspecified heap (104m E) and the presence of a reworked former railway embankment on the eastern boundary. Having considered these factors, it is recommended that gas monitoring be installed as part of the phase 2 investigation.

Coal Mining Legacy Issues

SEL consider that the site is not at risk from legacy coal mining activities.

Flood Risk

The site is located within a Flood Zone 1 (low probability of flooding) and the site is less than 1ha. SEL consider that under normal circumstances, an independent flood risk assessment should not be required for the site.

Other Factors

Should the use of plastic pipes or other materials be proposed for underground services as part of the redevelopment works, it should be noted that soil sampling requirements can vary between different service providers. For this reason prior to fully commissioning any ground investigation, it is recommended that the Client agrees any additional sampling requirements that may be required with each service provider.

Prior to intrusive site investigations, records of services should be obtained to accurately locate the existing services on site. Services should be protected in order to prevent damage by drilling or use of excavation equipment.

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KEY REFERENCES

A Contaminated Land Report (CLR) 11 '*Model Procedures for the Management of Land Contamination*' published by the Environment Agency (September 2004).
B Guiding Principles for Land Contamination, Environment Agency (March 2010).
C Town and Country Planning Act 1990.
D National Planning Policy Framework (July 2018).
E Revised Statutory Guidance dated April 2012 implementing the contaminated land provisions under Part 2A of the Environmental Protection Act 1990.
F CIRIA 665 *'Assessing Risks Posed by Hazardous Ground Gases to Buildings'* (2007).
G BR 211 *Radon, Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects)*, BRE, 2015.
H CIRIA Report C758D, Abandoned mine workings manual, CIRIA, 2019.

1.0 INTRODUCTION

1.1 Brief

Silkstone Environmental Ltd (SEL) has prepared this report following an email instruction from Peter Thompson Architectural Design Consultant Ltd (PT), on behalf of C Soar & Sons Ltd (the Client), dated 18th August 2020.

The Client has sought outline planning permission for the erection of a haulage transport depot on the site, which includes two buildings (for garaging and storage), a yard, and areas for the storage of skips, trailers and the maintenance of vehicles. Barnsley Metropolitan Borough Council (BMBC) are considering the application and Silkstone Environmental Ltd (SEL) have been appointed to undertake a desk study to inform the design process.

The stated purpose of this work is to carry out a Phase 1 Preliminary Geo-Environmental Risk Assessment (also known as a Desk Study Report) for the site, which will assess the potential for historic contamination at the site which may adversely impact upon human health and/or the wider environment. Geotechnical issues have also been considered and a review made of the potential for instability at the surface from former coal mining legacy operations. The report has been compiled in general accordance with Refs. A & B as a 'Preliminary Risk Assessment', as defined therein.

This preliminary assessment will highlight the potential requirements for further assessment via an intrusive investigation if considered appropriate. This has been determined based on the following:

- A description of the site showing location and layout.
- A review of the site history including previous surrounding land uses.
- Determination of the environmental setting by reference to geology, mining / quarrying, hydrology, flood risk, hydrogeology, risks associated with hazardous gases (such as radon, landfill gas, mine gas), proximity to infilled ground, permitted industrial processes and other activities such as Control of Major Accident Hazard (COMAH) and explosive sites.
- A site walkover and inspection.
- An assessment of anticipated ground conditions including potential contaminants.
- An assessment of anticipated foundation and engineering issues associated with any redevelopment.
- An inspection of historical and geological maps and information provided by the Local Planning Authority, Environment Agency, British Geological Survey and the Coal Authority, as appropriate.
- A risk assessment in the context of the proposed development of the site based on an appraisal of the potential contamination sources, pathways and receptors in an outline conceptual site model.

Conclusions are given alongside any further recommendations. No other site investigations are known, or have been made available to SEL.

1.2 Legislative and Regulatory Context

If land proposed to be developed is suspected of being contaminated either historically or by its current use, an investigation will be requested by the Local Authority under the Town and Country Planning Act (1990) (Ref. C) and the National Planning Policy Framework (Ref. D) to determine the level of risk and if remediation is necessary or whether there may be grounds for the land to be considered contaminated under Part 2A of the Environmental Protection Act 1990 (Ref. E). Under this regime investigations are carried out to determine if the current condition of the site is suitable for its proposed use.

1.3 Guidance and Information Sources Used Within This Report

This report has been produced in line with relevant guidance and best practice and in particular references A, B, C, D, E, F, G and H. This list includes all of the cited references. It is not exhaustive and comprises only the principal references used in conducting this risk assessment.

1.4 Report Limitations

The conclusions reached in this report are necessarily restricted to those which can be determined from available information and may be subject to amendment in the light of additional information becoming available or to changes in relevant legislation.

This report is strictly confidential to the party to whom it is addressed and may only be relied upon by that party or their other professional advisors, for the specific purpose to which it refers. Any third party using this report does so entirely at their own risk and SEL accepts no responsibility or liability for any costs, claims, damages or expenses (including consequential damages) as a result of this report or any part of its contents being used by any third party.

Except in connection with the specific purpose for which this report has been prepared, neither the whole nor any part of this report, nor any reference thereto, may be included in any published document, circular or statement, nor published in any way, nor disclosed orally to a third party, without the written approval from SEL of the form and context of such publication or disclosure. Such approval is required whether or not SEL are referred to by name and whether or not the report is combined with others.

SEL are unaware of any conflicts of interest in the preparation of this report.

2.0 ENVIRONMENTAL SETTING

2.1 Site Location

The area under consideration is located in the suburb of Stairfoot, approximately 2.9km south east of Barnsley town centre. The site location is shown on the plan presented as Figure 1 in Appendix A. The site boundary is also shown on the existing and proposed layout plans supplied by PT in Figure 2.

The National Grid Reference (NGR) for the centre of the review area is 437170, 405380. The site is approximately 0.63ha in area and situated at an approximate height of 55-57m Above Ordnance Datum (AOD).

2.2 Historical Land Use

Information relating to the historical uses of the site and surrounding area has been determined from a review of the following:

- The large scale (1:1250 and 1:2500) and small scale (1:10,560 and 1:10,000) historical Ordnance Survey maps dating from 1850 to 2020 (Appendix B); and
- A Groundsure environmental data report for the site (Appendix C).

It is important to note that any date referred to in this section refers to the date a feature appears on the map, not necessarily the date the actual feature was first present. Additionally, the marked site boundary may appear to move with respect to successive editions. This is predominantly due to minor variations in the Ordnance Survey (OS) with time.

OS maps record a site located within a mixed residential and industrial area. A summary of the features noted from the historical mapping is provided in Table 1 and described below.

Within the Site

Earliest mapping (1850) shows the site to be undeveloped, existing as part of a field. Development had begun on site by 1904 with the construction of a railway embankment along the outside of the eastern boundary. The line continued to be active until 1966 when it became disused before being dismantled (by 2001).

Industrial activity had appeared by 1960 with a localised area of earthworks where the Albion works eventually was located. A small building of unspecified use is present in the north east part of the site, but had been removed by 1972-74. The Albion works is first described as an Engineering Works on the 1972-74 plan and is identified as 'Works' on all subsequent plans.

A bungalow had been built on the southern part of the site by 1972-74 with two small ancillary buildings in the western corner of the site. A second building had been constructed immediately south east of the bungalow by 1982-87, both continuing to be present on subsequent plans.

Table 1: Historic Land Uses of the Site and Surrounding Area

Date	Scale	On Site	Surrounding Area
1850/54	1:10,560	Undeveloped field.	Mainly rural, reservoir 49-57m SE & nursery 2m SW. Bleach & dye works 45m NE. Reservoir 64m SE. Tanning yard 110m N. Sandstone quarries 442m NE & 500m S. Canal 79-101m E.
1890/94	1:10,560	No significant change.	Hope glass works 600m NNW. Residential properties NW perimeter. New Oaks Colliery 210m E. Railway infrastructure 183-204m N & NE.
1892/93	1:2,500		No significant change.
1904	1:10,560	Railway embankment E perimeter.	Manor Flint glass works 204m E. Railway lines E perimeter & 150m W.
1906	1:2,500	No significant change.	No significant change.
1929/32	1:10,560		Oaks chemical plant 450m E.
1931	1:2,500		No significant change.
1938	1:10,560		
1948	1:10,560		Clay pit 397E &475m E.
1951/55	1:10,560		No significant change.
1960	1:2,500	Small building in NE. Small area of earthworks NW (Albion works).	Clothing factory 100m N.
1960/61	1:1,250	No significant change.	No significant change.
1966	1:10,560		Residential encroachment to W complete.
1972/74	1:1,250	Engineering works built NW perimeter. Bungalow built S perimeter. 2 small building W corner. Small building NE disappeared.	Water reservoir removed and replaced with large warehouse 26-31m E.
1974/77	1:10,000	No significant change.	Foundry 71m N.
1982/87	1:1,250	Second building immediately SE of bungalow.	Redevelopment of former residential land for light industry 100m N.
1982/87	1:10,000	No significant change.	No significant change.
1987/92	1:10,000		Superstore 450m SE.
1990/93	1:1,250	Extra building in W corner.	No significant change.
2001	1:10,000	Railway embankment not shown	
2003	1:1,250	No significant change.	
2010	1:10,000		Waste depot 700m N.
2020	1:10,000		No significant change.

Surrounding Area

Earliest OS maps (1850) show the site to be located in a predominantly rural area with a manmade reservoir 64m to the south east and a (botantic) nursery 2m to the south west.

Industrial activity was already established close to the site in the form of a bleach & dye works (45m NE), a tanning yard (110m N) and two sandstone quarries (480m NE & 500m S), but these were short lived, being absent on subsequent plans.

Major industrial development commenced in the 1890s with the construction of Hope glassworks, (600m NNW) and New Oaks Colliery (210m E). Further industrialisation in the early/mid twentieth century included Manor Flint glass works (204m E), Oaks chemical plant (450m E), clay pits (397 & 475m E) and a clothing factory (100m N). None of these activities survived into the twenty first century.

Residential encroachment towards the site had commenced by 1890-94 with the construction of terraced housing immediately to the west and was mainly complete by 1966. Much of the housing to the north of the site was redeveloped in the 1980s and replaced by industrial units.

Railways are shown on plans from the late nineteenth/early twentieth centuries and included the Stairfoot & Cudworth line (immediately east) and at a further distance, the Chapeltown branch extension (165m SW), the Barnsley to Doncaster line and the Barnsley coal extension line (200m N). Some of these lines closed in the late 20th century, associated with the demise of the coal industry, but the Chapeltown branch extension line is still open.

2.3 Site Description

A site walkover was carried out by a SEL representative on 1st September 2020 in dry weather conditions and a photographic record from this is presented in Appendix D. SEL understand the site was sold at auction in August 2019 and the Albion engineering works and the Bungalow demolished thereafter.

The site is easily accessed from Hunningley Lane adjacent to a vehicle MOT Centre. The site is secure, being surrounded by metal fencing and brick walls. SEL have been informed that the site has been formerly used as a storage area for scrap metal.

The site is located immediately south of Hunningley Lane in the suburb of Stairfoot. The review area is bounded to the north by Hunningley Lane, to the west by a MOT Centre, to the south by residential properties and to the east by a former railway embankment, beyond which is a B&Q Superstore, now closed and taken over by Sainsbury's.

On-site topography is gentle, dipping from a high of approximately 57m AOD on the southern site boundary adjacent to the MOT Centre, to a low of approximately 55m AOD in the north eastern corner.

The site can be divided into four areas:

1. ***The former Albion works***, an engineering works, which has now been demolished, the only remaining evidence being an area of concrete hardstand adjacent to the north western boundary. A metal storage container was located on the hardstand at the time of the visit.
2. ***A bungalow and associated outbuildings area*** on the southern perimeter, all of which have now been demolished. The remains comprise a mixture of block paving, concrete and asphalted hardstand. A stockpile of clay material is located immediately south of the former bungalow.
3. ***An asphalted car parking area*** adjacent to the MOT Centre at the site access point. An area containing 10 pallets of stone blocks (similar to that used in stone walls) is located adjacent to the wall of the MOT Centre.
4. ***An area of rough, compacted ground*** east of the former Albion works. This area is currently being utilised to store materials including a stockpile of turf and limestone, skips, metal storage shelving, and an empty cable reel. C Soar and Sons Ltd are utilising an area adjacent to the eastern boundary (north end), to store ferrous/non-ferrous metals, cables and miscellaneous electrical items in skips. Some surface water has collected in the south eastern part of this area.

A former railway embankment extends along the eastern boundary comprises which has been reworked and substantially flattened, and now consists of a fenced, mature hedgerow screening the site from the former superstore.

There was no obvious evidence of invasive plants such as Japanese knotweed, Giant hogweed etc on site, nor evidence of vegetation dieback, discoloured ground, or seepage of ochrous or discoloured liquids.

There was no obvious evidence of former shafts, adits or heaps in the locality.

With respect to services, no overhead services were evident. The presence/absence of underground services is not known.

The surrounding area consists of a MOT Centre (western boundary, a former railway embankment (eastern boundary) and residential properties (southern boundary).

2.4 Geology

An assessment of the artificial ground, superficial and solid (bedrock) geology relating to the site and past mining has been gained from various sources and are summarised in Table 2 below:

Table 2: Geological Summary

Maps / Publications Referenced	BGS 1:50,000 Sheet 87 (Barnsley), Superficial and Bedrock dated 2008. BGS Geology of Britain Viewer, BGS lexicon of named rock units and BGS Onshore Geoindex webpages. Groundsure Enviro & Geo Insight Report GS-6992815 (Appendix C). Coal Authority Interactive Viewer website.
Artificial Ground	Made Ground on site (eastern edge, former railway embankment).
Superficial Deposits & Landslips	No superficial deposits recorded on site, alluvium clay and silt 237m SE. No landslips recorded within 500m.
Solid Geology (Bedrock)	Pennine Middle Coal Measures Formation comprising mudstone, siltstone and sandstone.
Dip of Solid Strata	Approx. 3 degrees ENE (Coal Authority information).
Faults	Geological fault 79m NW. None on site.
Coal Seams / Mining / Quarrying Natural Cavities etc	Site not within a Coal Authority Development High Risk Area (see Figure 3). No recorded shafts/adits on/near site (Figure 4). No shallow recorded or potential unrecorded shallow mine workings (<30m depth) (Figure 5). **No coal mining legacy issues.** No landslip risk. No natural cavities or mining cavities recorded within 500m. Risk from non-coal mine workings (iron ore). Risk described as small scale and at a level where they need not be considered. Surface ground workings - pond (35m E), reservoir (49-57m SE), canal (79-101m NE/E/SE), unspecified heaps (101m E & 249m NE), and colliery (210m E).

According to the Soilscapes on line viewer from the Cranfield Soil and AgriFood Institute, supported by DEFRA[1], the natural soils within the site are slowly permeable, seasonally wet, acid, loamy and clayey soils (Soilscape 17). However, original soils may not be present on the majority of the site due to its past industrial history.

[1] http://www.landis.org.uk/soilscapes/

Artificial/made ground relating to an embankment of the former Stairfoot and Cudworth railway line is recorded encroaching onto the eastern boundary of the site. Ordnance Survey maps suggest that the embankment may have been reworked and levelled as part of later industrial / commercial development.

The British Geological Survey (BGS) records no superficial deposits, nor landslips within 500m of the site.

The site is underlain by bedrock comprising mudstones, siltstones and sandstones of the Pennine Middle Coal Measures Formation, Upper Carboniferous (Westphalian) in age. These measures are largely unproductive, with few thin coal seams present. The on-site rock type is described as having a low to moderate, fracture type permeability.

The Groundsure environmental data report (Appendix C) records no linear features (geological faults, folds or coal outcrops) on site, the nearest being a fault 79m to the north west.

Coal Authority mine records indicate the strata dips to the east north east at approximately 3 degrees.

Coal mining legacy issues are described in detail in section 2.6 of this report.

2.5 Background Soil Contamination

The Groundsure environmental data report records estimated background soil chemistry with particular reference to concentrations of arsenic, cadmium, copper, nickel and lead, against which SEL have compared levels of concern for human health currently applicable in the UK where future commercial use is considered:

	Estimated On Site	Max (Commercial/Industrial Use[2])
Arsenic (As)	15-20 mg/kg	640mg/kg
Cadmium (Cd)	1.8 mg/kg	190mg/kg
Chromium (Cr)	60-90 mg/kg	8600mg/kg
Nickel (Ni)	15-30 mg/kg	980mg/kg
Lead (Pb)	100-200 mg/kg	2330mg/kg

It should be noted that these are estimated background levels for the area and should not be relied upon as reflecting the actual chemical status of soils on site, which can only be determined by the sampling and chemical analysis of soil samples from within the site.

2.6 Mining, Coal Mining Legacy Risk and Ground Stability

As the site lies within an identified Coal Mining Reporting Area (also known as CON29M Coal and Brine Consultation areas), a Coal Mining Report (CMR) was obtained for the site, a copy of which is presented as Appendix E.

[2] UK accepted soil contamination guideline values for commercial/industrial use.

Table 3 summarises the potential risk associated with coal mining legacy issues for the site and has been compiled based on The Coal Authority document entitled '*Risk based approach to development management - Guidance for Developers*' (Version 4, 2017).

The following comments are made regarding on-site coal mining legacy issues:

- The site does not lie within a *Development High Risk Area*.
- The property is *"in a surface area that could be affected by underground mining in 10 seams of coal at 150 to 610m depth, and last worked in 1985. Any movement in the ground due to coal mining activity associated with these workings should have stopped by now."*
- There are *"no recorded coal mine entries known to the Coal Authority within, or within 20 metres of the boundary of the property."*
- There are reserves of coal *"which could be worked at some time in the future".*
- There are no coal seams lying at shallow depths below the site which could have been worked.
- The site has not been subject to past opencast coal mining.

The risk to surface development from coal mining legacy issues is summarised in Table 3 below:

Table 3: Summary of Potential Risks Associated with Coal Mining

Coal Mining Issue	Coal Mining Risk		Risk Assessment
	Yes	No	
Past recorded underground coal mining at greater than 30m deep		✓	Affected by underground mining in 10 seams of coal, 150m to 610m deep, last worked in 1980. Ground movement due to these workings should have stopped by now.
Past shallow recorded underground coal mining (<30m deep)		✓	
Past shallow unrecorded underground coal mining (<30m deep)		✓	
Present underground coal mining		✓	
Future underground coal mining		✓	Although The Coal Authority identifies the potential for future underground coal mining, under current economic, environmental and planning constraints, SEL consider this a negligible risk.
Recorded mine entries (shafts/adits)		✓	
Unrecorded mine entries (shafts/adits)		✓	
Coal mining geology (fissures etc)		✓	
Past opencast (surface) coal mining		✓	
Present/future opencast coal mining		✓	
Coal mining subsidence		✓	
Withdrawal of support		✓	
Record of past mine gas emissions		✓	
Recorded surface hazards related to coal mining		✓	

SEL have considered the potential for the future extraction of coal beneath the site. After consideration of the current economic, planning and governmental factors that affect coal mining in the UK, SEL consider the risk to be negligible.

Having reviewed the coal mining legacy issues, SEL consider the *site* ***is not at risk from legacy coal mining activities***.

Regarding non-coal mining activities, the Groundsure report records a risk associated with the underground mining of vein minerals (iron ore). However, Groundsure indicates these as being on a small scale. Potential for difficult ground conditions associated with such workings are described as unlikely, or localised and at a level where they need not be considered (for planning).

There are no natural or mining cavities recorded within 500m of the site.

The Britpits database has no records within 250m of the site.

There are records of surface ground workings relating to a pond (35m E), a reservoir (49-57m SE), a canal (79-101m NE/E/SE), unspecified heaps (101m E & 249m NE), and a colliery (210m E) within 250m of the site.

With regard to natural ground stability hazards, the Groundsure environmental data report (Appendix C) refers to six BGS defined natural ground stability hazard datasets which provide a hazard rating for ground subsidence arising from natural ground conditions. These are detailed in the following table.

Table 4: Natural Ground Stability Hazards

Ground Condition	Hazard Potential
Shrink-Swell Clays	Very Low
Landslides	Very Low
Ground Dissolution of Soluble Rocks	Negligible
Compressible Deposits	Negligible
Collapsible Deposits	Very Low
Running Sand	Negligible

2.7 Historical Borehole Data

The British Geological Survey (BGS) records 2 historic boreholes within 250m of the site (75m NW and 155m NE). The details of the closest borehole are recorded in Table 5 below:

Table 5: Borehole Records

BH REF. SE30NE704 – Cell Site 3613 Barnsley Kendray 1		
Rock Description	**Thickness (m)**	**Depth to Top (m)**
MADE GROUND, soil, rubble, clay and stones	0.30	0.00
Brown, slightly muddy CLAY, with some gravel	1.70	0.30
Rockhead at 1.7m		
Weathered MUDSTONE	0.80	2.00
Borehole drilled to 2.8m.		

2.8 Hydrogeology

There are no superficial deposit aquifers recorded on site, the nearest being an area 235m to the south east.

On site bedrock geology has been designated a Secondary A aquifer. Formerly known as minor aquifers, these rocks are 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.

With respect to groundwater vulnerability, the bedrock aquifer is described as having a high vulnerability (easily transmitting pollution to groundwater), with soils of low infiltration value (<40%), migration being via well connected fractures.

The Environment Agency's (EA) on-line Catchment Data Explorer map shows the site to be located in the Don & Rother Millstone Grit and Coal Measures operational catchment of the Humber groundwater management area, where the chemical quality of bedrock groundwater for 2016 was classified as 'poor' (quantitative good, chemical poor).

There are no active EA licensed groundwater abstractions recorded within 2km of the site and 6 historic licences relating to 3 locations, the nearest being a well into the superficial drift 718m to the north licenced for general/process washing.

There are no recorded potable groundwater abstractions licenced by the EA within 2km of the site.

Groundwater protection zones are zones designated in England and Wales by the EA as major groundwater sources (from wells, boreholes and springs) used for drinking water supply. The site is not located within 500m of a groundwater Source Protection Zone either with respect to potable abstraction sites, or with respect to a confined aquifer.

Based on the information reviewed above, the sensitivity of groundwater as a receptor to any potential contamination at this location is not considered to be highly significant.

2.9 Hydrology

The nearest surface watercourse to the site is the disused Dearne and Dove canal located 139-204m to the east/north east, which is located at a height of approximately 70m AOD (cf 55-57m AOD on site). Water flow from the site is not therefore expected to influence this watercourse. The canal links to a small watercourse, Dob Sike, located approximately 423m south east. This flows in a south easterly direction towards the River Dove.

The EA's on-line Catchment Data Explorer map shows the majority of the site to be located within the Dove from the source to the River Dearne catchment of the River Dearne operational catchment area. This catchment has an overall Ecological and Chemical Cycle 2 category of 'Moderate' (ecological moderate, chemical moderate, 2016).

There are no active EA licensed surface water abstractions recorded within 2km of the site and only 1 historic record located 1.84km to the south, a top up/make up location for water into the River Dove.

There are no recorded potable surface water abstractions licenced by the EA within 2km of the site.

There are 2 EA licensed discharge consents to controlled waters located within 500m of the site, a historic unspecified trade discharge 366m to the east and a sewage overflow discharge 492m to the north.

Based on the information reviewed above, the level of sensitivity of surface water resources as a receptor to any potential contamination at this location is not considered to be highly significant.

2.10 Flood Risk

Rivers and the Sea

The EA Flood Map for Planning on the Gov.UK website records the site as being within a Flood Zone 1 flood plain and records the highest risk from flooding as 'low'. A copy of the EA Flood Map for Planning (Rivers and Sea) is provided in Appendix F[3].

A review of the EA map of long term risk of flooding from rivers and the sea available on the Gov.UK website indicates the site is in an area with a 'very low risk' (< 0.1% chance of flooding in any given year).

The site is not located within 50m of a Flood Zone 2 or Flood Zone 3 and there are no records of historic flood events, areas benefitting from flood defences or areas benefitting from flood storage within 250m of the site.

Surface Water (Pluvial)

The EA map showing the long term risk from surface water (pluvial) flooding identifies the northern part of the site as very low risk (<0.1% chance in any given year). The southern part of the site is described as having a higher risk (1 in 30 year maximum risk, flooding 0.3-1.0m depth). It should be noted that localised areas of high flood risk are located immediately east of the site on land occupied by the superstore.

Groundwater

With respect to groundwater flooding, that is, the potential for the water table to rise to above ground level or within underground structures such as basements or cellars, the Groundsure environmental data report identifies the site as to be of 'Negligible' risk.

Reservoirs

The EA map showing the flood risk from reservoirs indicates that the site is not located in an area of risk should a reservoir fail and releases the water it holds.

[3] Reproduced under Open Government Licence https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Flood Risk Assessment

Regulators are entitled to require a standalone flood risk assessment for a site in addition to this Phase 1 Preliminary Risk Assessment Report should they consider it necessary. The EA flood map for planning website identifies the site as being low risk. Additionally, the site is less than 1ha in area. Normally, under these circumstances, a flood risk assessment would not be required (Appendix E).

2.11 Landfills and Licenced Waste Management Facilities

The influencing distance of a gassing landfill is dependent on a number of variables, including the type of waste, geology, hydrogeology, site engineering etc. Therefore, owing to the specific nature of each of these factors, it is not possible to guarantee that a site is not within the influencing distance of a known landfill site. However, it is normal practice to consider a 250 metre consultation zone around the property.

The Groundsure environmental data report (Appendix C) includes EA, BGS, DoE and Local Authority records and shows that there are no active / recent or non-operational landfills, nor records of landfills identified from Local Authority historical records/mapping within a 250m radius of the site.

However, there is 1 historic BGS and EA landfill record relating to a disused canal 65-89m to the north of the site. This location is shown as being limited in dimension and of no risk to the aquifer.

Table 6: Recorded Landfill Sites

Site Name, Address & Operator	Location	Accepted Waste Types	First Input Date	Last Input Date
N/A	65-89m N	Dis-used canal, no risk to aquifer. Limited lateral dimensions.	n/a	n/a

The Groundsure environmental data report records 1 historic waste site (170m N), 1 licenced waste site (213m NE) and 13 waste exemption licences relating to 4 locations (including 1 on site record) licensed by the EA within 250m of the study area. The on-site waste exemption licence relates to burning waste in the open (WEX215717).

Table 7: EA Licenced & Other Waste Sites

Site Name, Address & Operator	Location	Type of Site	Date	Reference No.
The Bungalow, Albion Road, Barnsley.	On site	Disposing of waste exemption – burning waste in the open		WEX215717
Stanley Road, Barnsley, S70 3PG.	21m N	Use of waste exemption – use of waste to manufacture finished goods.		WFX177556
N/A	149m N	Treating waste exemption – manual treatment of waste.		WFX229446

Site Name, Address & Operator	Location	Type of Site	Date	Reference No.
Carlisle Engineering Works, Grange Lane, Stairfoot, Barnsley.	170m N	Historic planning application for waste transfer station	01/04/1999	98/411
WFS Metals Ltd, Wombwell Lane, Stairfoot, Barnsley.	213 NE	Licenced Metal Recycling site. 25,000 tonnes. Also waste exemption licences for this location.	04/12/1989	WFS001, RP3290ZC/A001
Stairfoot Metals Ltd, Wombwell Lane, Barnsley, S70 3NT.	226m E	Treating waste exemption – recovery of scrap metal.		WEX077976

2.12 Ground Gases

CIRIA Report C665 (Ref. F) identifies potential sources of hazardous ground gases (principally methane and carbon dioxide) that may be generated from infilled land and other sources and provides guidance on assessing the risks from these features. It is normal practice within the industry that where potentially infilled land occurs within 250m of a site, it should be assessed for risk from ground gas.

With respect to active, non-operational and historic landfills, the Groundsure environmental data report shows a historic area 65-89m to the north, which is of limited dimensions and described as a landfill (disused canal, not a risk to the aquifer).

With respect to potentially infilled land, the Groundsure report has identified the presence of an infilled former water reservoir (49-57m E), an unspecified heap (104m to the east), a reworked railway embankment (eastern perimeter) and a former nursery (botanical, 2m SW), all of which could have been subjected to some infilling. Ordnance Survey maps indicate that earthworks occurred locally on site in preparation for the construction of the Albion works (1960 & 1960-61 plans), which could also represent filled ground,

A review of past coal mining activities has identified no requirement to monitor for potential mine gases.

Having reviewed the factors described above, although all of the potential ground gas sources appear to be relatively small, they are several in number which collectively increases the risk. It would therefore be prudent to monitor for ground gases as part of the Phase 2 investigations.

Regarding radon gas, reference to the Gov.UK radon maps website[4] indicates that the site is located in an area where 1-3% of homes are above the radon action level. Reference to radon guidance report BR 211 (Ref. G) indicates that no radon protection measures are required for new development in this area.

[4] https://www.ukradon.org/information/ukmaps

2.13 Air Quality

Section 82 of the Environment Act 1995 requires every Local Authority to review the air quality within its area and section 83 requires them to designate an Air Quality Management Area (AQMA) where air quality objectives put in place to protect human health and the environment are not being achieved, or are not likely to be achieved, as set out in the Air Quality (England) Regulations 2000.

The revised NPPF (Ref. D) requires AQMAs and Clean Air Zones to be taken into account in planning policies and decisions.

Reference to the on-line interactive map of Air Quality Management Areas managed by DEFRA[5] shows that the site is located within the Barnsley Metropolitan Borough Council AQMA, which has declared Nitrogen Dioxide (NO_2) as a prime pollutant. Eight areas of concern have been identified within the district, none of which are on or adjacent to the study area.

2.14 Other Potentially Significant Information Relating to the Site

Reference has been made to the Groundsure environmental data report (Appendix C). With regard to *current industrial land use*, the report identifies 22 locations within 250m including 1 on-site record (the Albion works/factory) and 7 within 100m, namely a garage (vehicle MOT/repair/testing/servicing, 19m SW), an electricity substation (34m E), a telecommunications mast (70m N), a construction supply facility (77m N), a warehouse (81m NW), a depot (96m NW) and a tyre fitting facility (99m NW). Notable other locations include 2 unspecified works (132m N & 204m E) and a scrap metal merchant (213m E).

There are no current/recent petrol/fuel sites recorded within 250m of the site and no National Grid high pressure gas transmission pipelines or National Grid high voltage underground electricity transmission cables within 500m.

A review of *historical industrial land uses* identified from 1:10,000/10,560 scale mapping has identified 50 records relating to 20 locations within 250m of the site, including an on-site (engineering) works, and within 100m a nursery (2m SW), an unspecified warehouse (26-31m E), a bleach/dye works (32m E), a foundry (71m N), and a tanning yard (96m N). Notable other locations include an unspecified heap (104m E), railway infrastructures (183-204m NE) and a glass works (204m E).

With respect to historic tanks, there is 1 record (190m SE) within 250m of the site.

With respect to historic energy features, there are 6 records relating to 4 locations within 250m, all relating to electricity substations, the nearest being 148m to the north.

The *historic petrol station and historical garage* databases record no petrol stations within 250m of the site, but 3 historic garages (1 location, 202-235m E).

The Groundsure data report records no historic military sites within 500m of the review area. Inspection of the Zetica unexploded ordnance risk map website indicates the site is located within a zone of low risk from WWII unexploded ordnance.

[5] https://uk-air.defra.gov.uk/aqma/maps

With respect to *potentially infilled ground* within 250m of the site, Groundsure has identified the presence of an infilled former water reservoir (49-57m E), a reworked railway embankment on the eastern perimeter of the site, which could contain a degree of infilling. OS mapping indicates that earthworks occurred locally on site in preparation for the construction of the Albion works (1960 & 1960-61 plans). Additionally, there are historic records of a botanical nursery located 2m to the south west, which could also have included small areas of infill.

Regarding *environmental permits, incidents and registers*, there are 6 Part A(2) & Part B authorised activities within 500m of the site, the nearest being a waste oil burner (21m SW), a timber manufacturer (70m NE), a petrol vapour recovery facility (109m SW) and a vehicle respray facility (247m E). All of these activities have had no enforcement orders.

There are 10 records of EA pollution incidents relating to 2 locations within 500m of the site, the nearest (8 records) being 179m to the north, relating to smoke/waste material/asbestos due to firefighting run off (significant impact to the air). The other location 184m to the south, relates to unspecified waste materials (minor/no impact). Otherwise there are no Dangerous/Hazardous COMAH/NIHHS sites, regulated explosive sites, hazardous substance consents and enforcements (storage & usage), historic IPC authorised activities, Part A(1) & IPPC authorised activities, , radioactive substance authorisations, licenced discharges into controlled waters, pollutant release into surface waters (Red List discharge consents), pollutant release into public sewer, List 1 and 2 Dangerous Substance sites, EA pollution incidents, pollution inventory substances sites, pollution inventory waste transfers and pollution inventory radioactive waste (Category 3 or 4), nor sites determined as Contaminated Land under Part 2A of the Environmental Protection Act (1990) within 500m of the review area.

2.15 Environmental Designations

With respect to *designated environmentally sensitive areas*, reference has been made to the Groundsure environmental data report (Appendix C) which has identified the following environmental designations within 2km of the site.

Table 8: Environmental Designations

Designation	Location	Name	Comment
Green Belt	235m N	S&W Yorkshire	Barnsley (planning designation)
SSSI	1013m SE	Stairfoot Brickworks	
Local Nature Reserve	1190m N	Dearne Valley Park	
Ancient Woodland	1602m NE		Ancient & semi-natural woodland
Green Belt	1663m SW	S&W Yorkshire	Barnsley (planning designation)
Ancient Woodland	1787m NE		Ancient & semi-natural woodland
Ancient Woodland	1824m NE		Ancient & semi-natural woodland
Ancient Woodland	1880 to 1893m S	Wombwell Wood	Ancient semi-natural & replanted woodland
Ancient Woodland	1996m NE		Ancient & semi-natural woodland

The review area is located within a nitrate vulnerable zone.

With regard to *visual, cultural and habitat designations*, there are no sites identified within 250m of the review area.

3.0 CONCEPTUAL SITE MODEL AND PRELIMINARY RISK ASSESSMENT

3.1 Potential Pollutant Linkages

To determine the potential for a pollutant linkage to be present, the preliminary risk assessment process involves the identification of potential sources, pathways and receptors. A pollutant linkage can only be present if all three of these factors are involved. In this model there must be a **source** of contamination present (normally a contaminant or pollutant), with a **pathway** representing a route for the contaminant to migrate within the environment towards a **receptor** which may be susceptible to impact from the contamination. A receptor can be a natural feature such as surface or groundwater and humans, but may also include ecological systems and property.

This approach is in accordance with the contaminated land provisions under Part 2A of the Environmental Protection Act 1990. Under the 2014 revised Statutory Guidance implementing these provisions (Ref. E), land is defined as being contaminated if:

- Significant harm is being caused or there is a significant possibility of such harm being caused to human health, or relevant non-human (ecological or property), receptor; and / or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of significant pollution of controlled waters being caused.

The Conceptual Site Model for this assessment is based on the proposed redevelopment of the site as a haulage/transport depot/yard, including the erection of two buildings.

3.2 Potential Sources of Contamination

Potential sources of contamination and associated contaminants which may be present on site are shown in Table 9 (next page).

Table 9: Potential Sources of Contamination

Potential Sources	Potential Contaminants
On Site	
Disturbed ground (embankment). Other Made ground (old foundations / fill etc). Small building of unspecified use. Engineering works (Albion Works). Demolition of buildings. Historic burning of waste. Storage/transport of scrap metals.	Asbestos containing materials. Metals / metalloids including As, B, Cd, Cr, Cu, Ni, Pb, Hg, Zn, Se. Cyanide, sulphate, sulphide. Phenols. Polycyclic aromatic hydrocarbons (PAHs). Petroleum Hydrocarbons (TPHs). Volatile and semi-volatile organic compounds (VOC & SVOCs). Ground gases (methane and carbon dioxide).
Off Site	
Railway (& embankment, adj. E. Plantation / nursery, 2m SW. Embankment (development platforms), 18m N. Garage / MOT centre, 19m SW. Bleach & dye works, 32m NE. Electric sub stations, 34m E & 148m N. Infilled pond, 40m NE. Farm, 45m NE. Infilled reservoir (manmade), 64m SE. Foundry, 71m N. Works, warehouses & depot, 75m N. Construction/supply facility, 77m N. Warehouses, 68m E & 81m NW. Disused / infilled canal, 65-89m N. Depot, 96m NW. Tanning yard, 99m N. Unspecified heap, 104m E. Glass works, 104mN & 204m E. Glass fibre works, 118m E. Tank, 191m SE. Garage, 202m E. Metal recycling, 213m NE. Demolition of buildings.	Asbestos containing materials. Metals / metalloids including As, B, Cd, Cr, Cu, Ni, Pb, Hg, Zn, Se. Cyanide, sulphate, sulphide. Phenols. PAHs. TPHs. VOC & SVOCs) Pesticides. Polychlorinated biphenyls (PCBs). Ground gases (methane and carbon dioxide).

3.3 Potential Pathways

The potential pathways representing the routes by which contaminants may migrate are listed as follows:

- Ingestion and inhalation of soil / water / dust;
- Dermal contact with soil / water / dust;
- Migration and / or inhalation of gases and vapours;
- Migration / leaching of contaminants through soil / groundwater;
- Volatisation of contaminants to indoor or outdoor air;
- Surface water runoff;
- Service pipes;
- Ground instability / differential settlement.

3.4 Receptors

3.4.1 Human Health

Chronic Risks

The chronic risks to human health take into account those risks to end users of the site (future occupants and visitors) and neighbouring occupants.

Acute Risks

Acute risks are considered with respect to construction workers / engineers on site.

NB: During any intrusive ground works appropriate health and safety measures should be adopted to protect site workers from any potential risks associated with contamination in the ground. This should include the use of the appropriate personal protective equipment necessary and a general awareness of any possible risks to safety and human health on site.

3.4.2 Controlled Waters

Groundwater

The site bedrock is classified as a Secondary (A) Aquifer (Minor Aquifer). The site is not located within a groundwater Source Protection Zone. There are no active EA licensed groundwater abstraction locations within 2km. The chemical quality of groundwater regionally is recorded to be poor. Groundwater is considered a receptor to potential contamination, but the level of sensitivity of the receptor at this location is not considered highly significant.

Surface Water

The nearest watercourse is a disused and partially infilled canal 139m to the east and up dip which is believed to join Dob Sike 423m south. There are no active EA licensed surface water abstractions within 2km of the site and no abstractions for potable use. There are 2 EA licensed discharge consents to controlled waters located within 500m of the site, a historic unspecified trade discharge 366m to the east and a sewage overflow discharge 492m to the north.

Surface water resources are considered a receptor to potential contamination but the level of sensitivity of the receptor at this location is not considered to be highly significant.

3.4.3 Non-Human Receptors

Ecological Systems

The only potential ecological receptor within 1km is an area of Greenbelt 235m to the north.

Property (buildings / structures / crops / livestock)

Property receptors include the proposed buildings on site, neighbouring inhabited residential properties to the south and the large retail warehouse to the east.

3.5 Outline Conceptual Site Model

Based on all the information determined from previous sections of this report, the outline Conceptual Site Model (CSM) identifies the potential pollutant linkages which may exist on the site and is presented in the following table.

Table 10: Outline Conceptual Site Model

Potential Pollutant (Source)	Potential Linkage (Pathway)	Receptor
On Site: Disturbed ground (embankment). Other Made ground (old foundations / fill etc). Small building of unspecified use. Engineering works (Albion Works). Demolition of buildings. Historic burning of waste. Storage/transport of scrap metals. ***Off Site***: Railway (& embankment, adj. E. Plantation / nursery, 2m SW. Embankment (development platforms), 18m N. Garage / MOT centre, 19m SW. Bleach & dye works, 32m NE. Electric sub stations, 34m E & 148m N. Infilled pond, 40m NE. Farm, 45m NE. Infilled reservoir (manmade), 64m SE. Foundry, 71m N. Works, warehouses & depot, 75m N. Construction/supply facility, 77m N. Warehouses, 68m E & 81m NW. Disused / infilled canal, 65-89m N. Depot, 96m NW. Tanning yard, 99m N. Unspecified heap, 104m E. Glass works, 104mN & 204m E. Glass fibre works, 118m E. Tank, 191m SE. Garage, 202m E. Metal recycling, 213m NE. Demolition of buildings.	Migration and inhalation of gases / vapours. Inhalation of soil, water or dust. Dermal contact with / ingestion of contaminated soil, water, dust. Migration / leaching, runoff and percolation through soils and rock joints. Volatisation of contaminants to indoor or outdoor air. Service pipes.	Construction workers. Site end users (occupants & visiting trades). Neighbouring occupants (residential & commercial). Groundwater in Secondary (A) Aquifer. Canal & Dob Sike. Greenbelt 235m N. Property (proposed site development and existing adjacent properties).

3.6 Preliminary Environmental Risk Assessment

This section aims to expand the outline CSM to assess the level of risk for each potential pollutant linkage.

Risk is a combination of the 'probability' (likelihood) of an event occurring and the magnitude of its 'consequence' (severity). Therefore, in order to assess risk, both the probability and the consequence of an event must be taken into account. SEL has adopted guidance provided by CIRIA C552[6], for use in the production of risk assessments for contaminated land and a simple guide to this process is provided in Appendix G.

The risk categories that are ultimately determined as the basis for assessing the likelihood of the site being described as contaminated, are provided with their respective definitions in Table 11 (below).

Table 11: Risk Classification Definitions from CIRIA C552

Risk Rating	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that such harm would be severe, or if any harm were to occur it is more likely that the harm would be mild. Investigation is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

The pollutant linkages from the outline CSM and resulting risks are now considered in Table 12 (next page).

[6] CIRIA C552 *Contaminated land risk assessment. A guide to good practice*, CIRIA 2001

Table 12: Preliminary Environmental Risk Assessment

Receptor	Potential Pollutant Linkage	Estimated Degree of Risk to Receptor
Construction Workers	Migration and inhalation of ground gas / vapours.	Low
	Inhalation of soil, water or dust.	Low/Moderate*
	Dermal contact with/ ingestion of contaminated soil/water/dust.	Low/Moderate*
	Volatisation of contaminants to indoor or outdoor air.	Low/Moderate*
Site End Users	Migration and inhalation of ground gas / vapours.	Low/Moderate
	Inhalation of soil/water or dust.	Low/Moderate
	Dermal contact with/ingestion of contaminated soil/water/dust.	Low/Moderate
	Volatisation of contaminants to indoor or outdoor air.	Low/Moderate
Neighbouring Occupants	Migration / leaching / runoff.	Low**
	Migration and inhalation of ground gas / vapours	Low
	Inhalation of soil, water or dust.	Low
	Dermal contact with/ingestion of contaminated soil/water/dust.	Low
Surface Water	Migration / leaching / runoff.	Low**
Groundwater	Migration / leaching / runoff.	Low**
Property (Land & Buildings)	Migration / leaching / runoff.	Low **
	Ground instability / differential settlement	Low
Ecological Systems	Migration / leaching / runoff.	Low**

* Assumes basic PPE is used.
** Assumes good site construction practice, including control of runoff / spillages and dust control.

In this preliminary qualitative risk assessment, an overall **Low/Moderate** risk has been attributed for the site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

For this Phase 1 Preliminary Geo-Environmental Risk Assessment report the available data for the study area has been reviewed in the context of the proposed redevelopment of the site as a haulage/transport depot/yard, including the erection of two buildings.

The assessment has derived the overall level of risk to human health and the wider environment from on and off-site sources to be **Low to Moderate**. The risk mainly relates to construction workers and end users from the release of potential contaminative materials during the previous demolition of the buildings on site, potential ground contamination associated with the former use of the site as an engineering works and for the storage of scrap metals and historical uses within the surrounding area.

It is recommended that a Phase 2 intrusive site investigation is undertaken to assess the contamination status of the site with respect to its past land use. The objectives of the Phase 2 investigation would be to:

- Benchmark the contamination status of the site including the risk from contaminants (including ground gas / vapours) in soils.
- Provide geotechnical data to inform the design of the foundations of the new properties proposed on site.
- Clarify the outline Conceptual Site Model.
- Clarify the Preliminary Environmental Risk Assessment.
- Provide data for any remedial work that may be required.

Phase 2 Geo-Environmental Site Investigation

The Phase 2 (intrusive) site investigation should include:

- Window sampling and trial pitting to assess the contamination status of the site and provide geotechnical information relating to the underlying soils in order to provide ground bearing information for the proposed development (Standard Penetration Tests).
- Gas monitoring wells should be installed in the window sampling locations to assess the risk from ground gases (principally carbon dioxide and methane). These locations would usually be monitored for six visits over a minimum period of three months (the minimum period required by most local authorities). Following this, the Initial Environmental Risk Assessment would be reappraised.
- Representative soil samples should be recovered from the window sampling and trial pit locations, which should be sent for appropriate contamination analysis. Samples would normally be tested for a range of parameters including metals / metalloids, cyanide, phenols, speciated polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs), soluble sulphate, sulphide, pH, volatile & semi volatile organic compounds (VOCs & SVOCs), pesticides and for the presence of asbestos. Any groundwater encountered should also be sampled and tested for a similar range of contaminants.

Ground Gas Risk

CIRIA Report C665 (Ref. F) identifies the potential sources of hazardous ground gases that may be generated from infilled land or other sources and provides guidance on assessing the risk from these features. It is normal practice within the industry that where potentially infilled land occurs within 250m of a site, it should be assessed for risk from ground gas.

This report has identified the risk of ground gases from a small area of landfill (65-89m N), an infilled former water reservoir (49-57m E), an unspecified heap (104m E) and the presence of a reworked former railway embankment on the eastern boundary. The risk from other waste sites and from former coal mining activities has been identified as low. Having considered the factors described above, it is recommended that gas monitoring be installed as part of the phase 2 investigation.

Coal Mining Legacy Issues

SEL consider that the site is not at risk from legacy coal mining activities.

Flood Risk

The site is located within a Flood Zone 1 (low probability of flooding) and the site is less than 1ha. SEL consider that under normal circumstances, an independent flood risk assessment should not be required for the site.

Other Factors

Should the use of plastic pipes or other materials be proposed for underground services as part of the redevelopment works, it should be noted that soil sampling requirements can vary between different service providers. For this reason prior to fully commissioning any ground investigation, it is recommended that the Client agrees any additional sampling requirements that may be required with each service provider.

Prior to intrusive site investigations, records of services should be obtained to accurately locate the existing services on site. Services should be protected in order to prevent damage by drilling or use of excavation equipment.

APPENDIX A

Figures:

Figure 1 Site Location.

Figure 2 Existing and Proposed Site Layout.

Figure 3 Coal Authority Search: Development High Risk Areas.

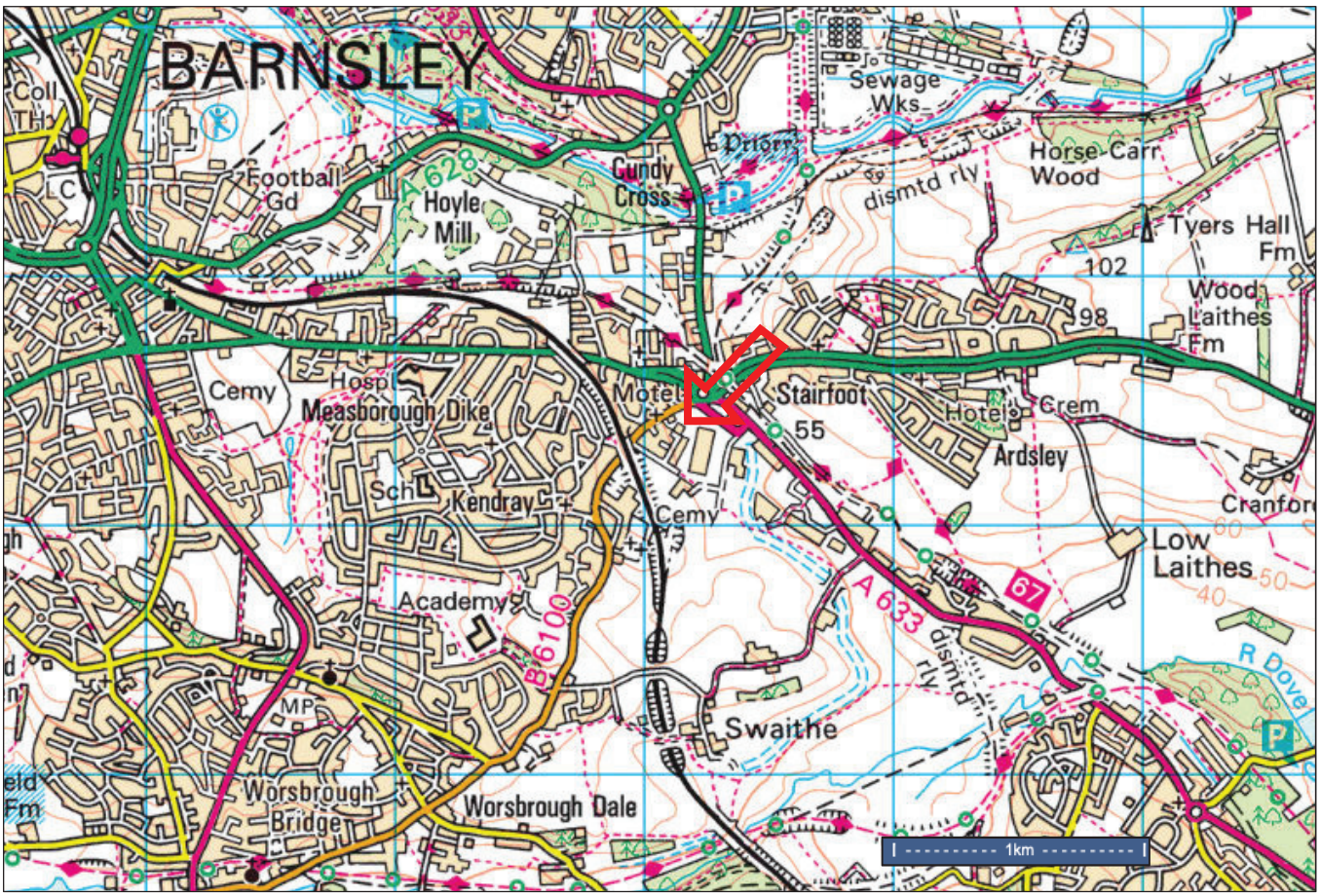
Figure 4 Coal Authority Search: Recorded Mine Entries (Shafts and Adits).

Figure 5 Coal Authority Search: Recorded shallow coal mine workings and probable shallow coal mine workings.

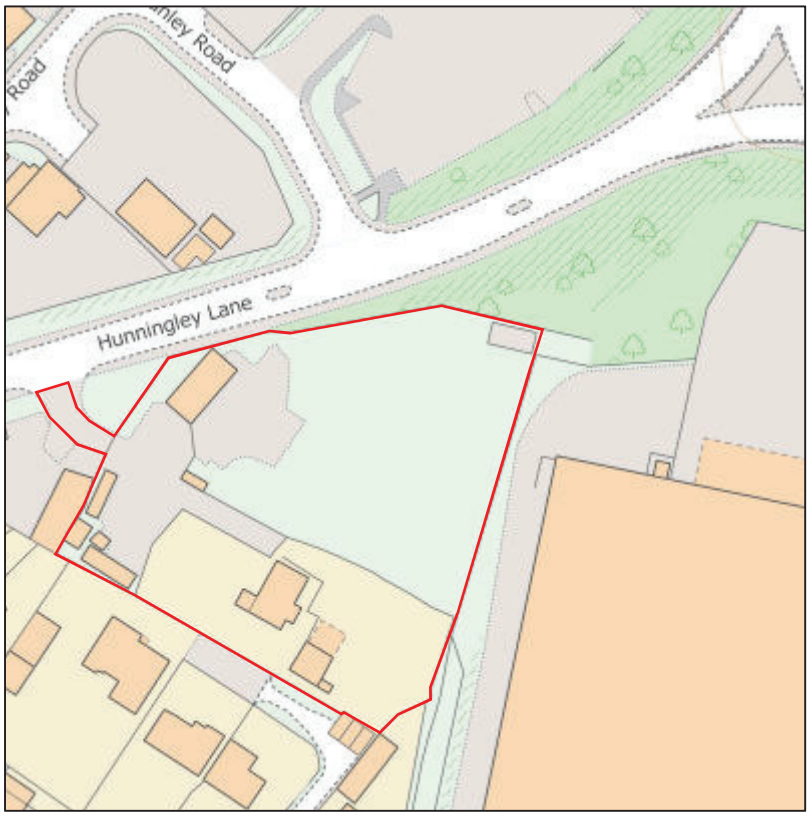
Figure 6 British Geological Survey Search: Geological Maps (Artificial Ground, Superficial Deposits and Bedrock).

Figure 7 Ordnance Survey Search: Site History.

Figure 8 Potentially Contaminative Activities.



Site Location



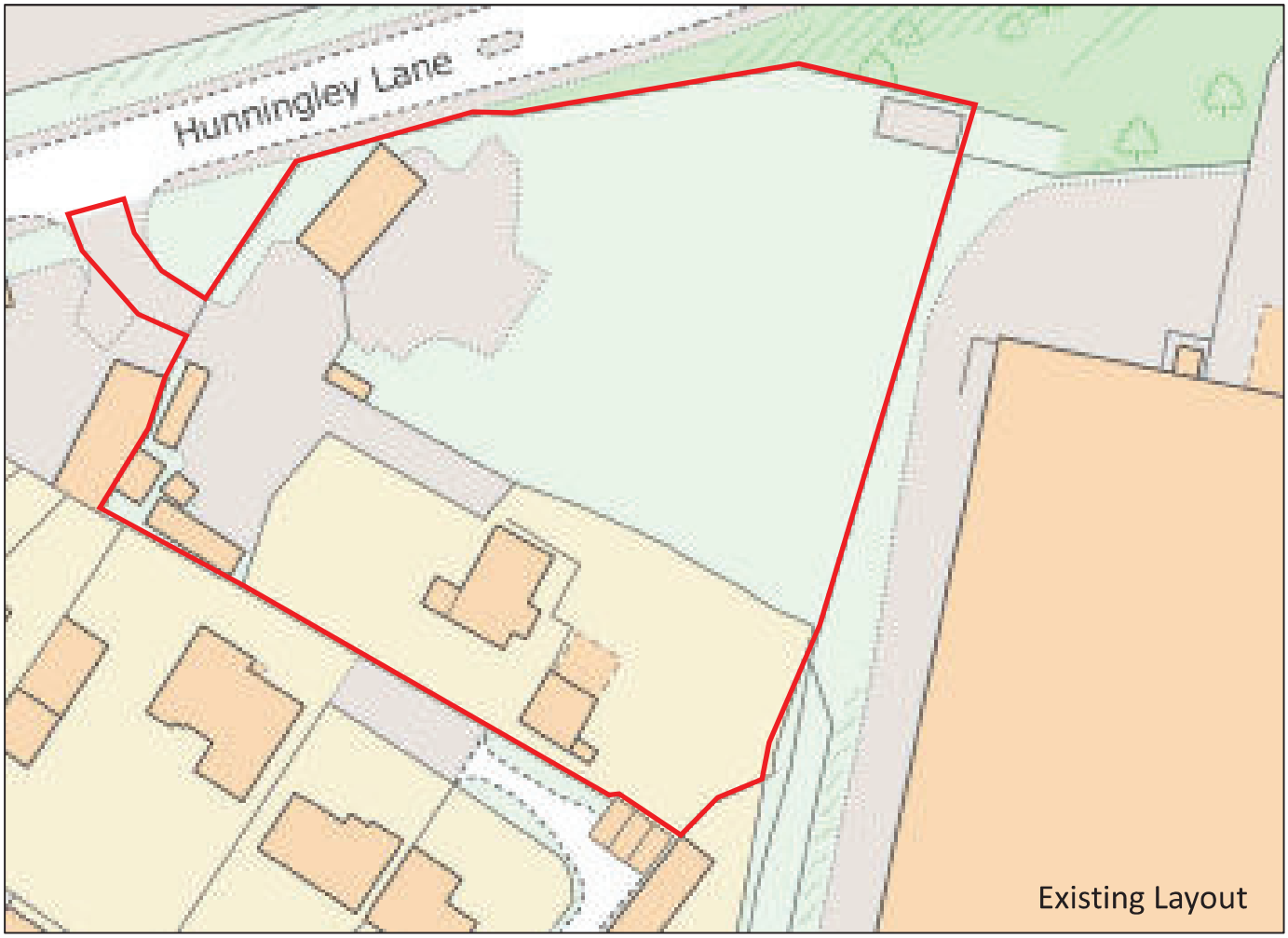
Ref No. 20155

Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY

FIGURE 1:

SITE LOCATION

(NGR 437170,405380)



The client has submitted a planning application to Barnsley Metropolitan Borough Council (2020/0289) to erect a haulage transport depot including two buildings, a yard, and areas for the storage of skips & trailers and the maintenance of vehicles. The planning application is currently under consideration and Silkstone Environmental Ltd have been appointed to undertake a Phase 1 Geo-Environmental Risk Assessment to inform the design.



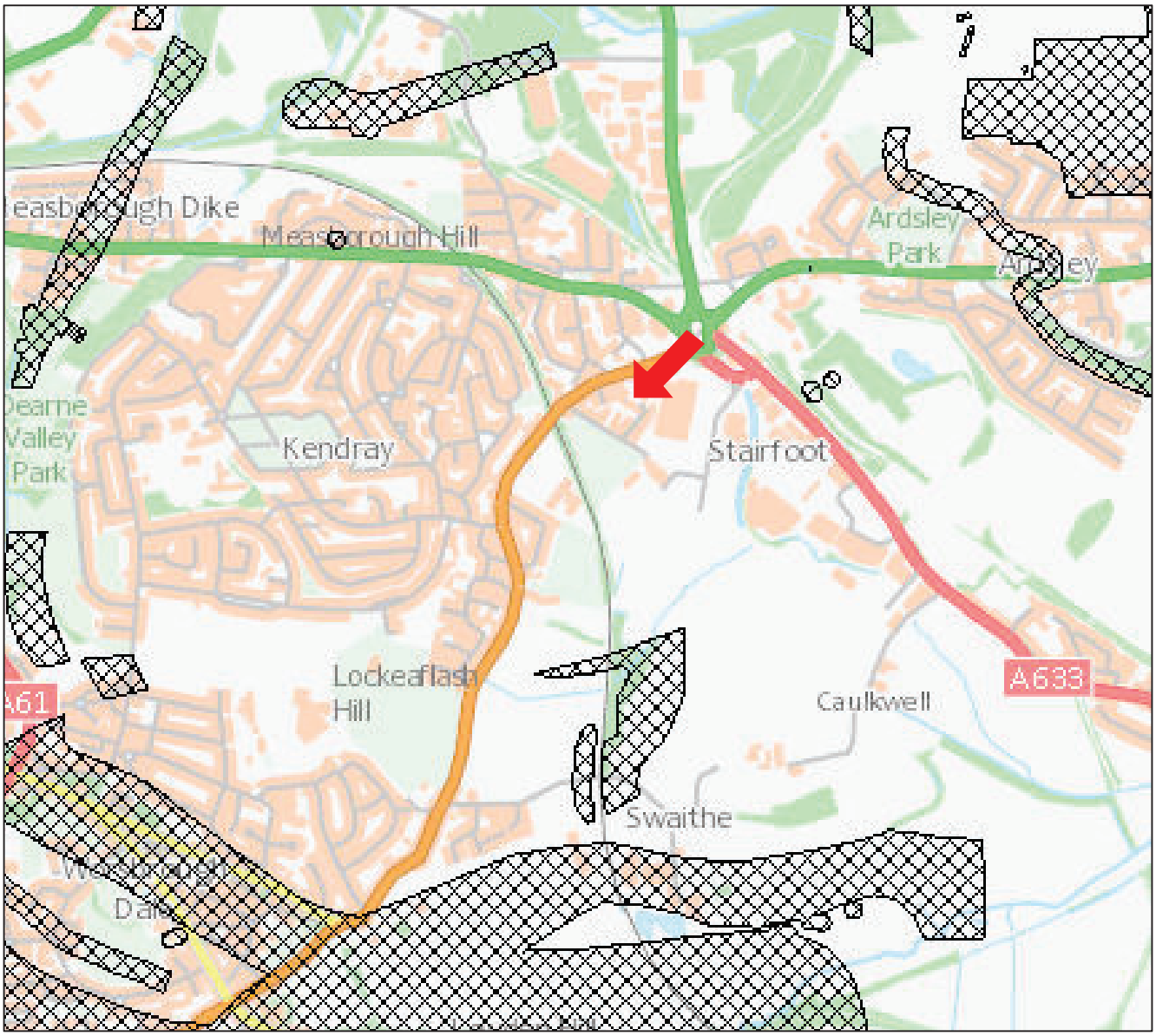
Ref No. 20155

Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY

FIGURE 2:

EXISTING & PROPOSED LAYOUT

(NGR 437170,405380)



Site Location

Development High Risk Area

The Coal Authority defines a Development High Risk Area as the part of a coal mining reporting area that has one or more recorded coal mining features which have the potential for instability, or a degree of risk, to the surface from the legacy of coal mining operations.

Ref No. 20155

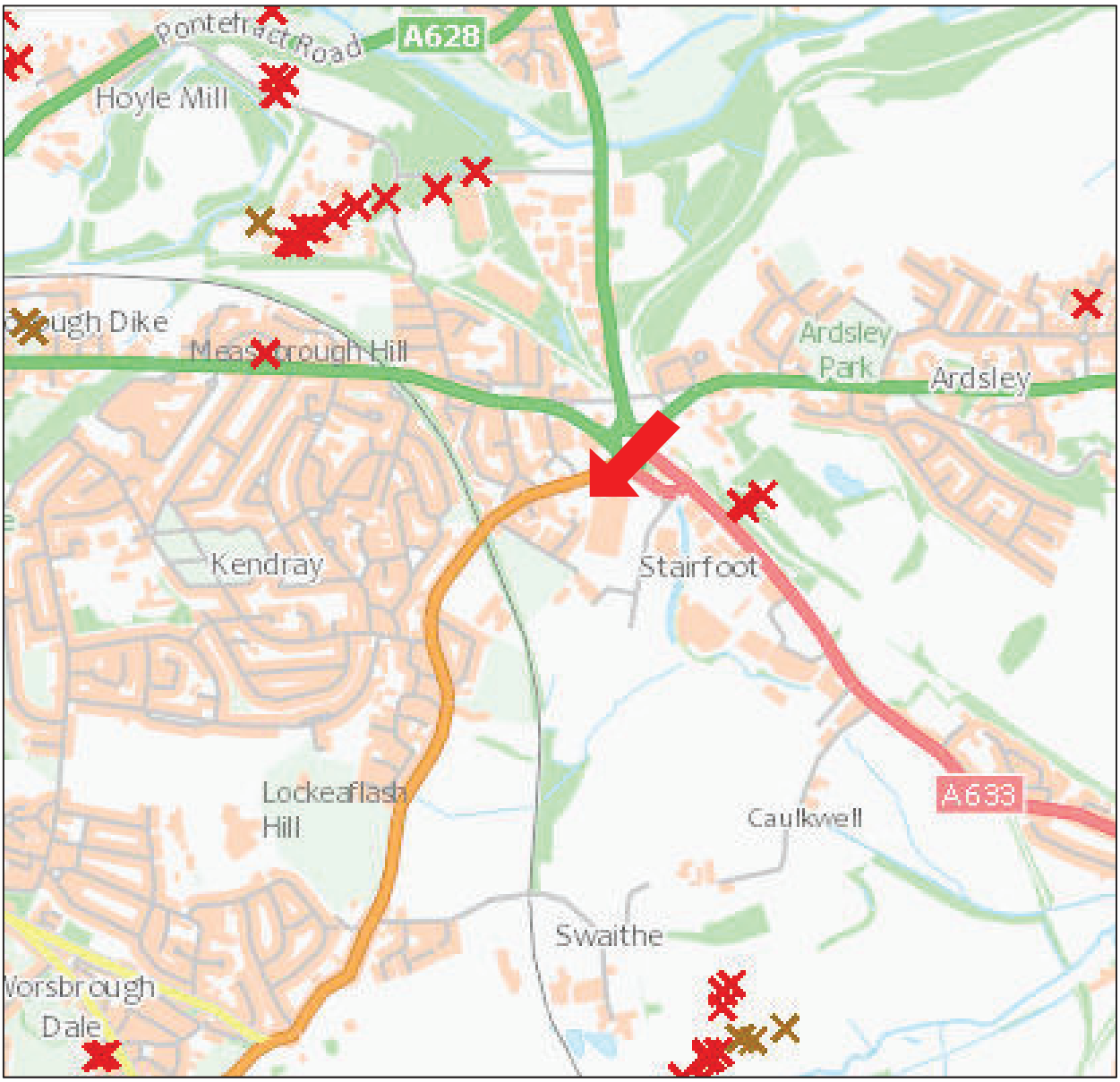
Albion Works, Hunningley Lane, Stairfoot, Barnsley, South Yorkshire, S70 3DY

FIGURE 3:

COAL AUTHORITY SEARCH

DEVELOPMENT HIGH RISK AREAS

(NGR 437170,405380)



X Recorded Shaft

X Recorded Adit

Site Location

Ref No. 20155

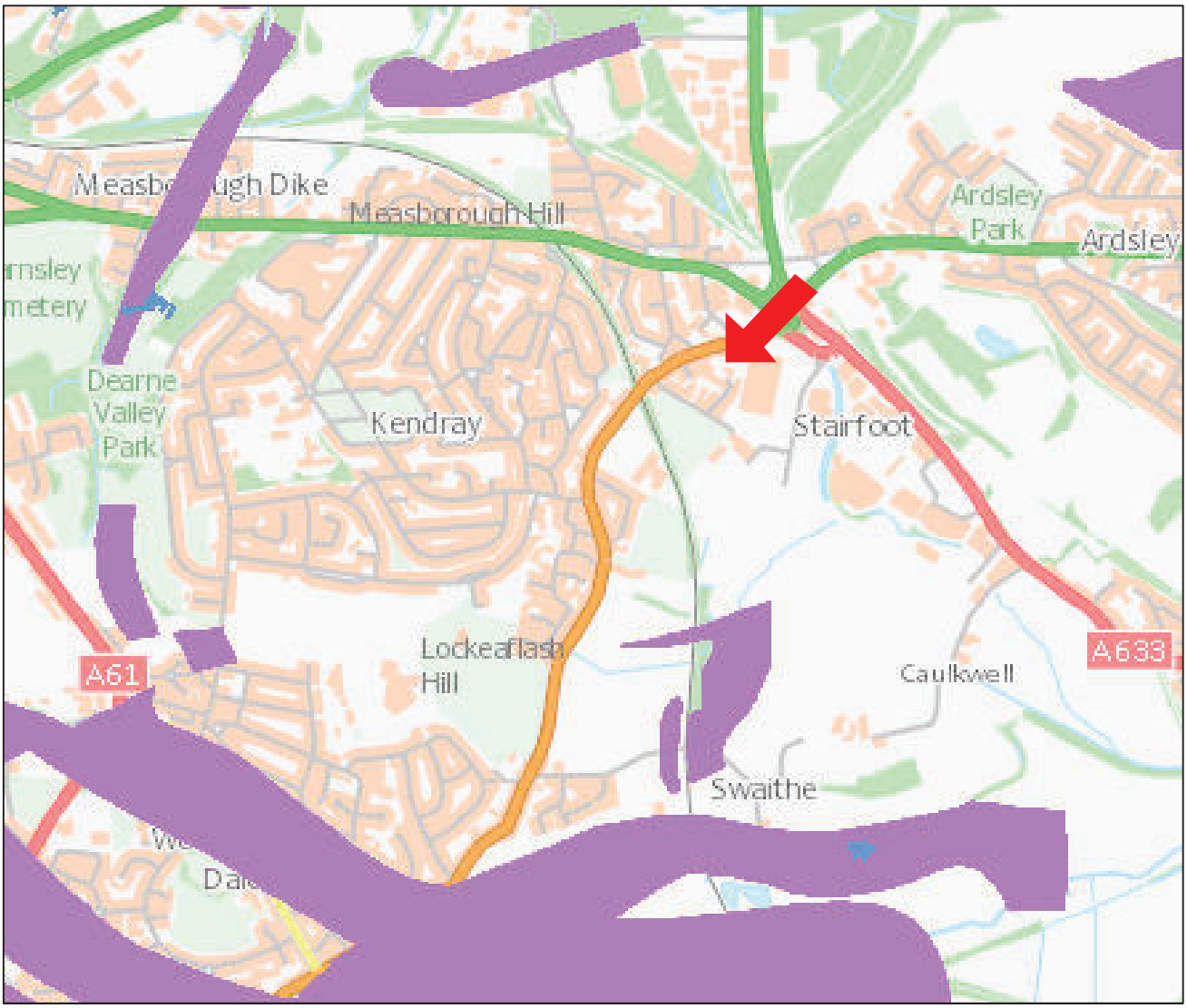
Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY4

FIGURE 4:

COAL AUTHORITY SEARCH

SHAFTS & ADITS

(NGR 437170,405380)



Recorded Past Shallow Underground Coal Mining Activity

Probable Shallow Underground Coal Mining Activity

Probable shallow coal mine workings show the extent of probable shallow coal mine workings for which no records exist, but where it is likely that workable coal at shallow depths has been mined before records were kept.

Site Location

Ref No. 20155

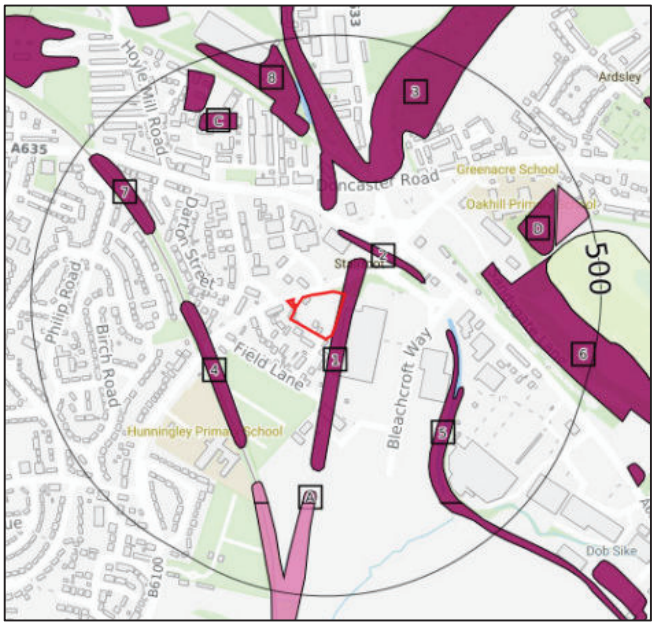
Albion Works, Hunningley Lane, Stairfoot, Barnsley, South Yorkshire, S70 3DY.

FIGURE 5:

COAL AUTHORITY SEARCH

RECORDED SHALLOW MINE WORKINGS & PROBABLE SHALLOW MINE WORKINGS

(NGR 437170,405380)

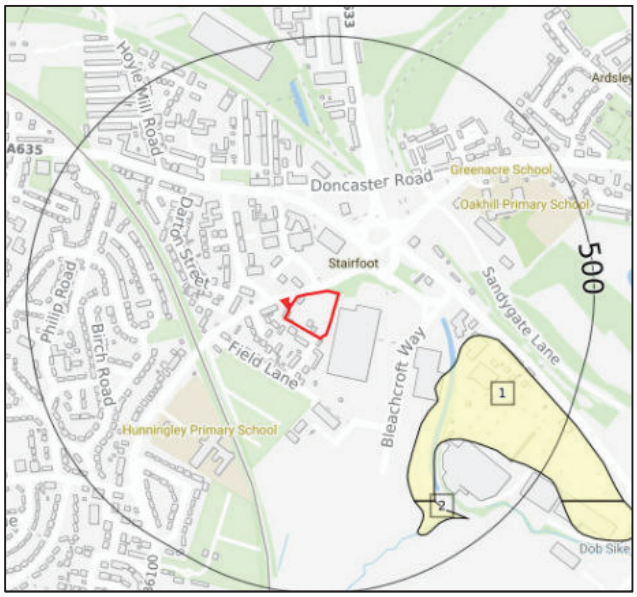


Artificial & Made Ground (Left)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

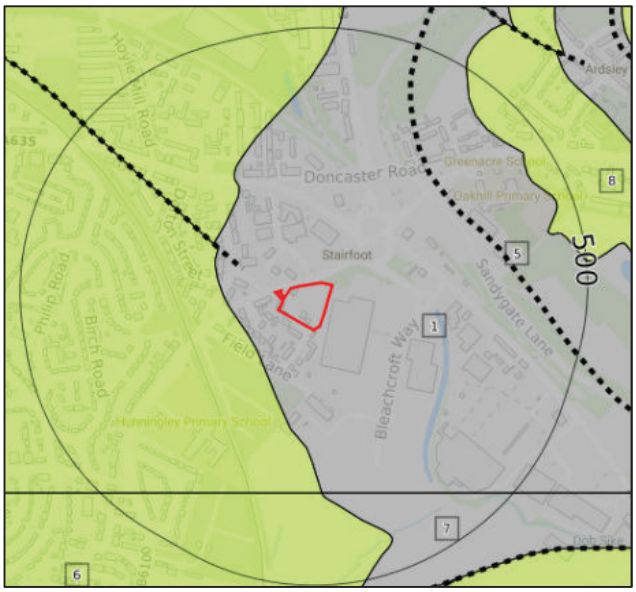
Superficial Deposits (Right)

No superficial deposits on site.



Bedrock Geology (Below)

- Sandstone (Pennine Middle Coal Measures Formation)
- Mudstone, Siltstone & Sandstone (Pennine Middle Coal Measures Formation)
- Geological Fault



Ref No. 20155

Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY

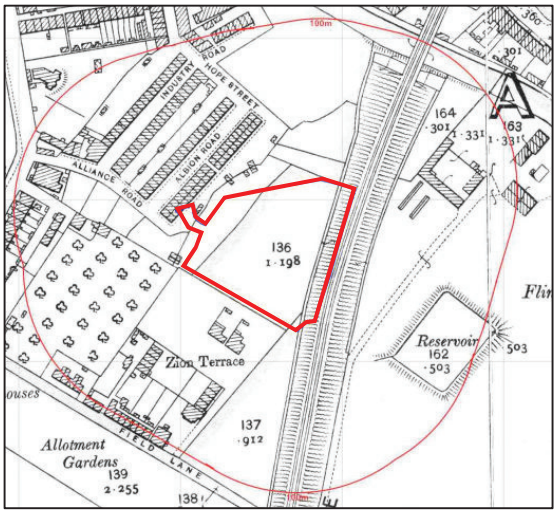
FIGURE 6:

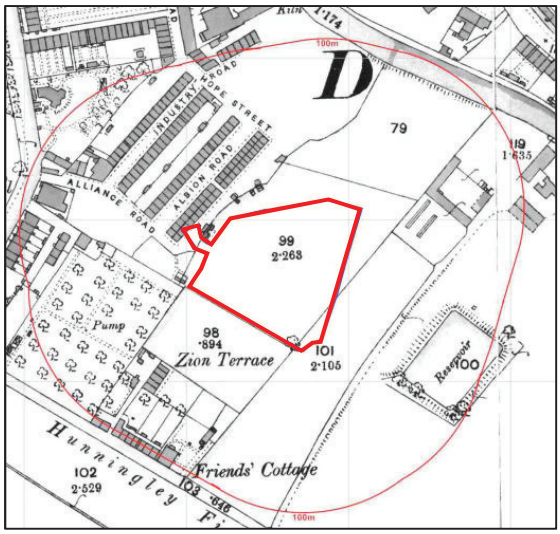
BRITISH GEOLOGICAL SURVEY SEARCH

GEOLOGICAL MAPS

(NGR 437170,405380)

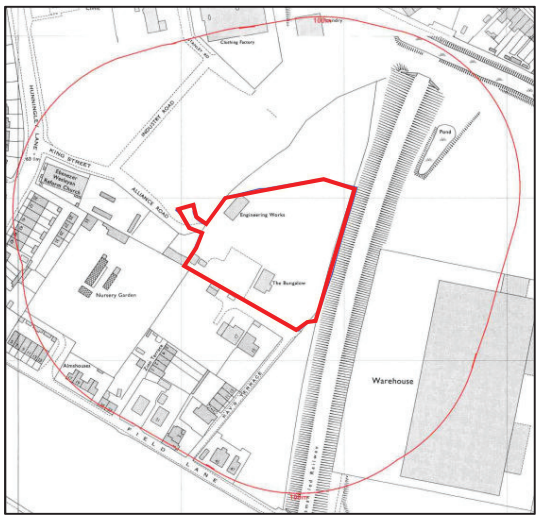
Right:
OS Plan
1892-93
1:2,500



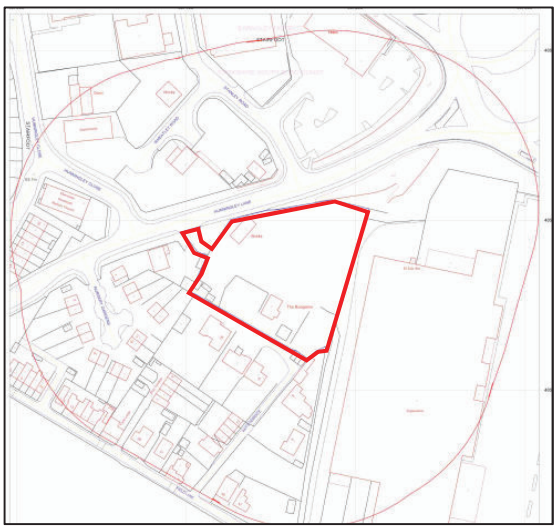


Left:
OS Plan
1906
1:2,500

Right:
OS Plan
1972-74
1:1,250



Below:
OS Plan
2003
1:1,250



Ref No. 20155

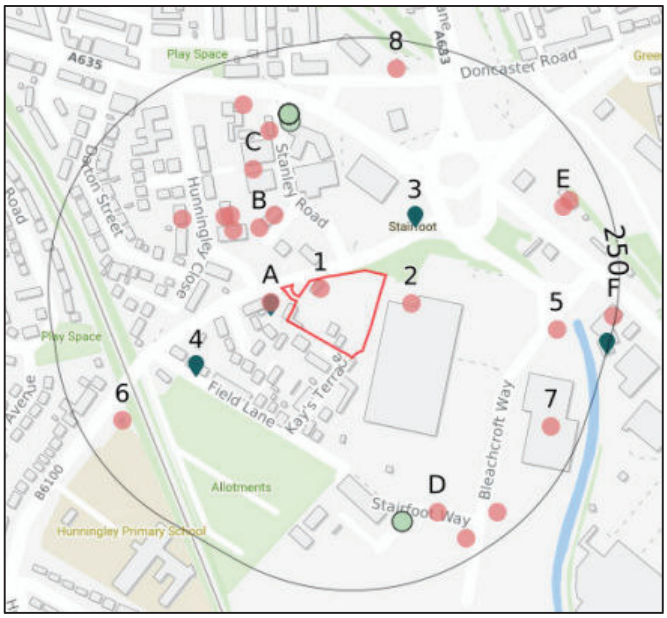
Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY

FIGURE 7:

ORDNANCE SURVEY SEARCH

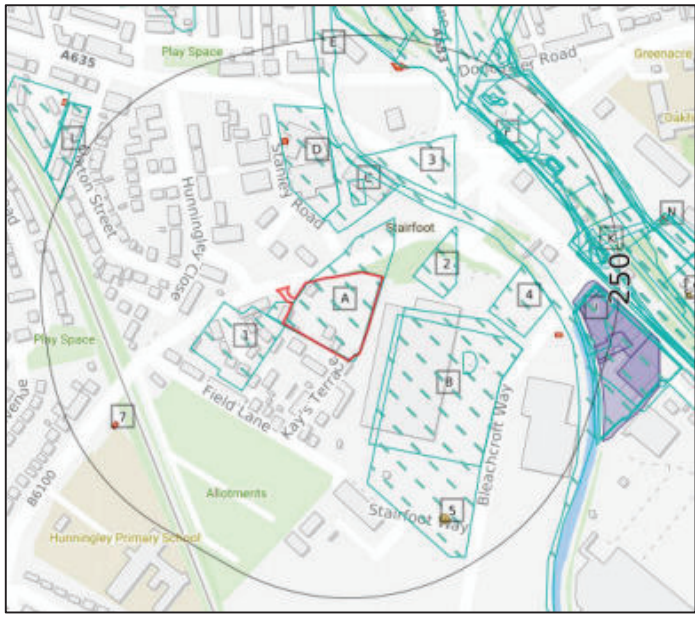
SITE HISTORY

(NGR 437170,405380)



Current Industrial Land Use (Left)

- Recent industrial land uses
- Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

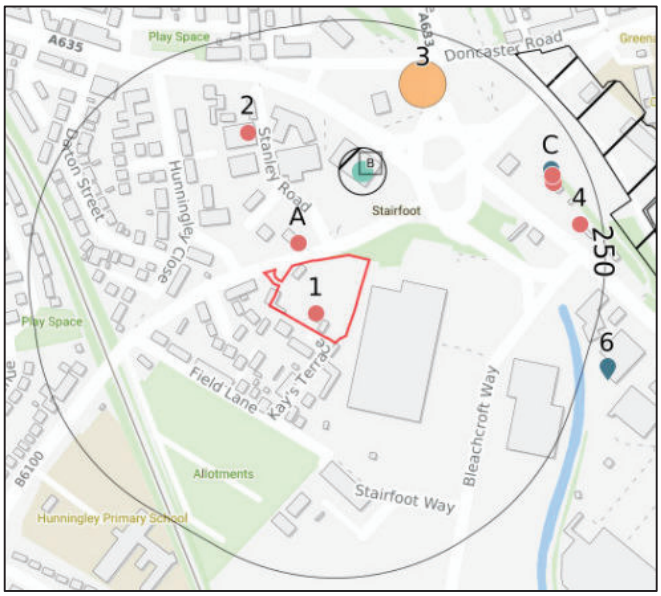


Historic Land Use (Right)

- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

Waste and Landfill Sites (Below)

- Active or recent landfill
- Historical landfill (EA/NRW)
- Historical landfill (BGS)
- Historical landfill (LA/OS)
- Historical waste sites
- Licensed waste sites
- Waste exemptions



Ref No. 20155

**Albion Works, Hunningley Lane,
Stairfoot, Barnsley,
South Yorkshire, S70 3DY**

FIGURE 8:

POENTIAL CONTAMINATIVE ACTIVITIES

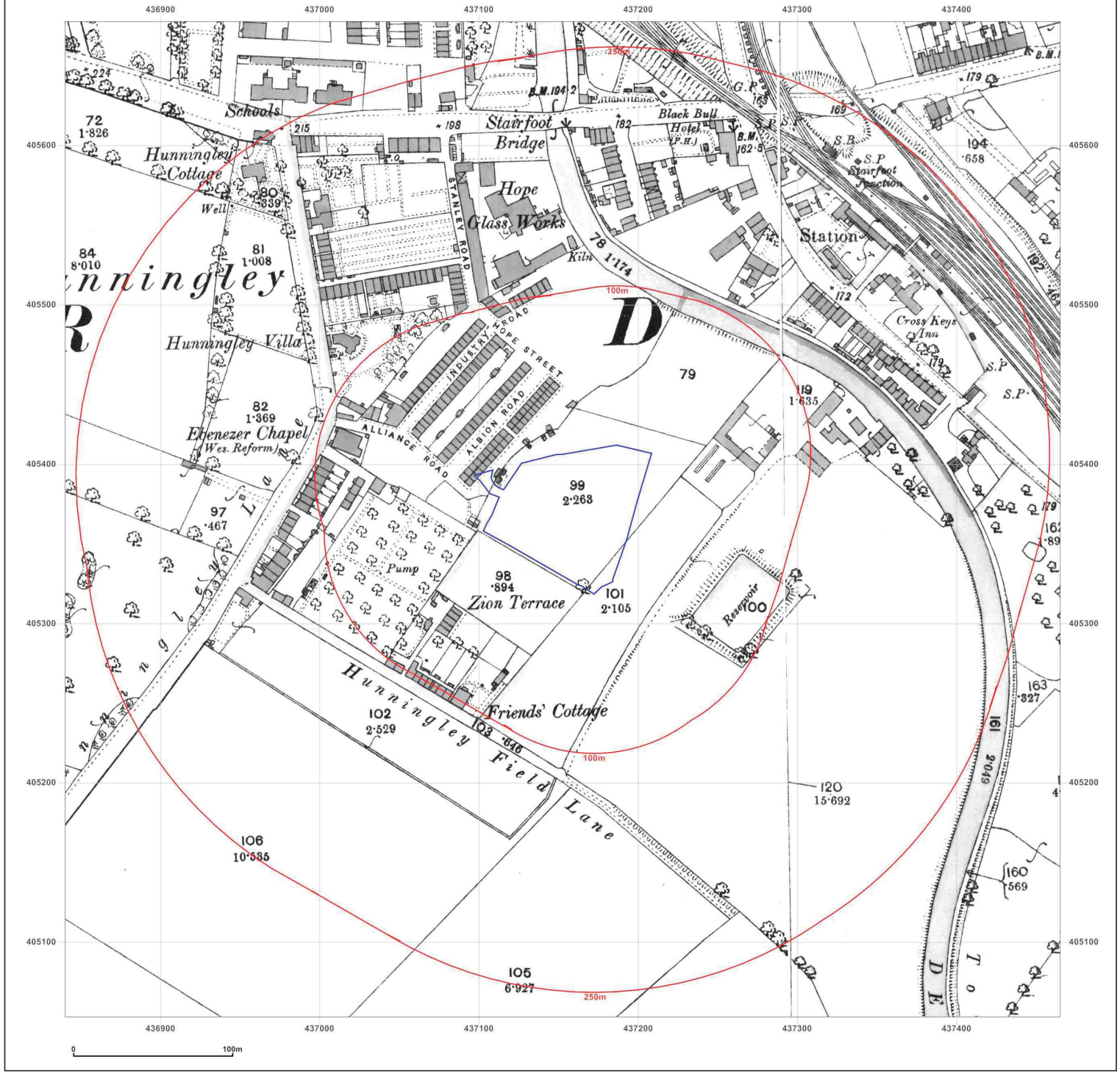
(NGR 437170,405380)

APPENDIX B

Historical Maps

Large Scale Ordnance Survey Maps (1:2500 and 1:1250 scales)

Small Scale Ordnance Survey Maps (1:10,560 and 1:10,000 scales)



Groundsure INSIGHTS

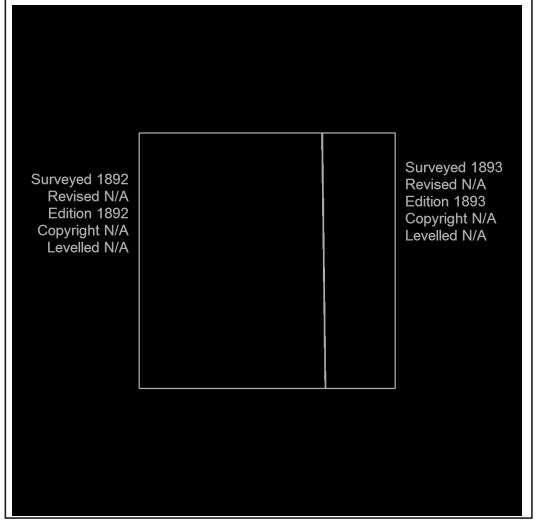
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1892-1893
Scale: 1:2,500
Printed at: 1:2,500

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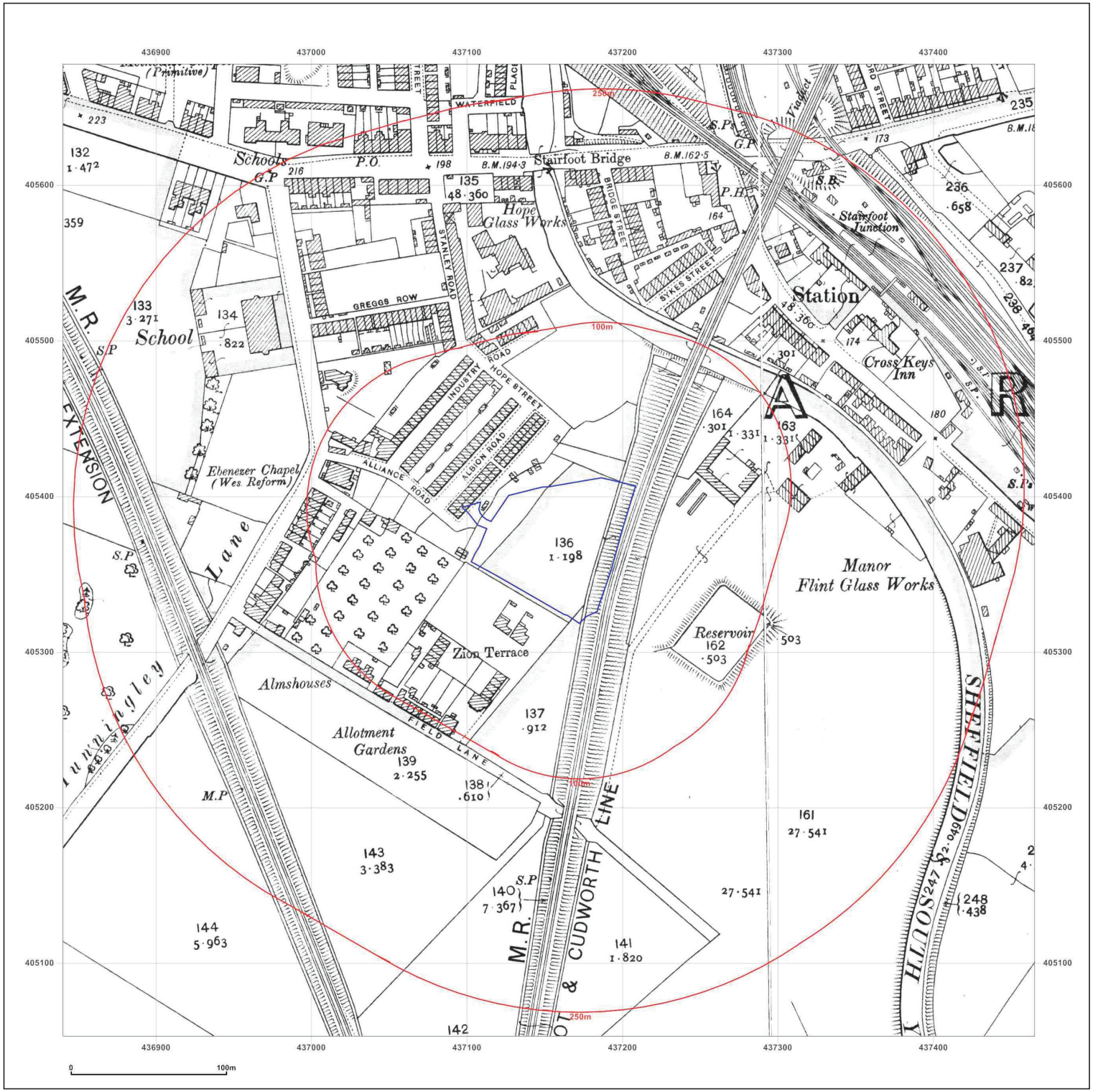
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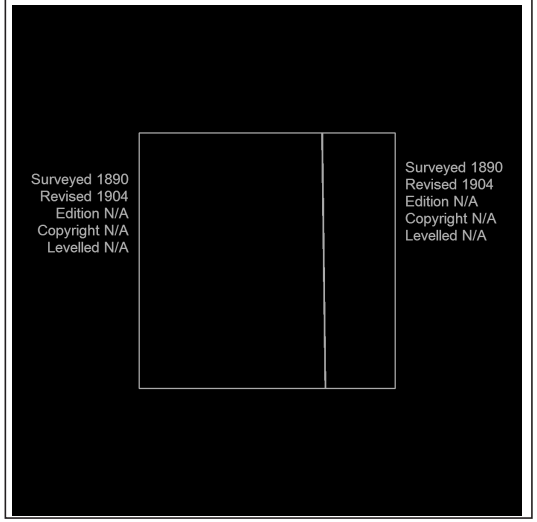
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1906
Scale: 1:2,500
Printed at: 1:2,500

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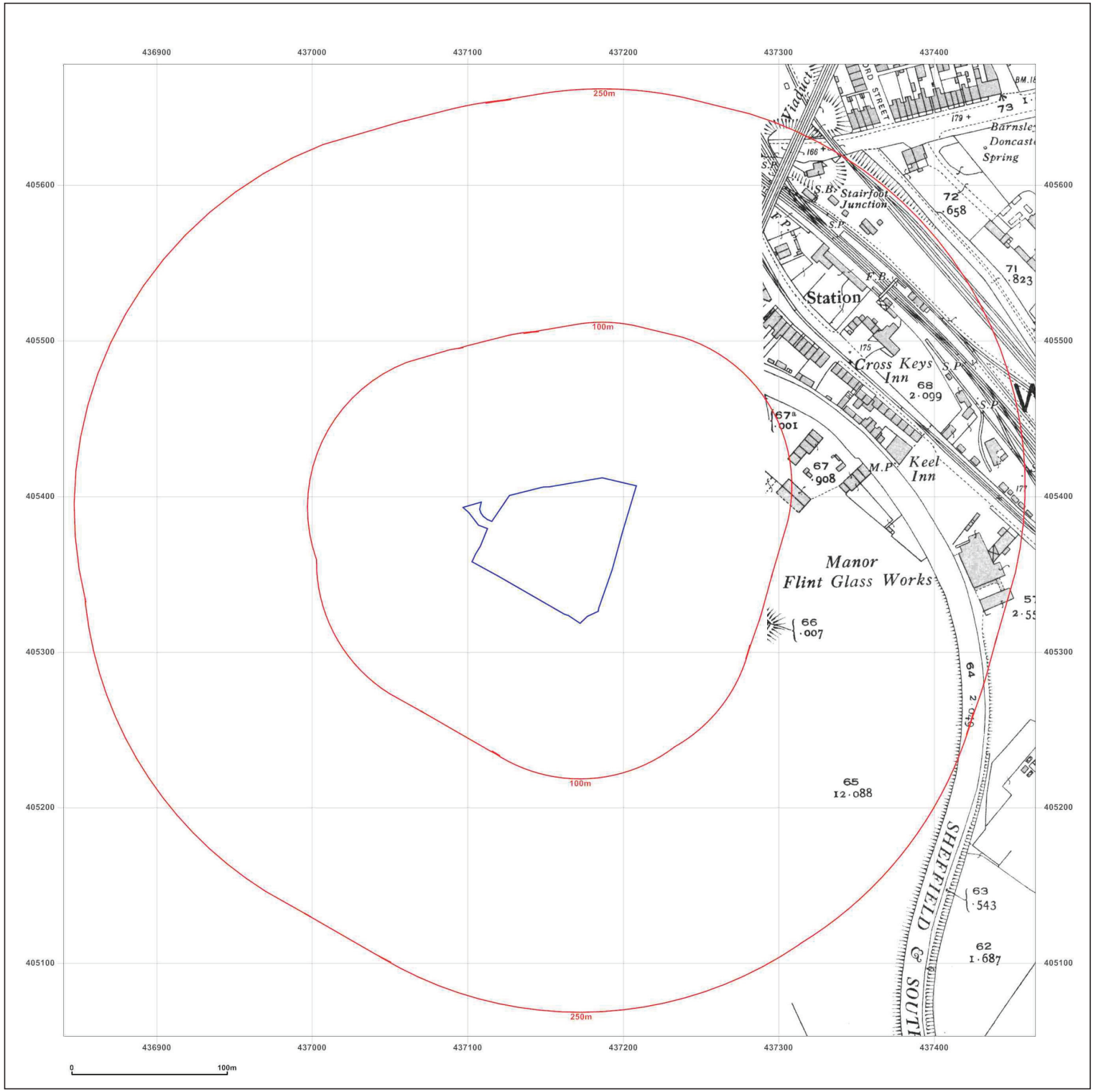
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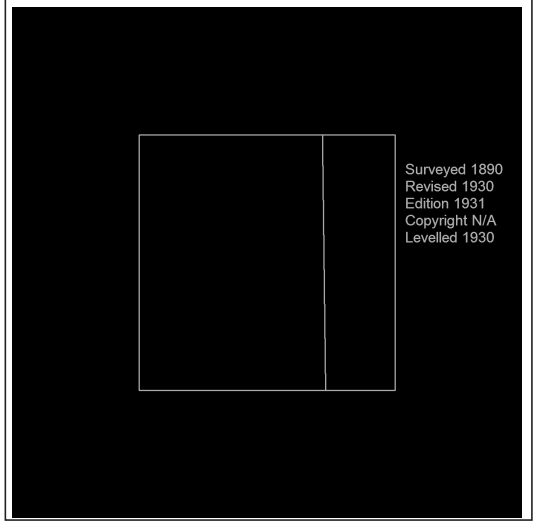
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1931
Scale: 1:2,500
Printed at: 1:2,500

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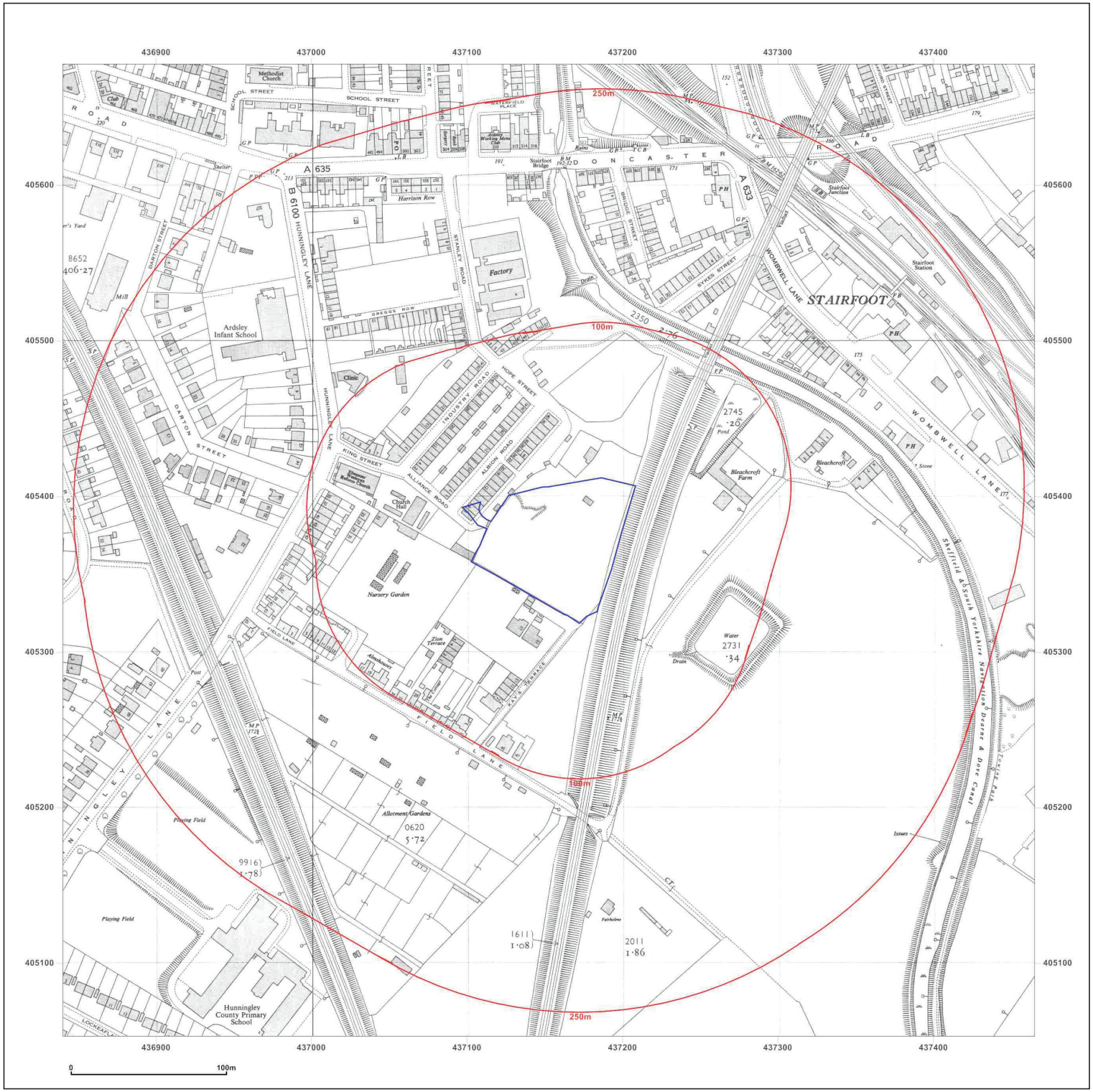
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Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1960
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1930

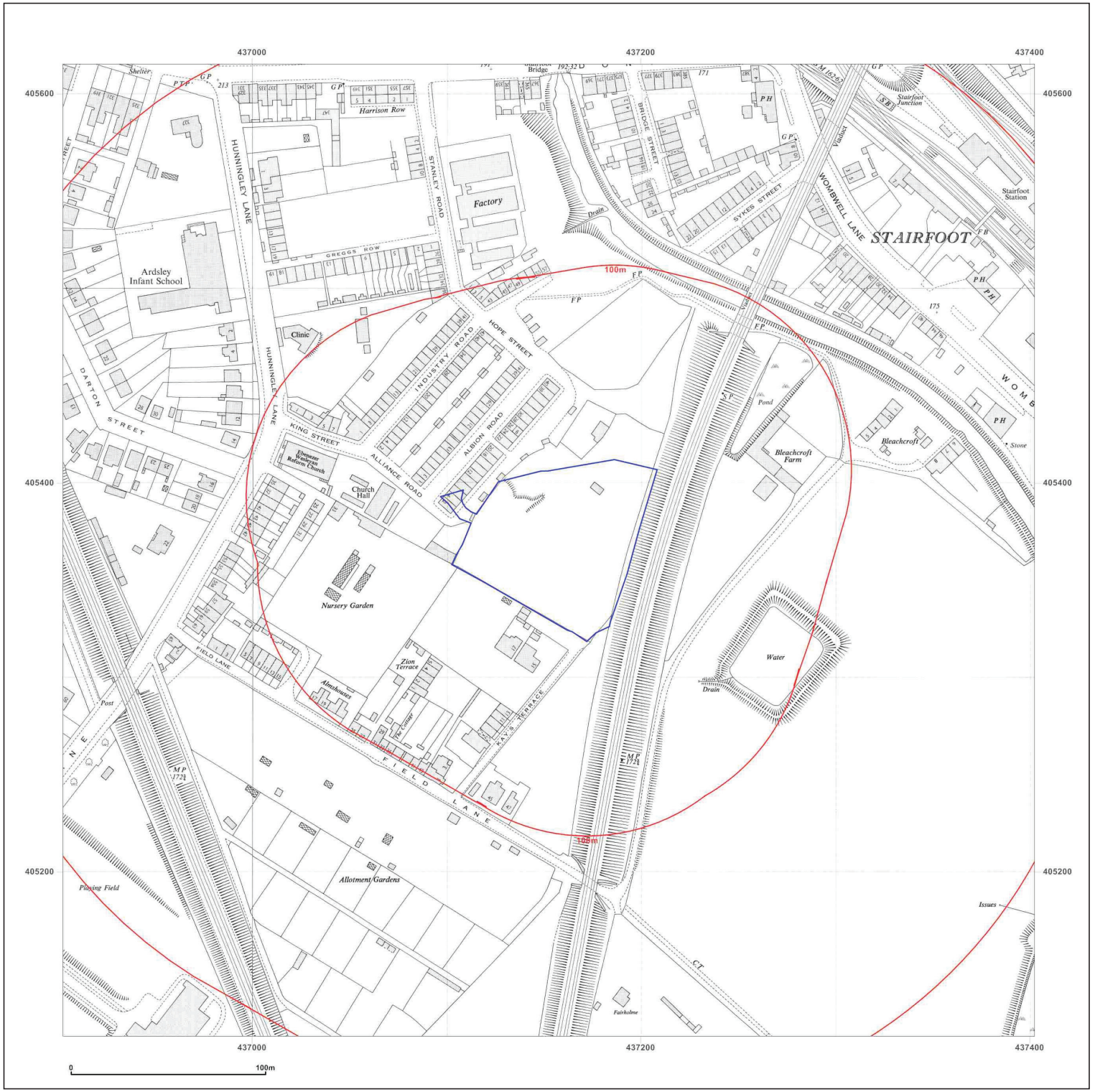
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Site Details:

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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1960-1961
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1930

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1960
Levelled 1929

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Levelled 1930

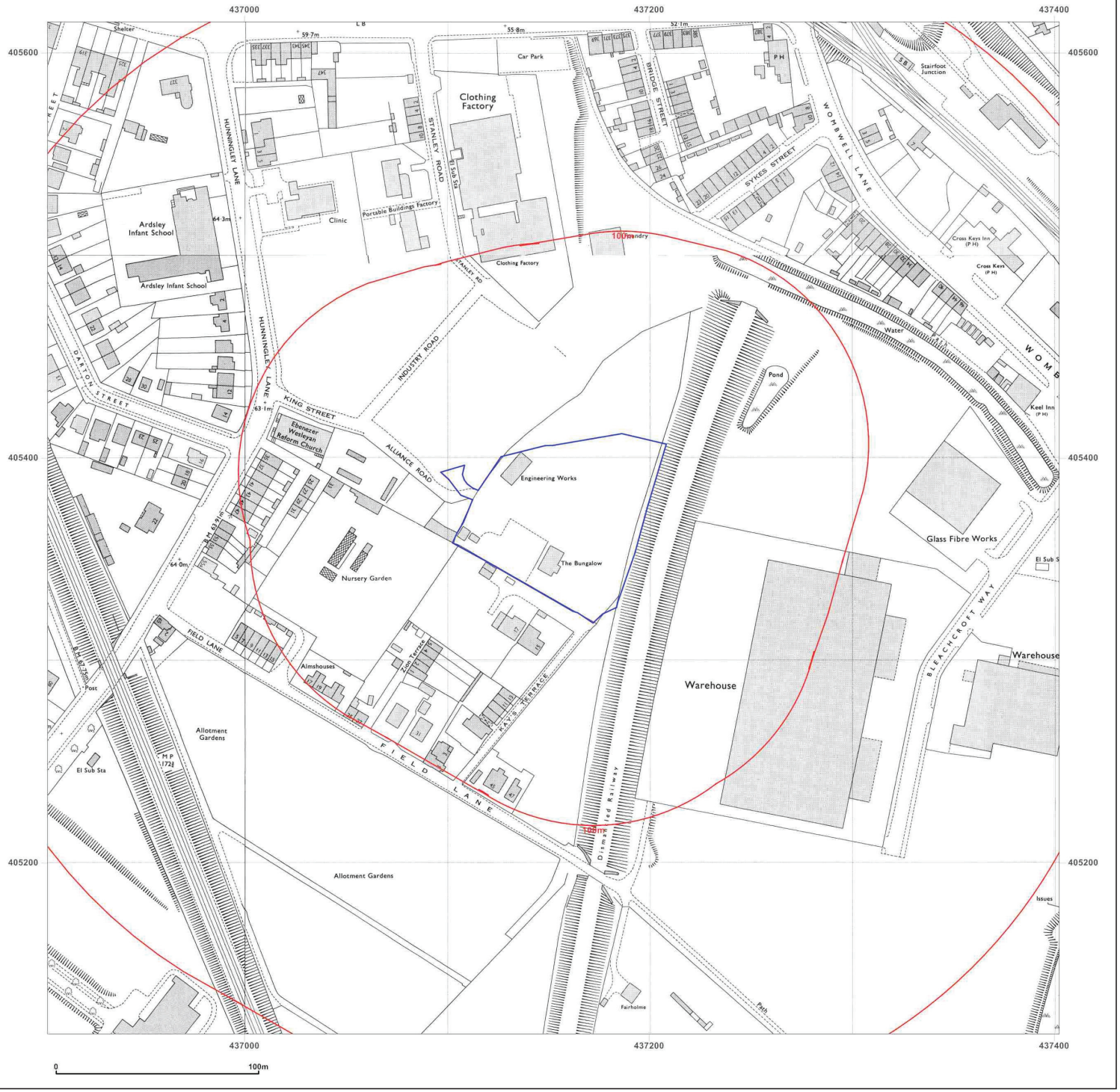
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Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1972-1974
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1960
Revised 1973
Edition N/A
Copyright 1974
Levelled 1963

Surveyed 1960
Revised 1972
Edition N/A
Copyright 1973
Levelled 1964

Surveyed 1960
Revised 1973
Edition N/A
Copyright 1973
Levelled 1963

Surveyed 1960
Revised 1971
Edition N/A
Copyright 1972
Levelled 1963

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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: **1982-1987**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1963
Revised 1987
Edition N/A
Copyright 1987
Levelled 1963

Surveyed 1964
Revised 1982
Edition N/A
Copyright 1982
Levelled 1964

Surveyed 1964
Revised 1982
Edition N/A
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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1990-1993
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright 1993 Levelled N/A	Surveyed 1964 Revised 1990 Edition N/A Copyright 1990 Levelled 1964
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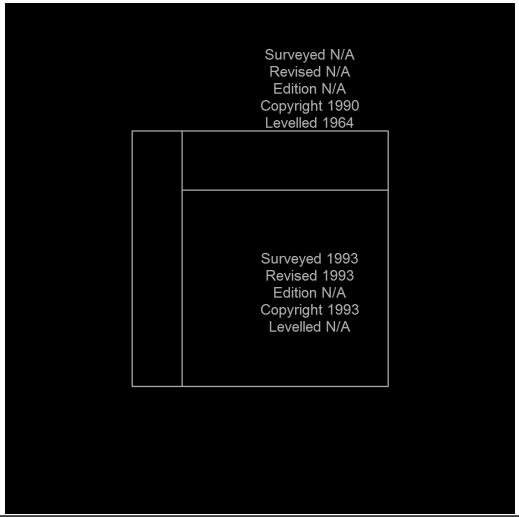
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: **1990-1993**
Scale: 1:1,250
Printed at: 1:2,000

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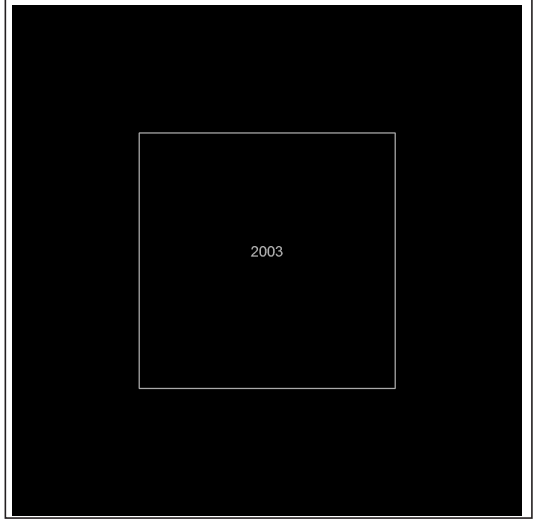
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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

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

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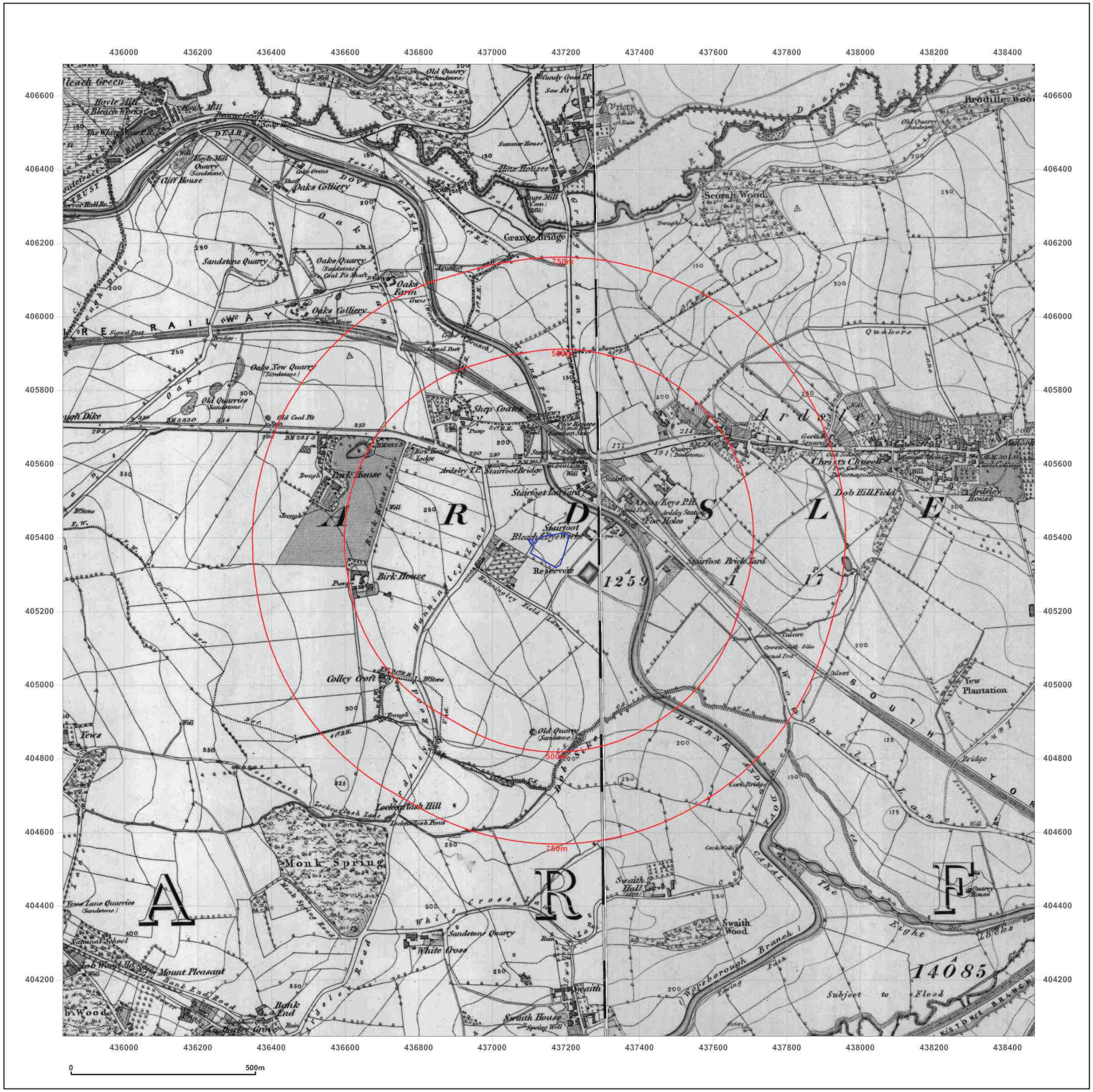
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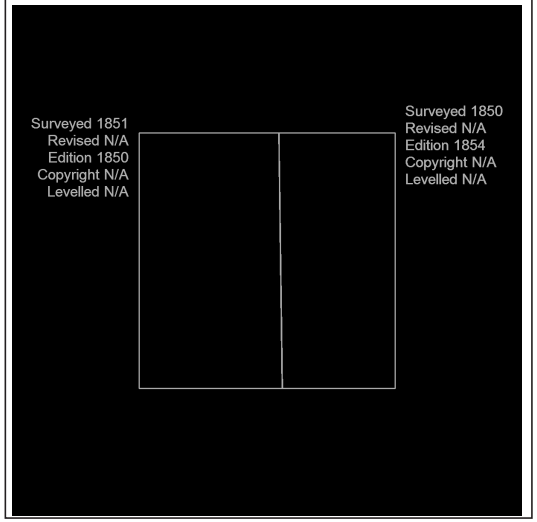
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Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
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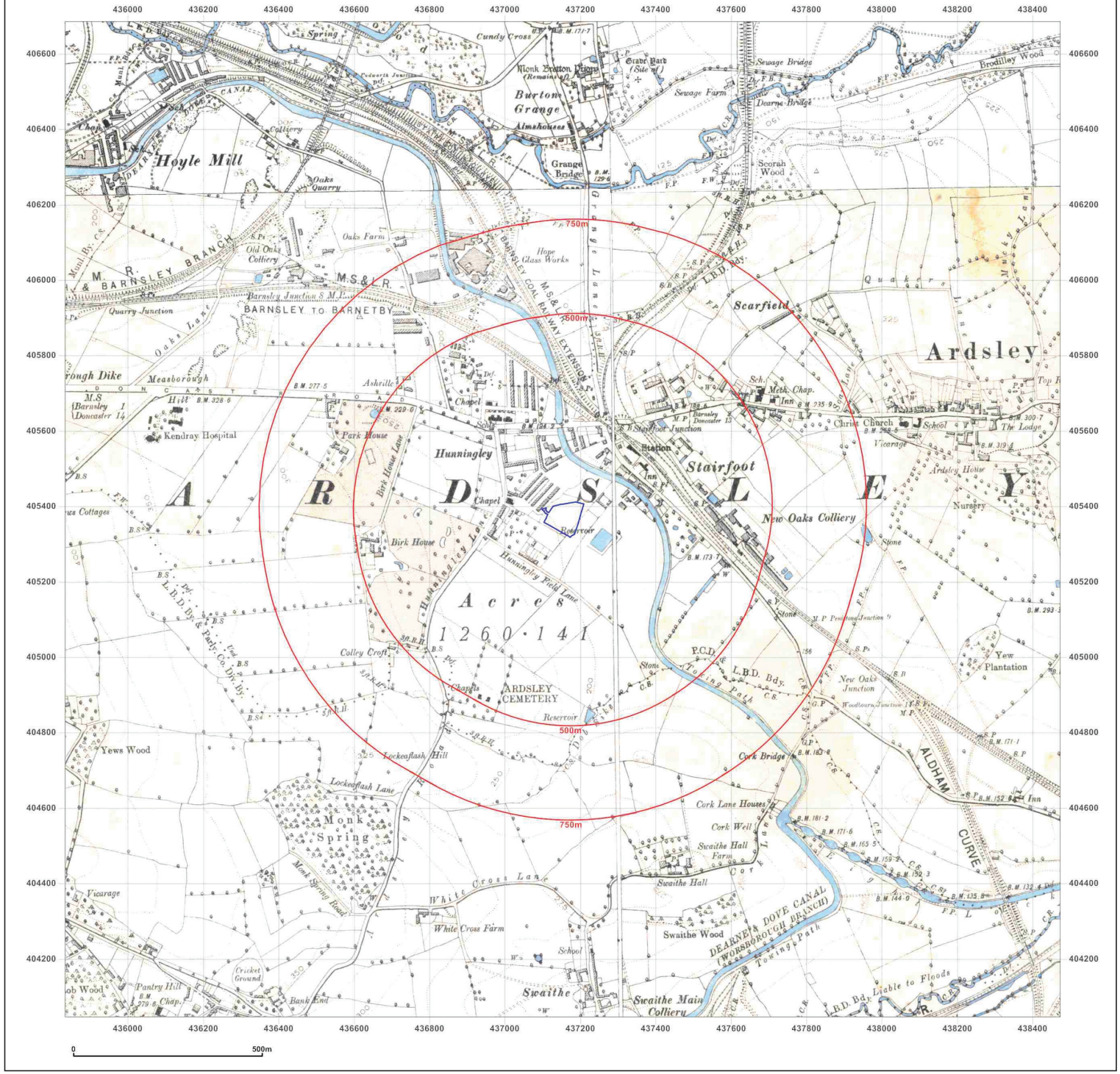
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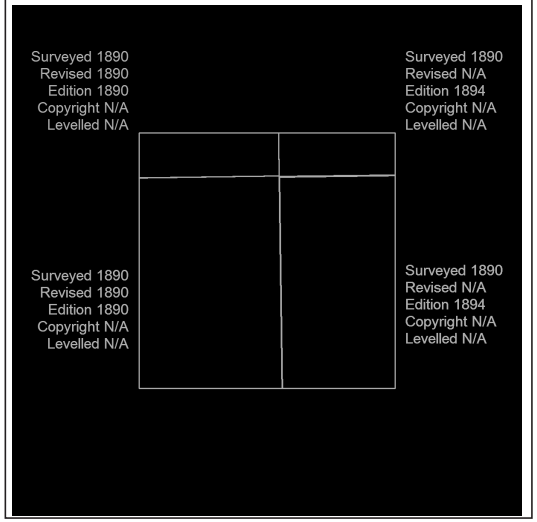
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1890-1894
Scale: 1:10,560
Printed at: 1:10,560

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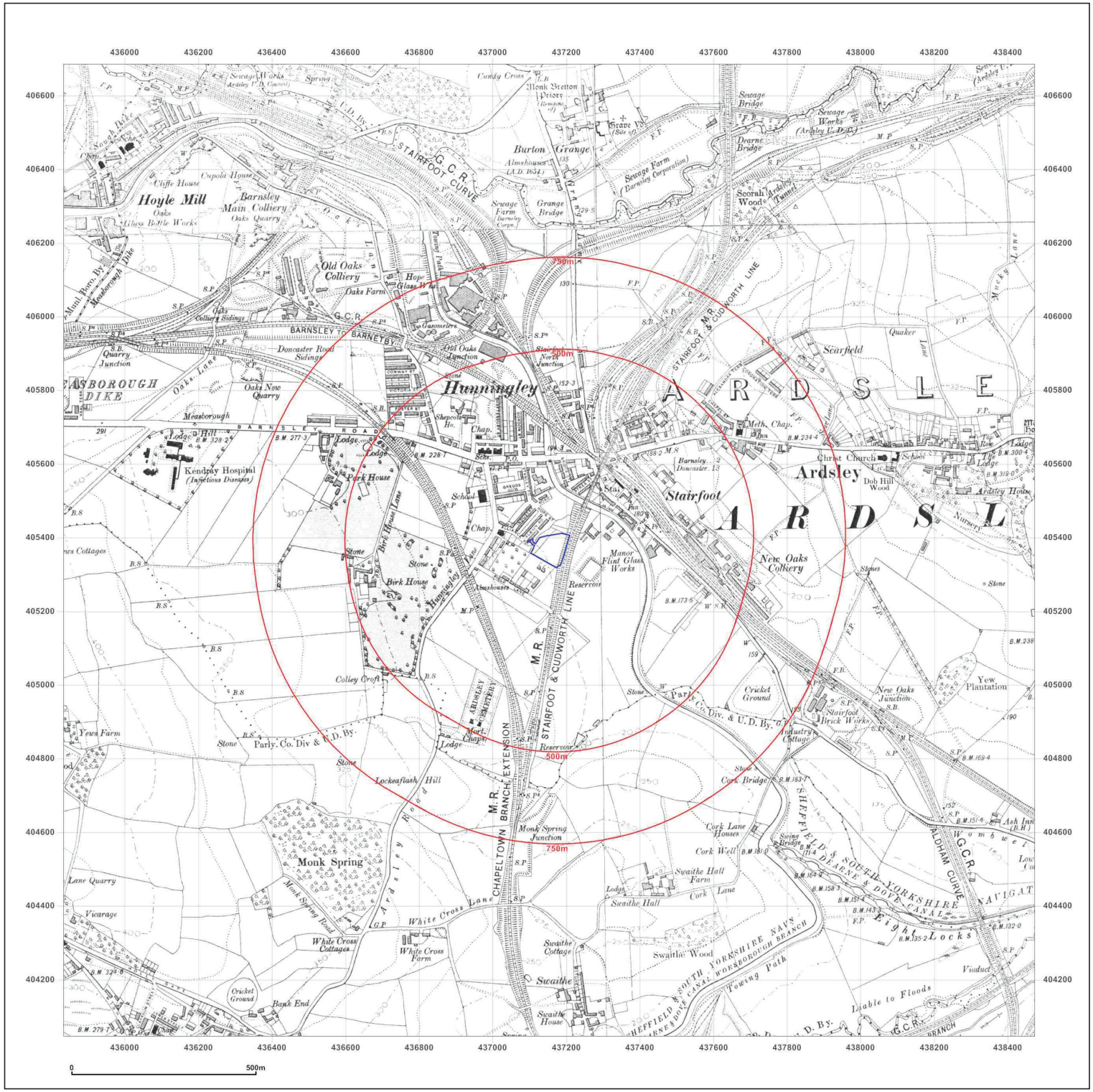
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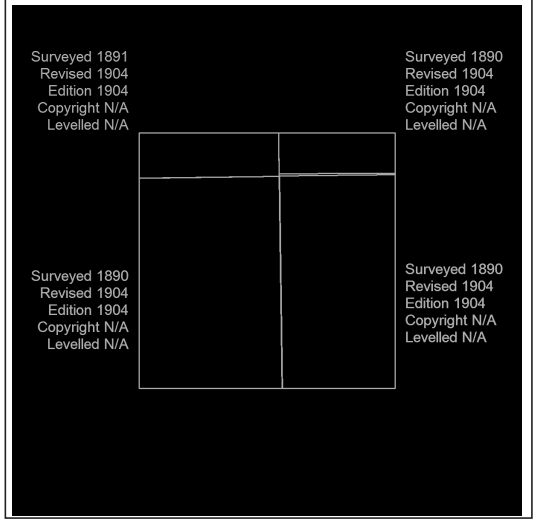
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1904
Scale: 1:10,560
Printed at: 1:10,560

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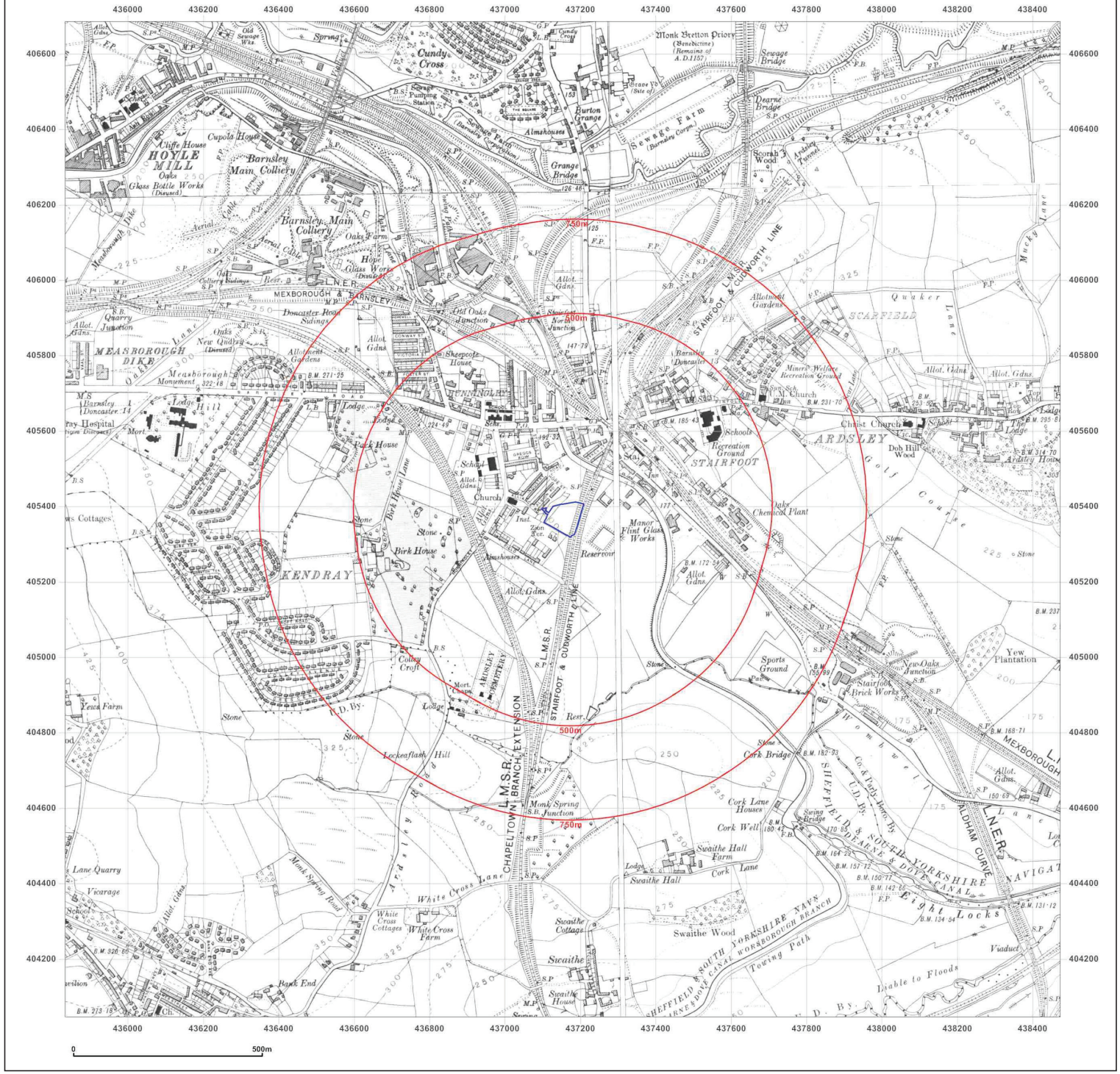
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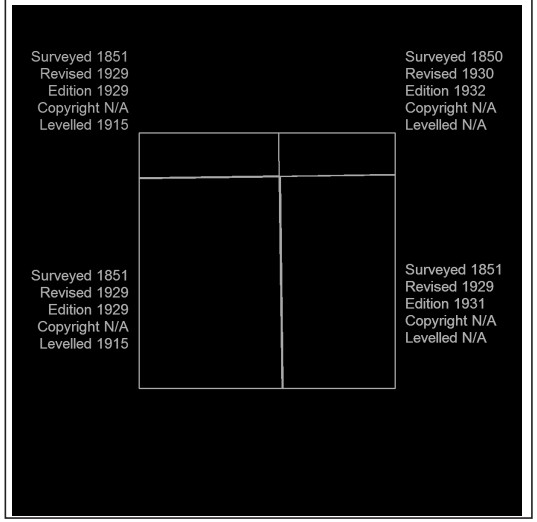
Site Details:

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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
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Printed at: 1:10,560

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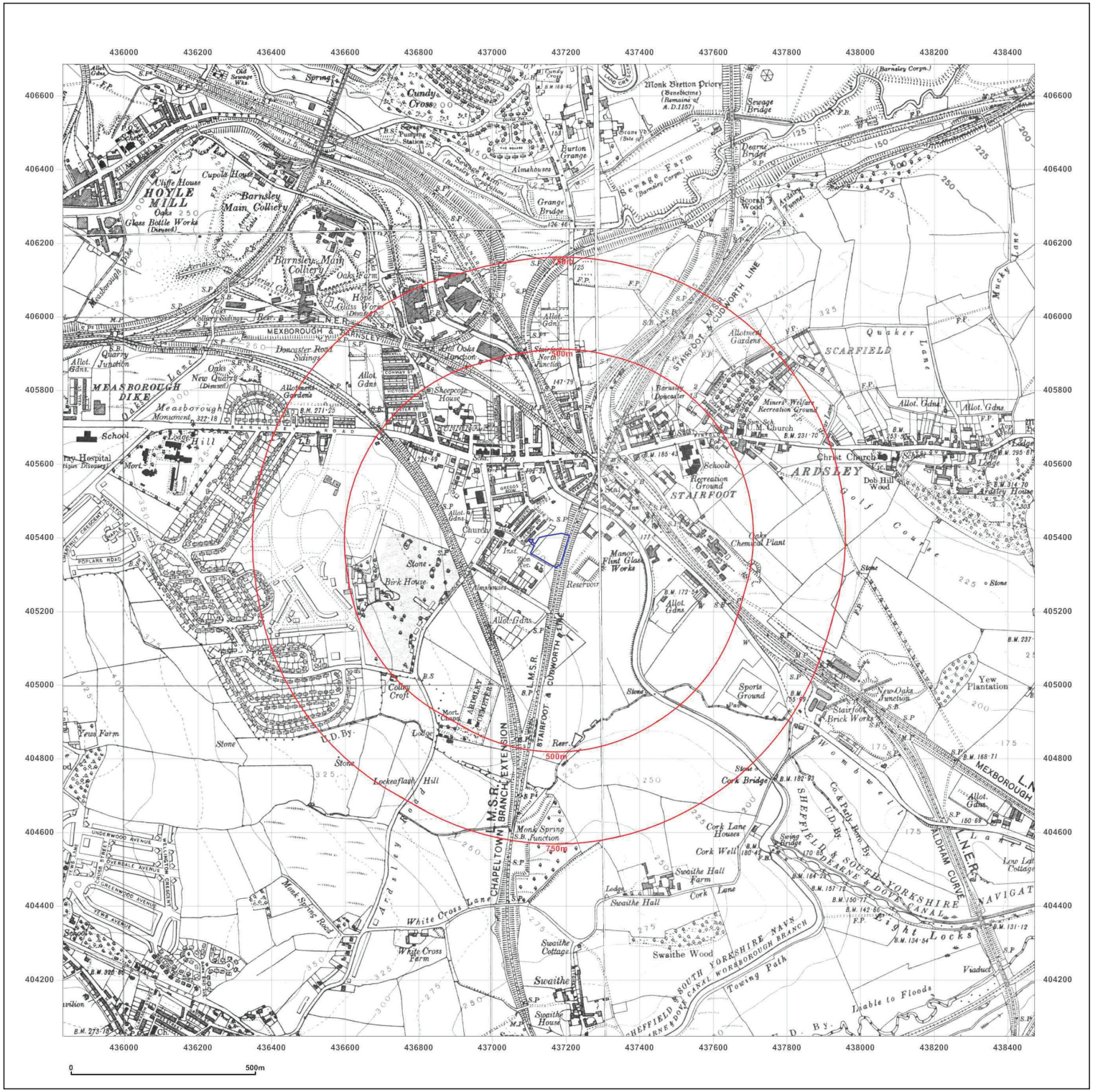
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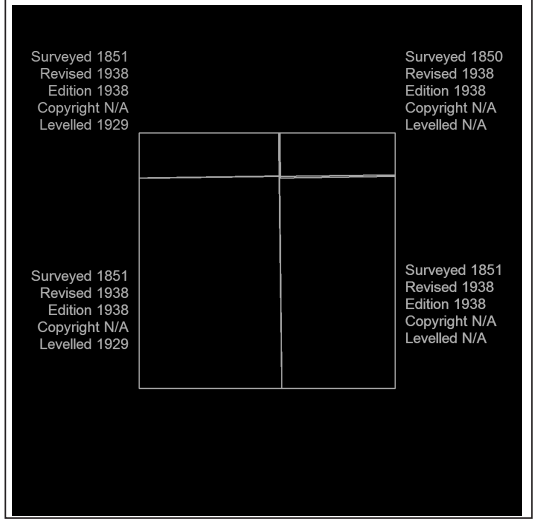
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1938
Scale: 1:10,560
Printed at: 1:10,560

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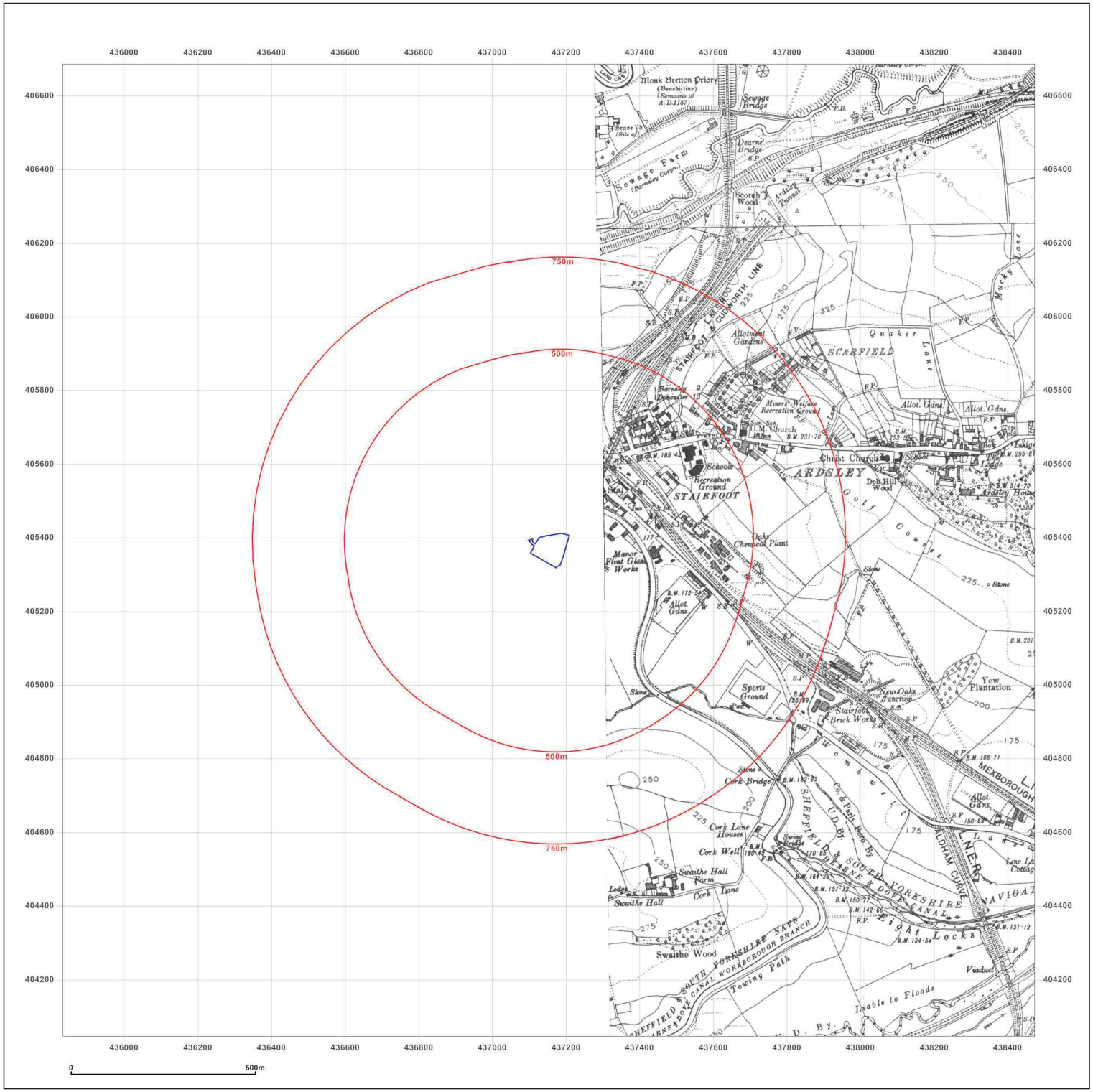
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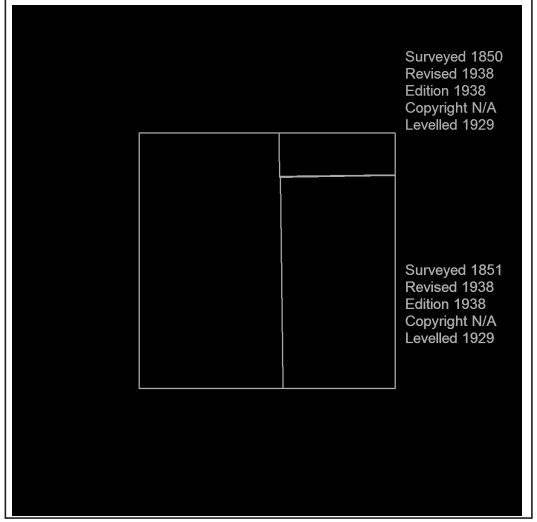
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1938
Scale: 1:10,560
Printed at: 1:10,560

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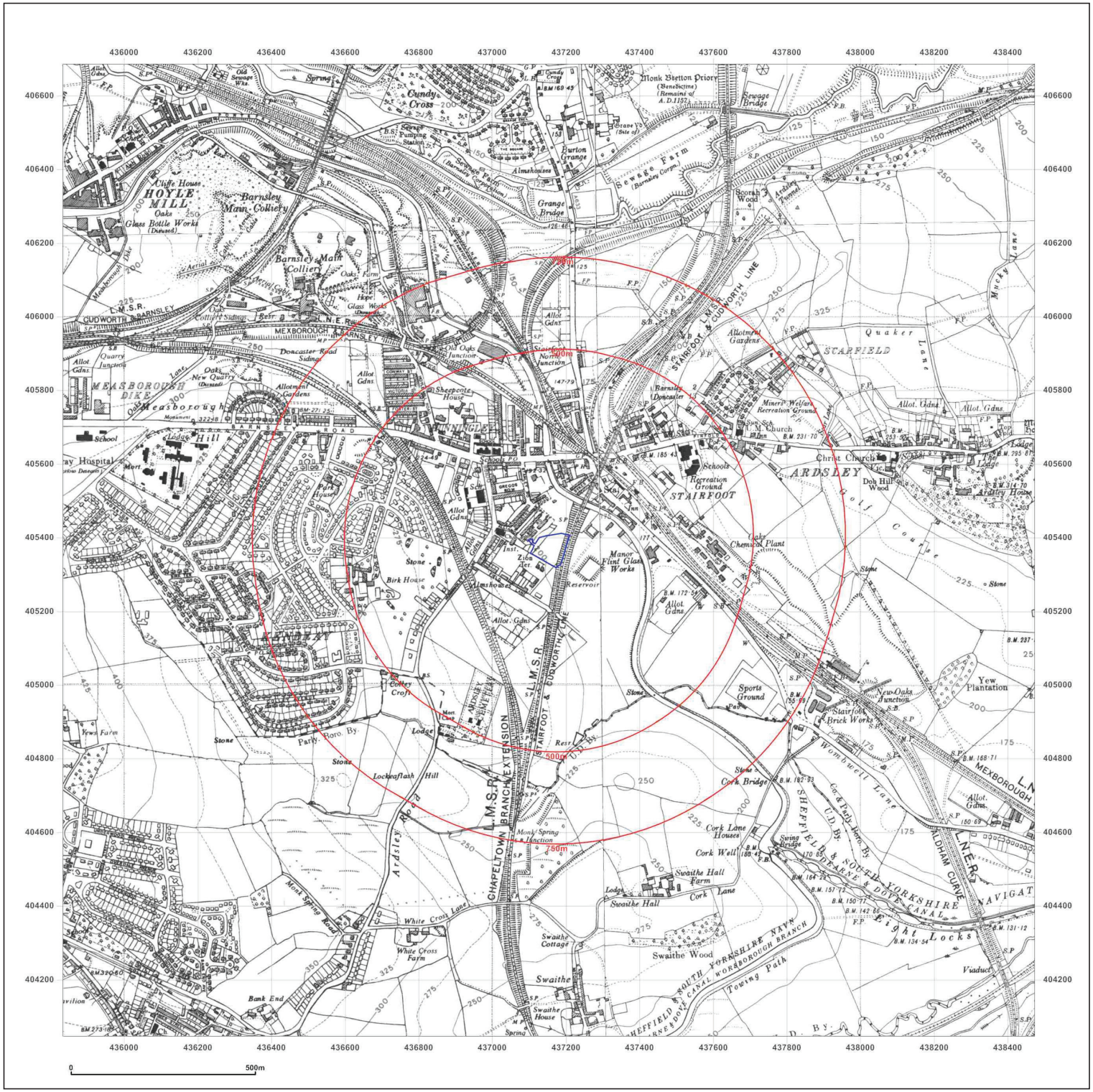
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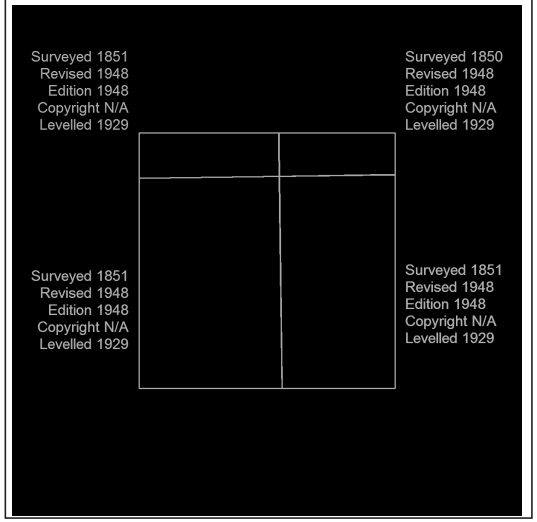
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: County Series
Map date: 1948
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Printed at: 1:10,560

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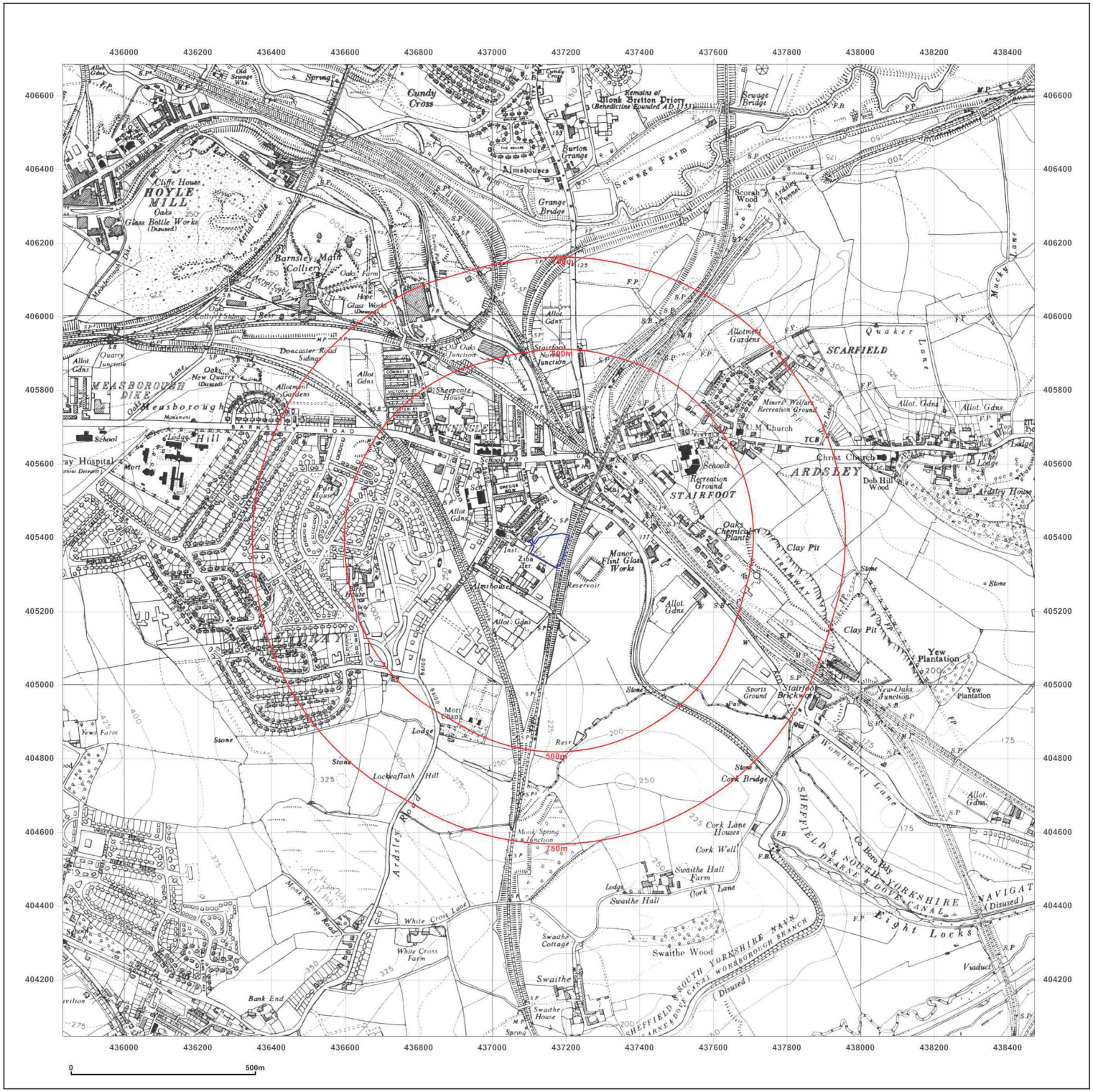
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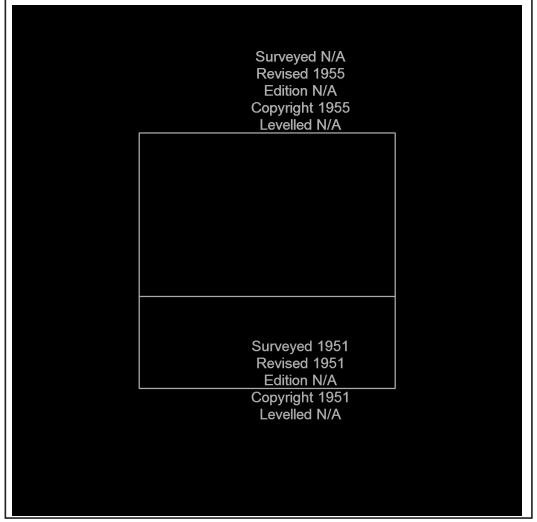
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: Provisional
Map date: **1951-1955**
Scale: 1:10,560
Printed at: 1:10,560

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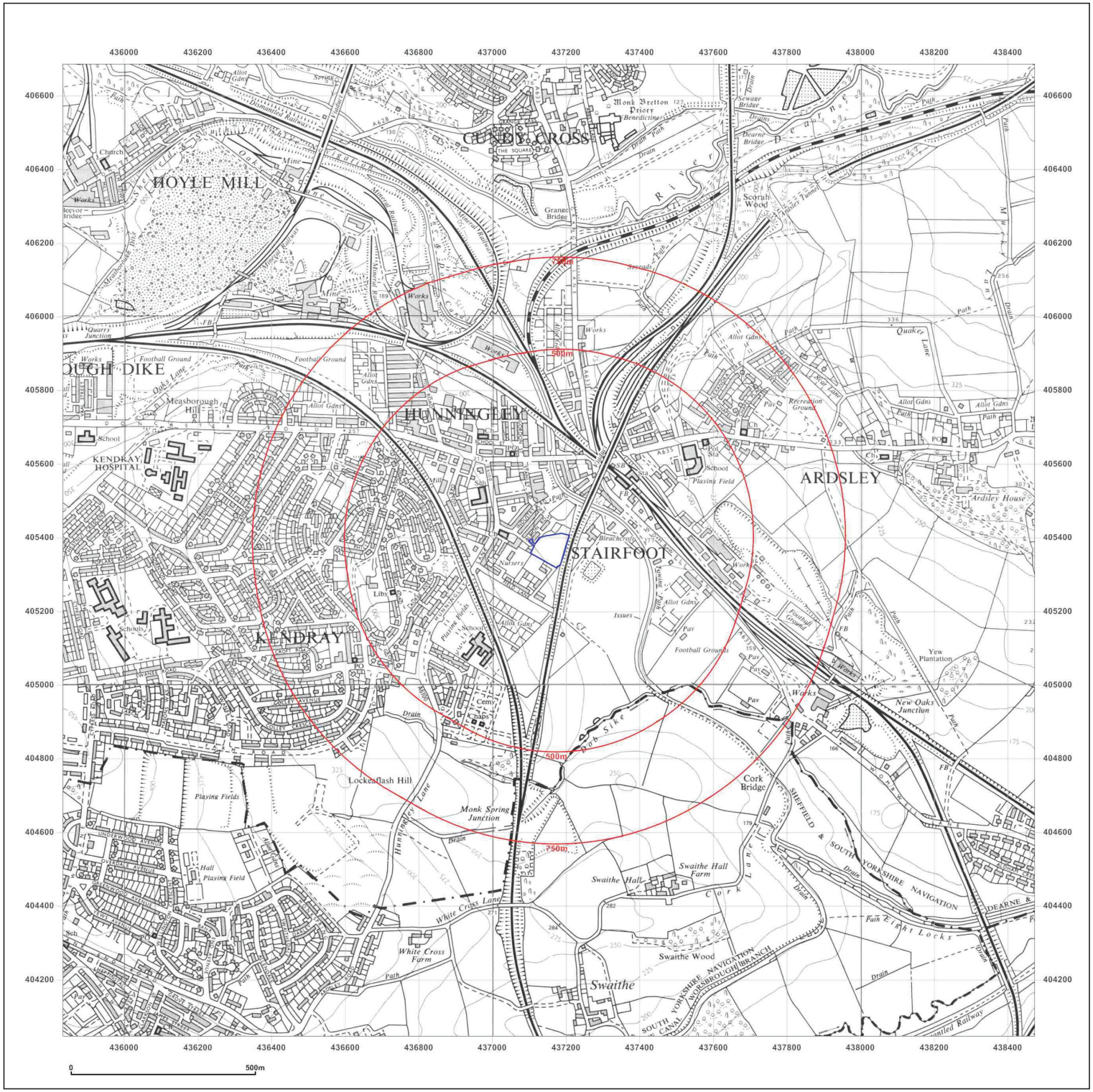
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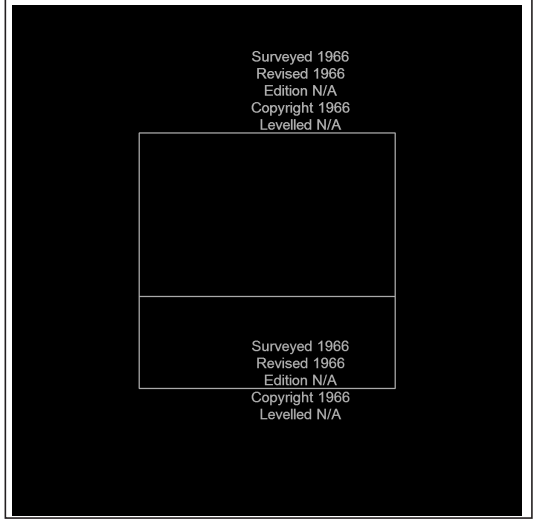
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: Provisional
Map date: 1966
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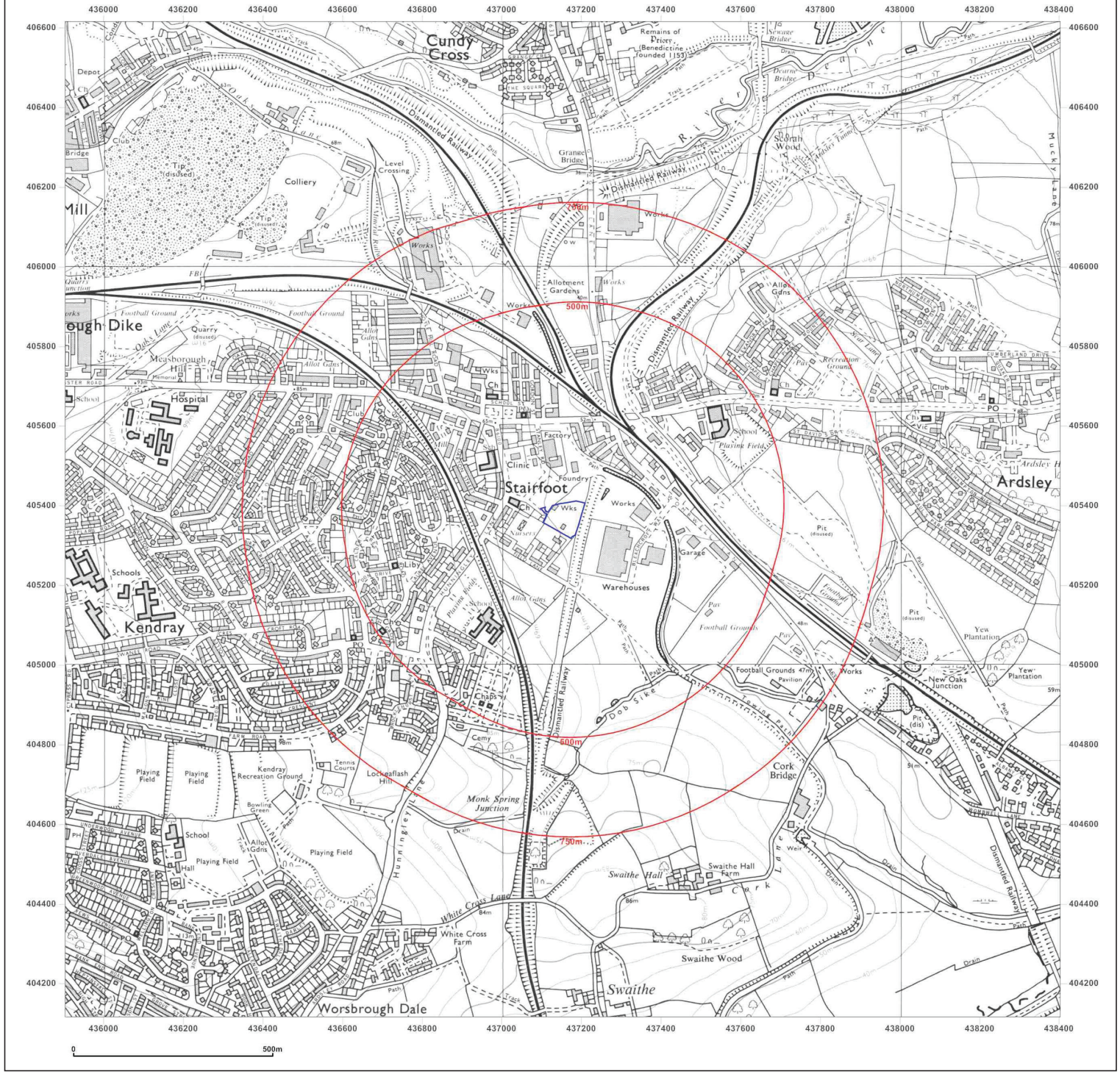
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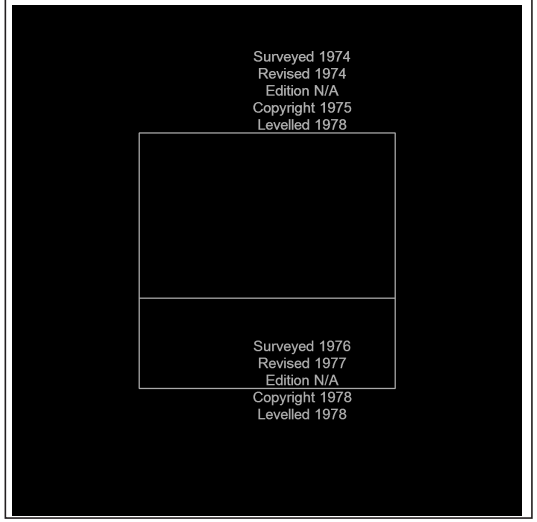
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1974-1977
Scale: 1:10,000
Printed at: 1:10,000

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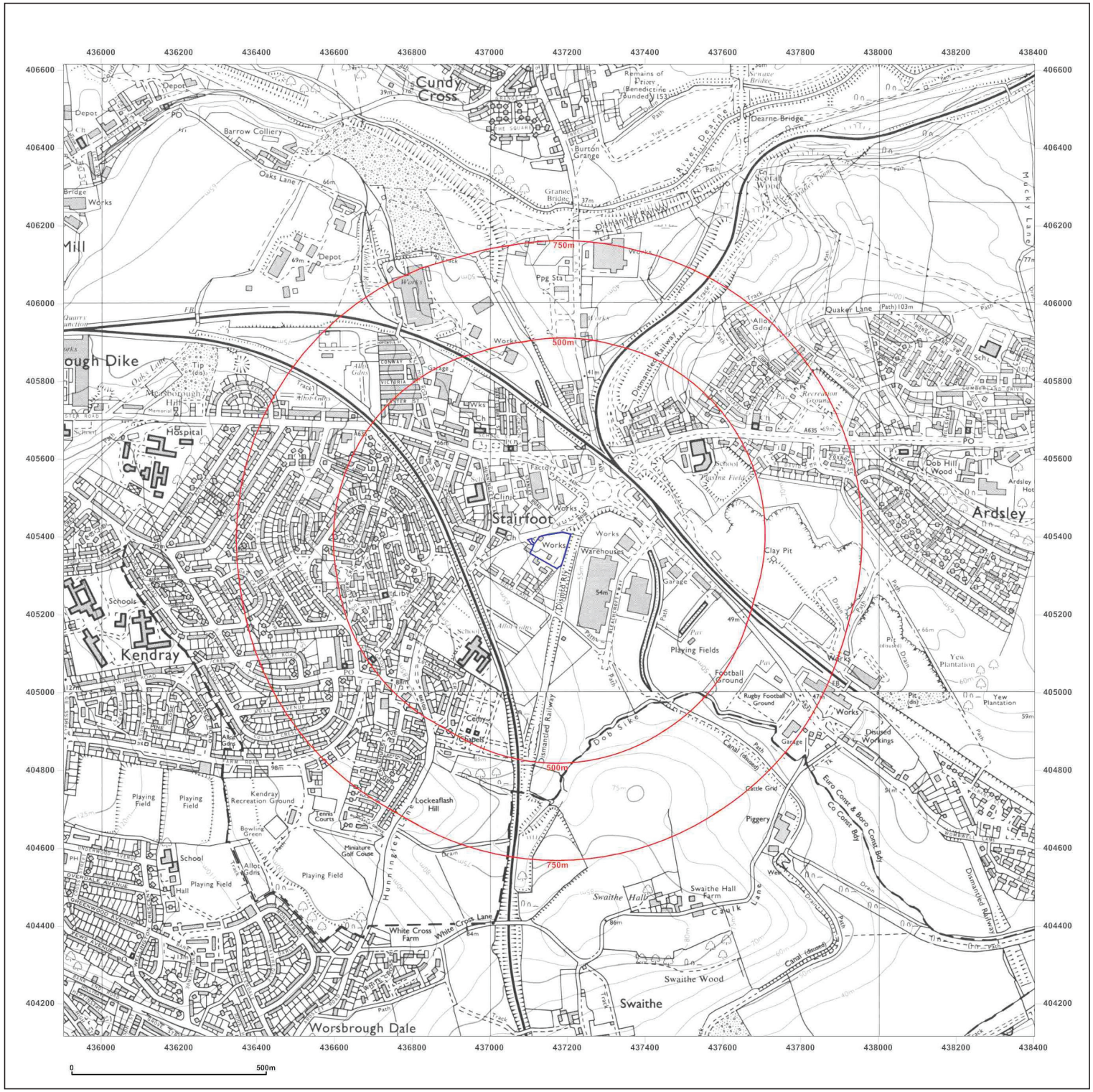
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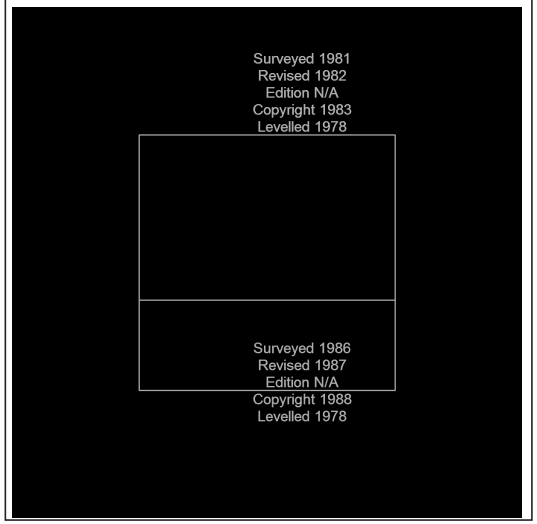
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: **1982-1987**
Scale: 1:10,000
Printed at: 1:10,000

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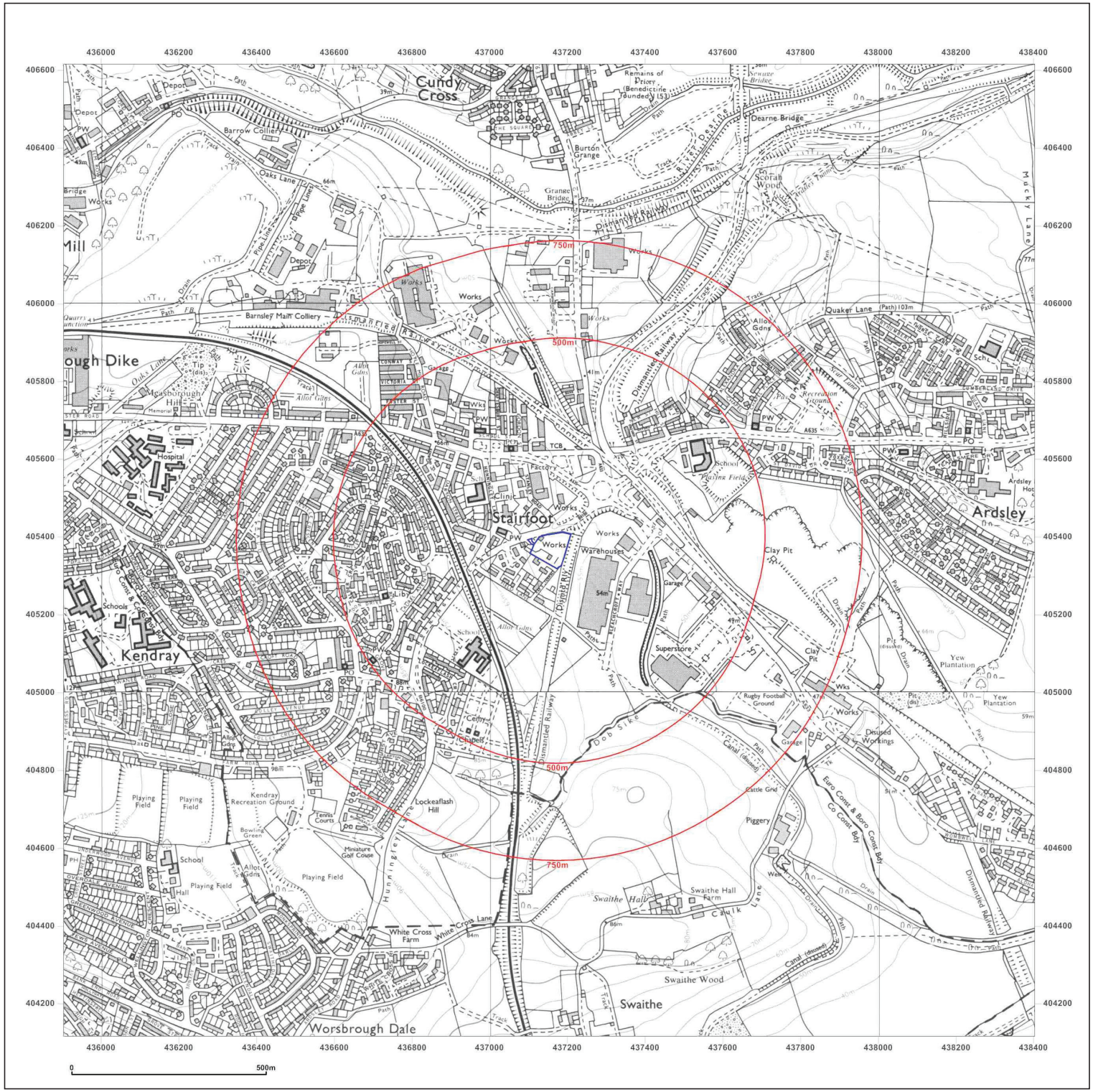
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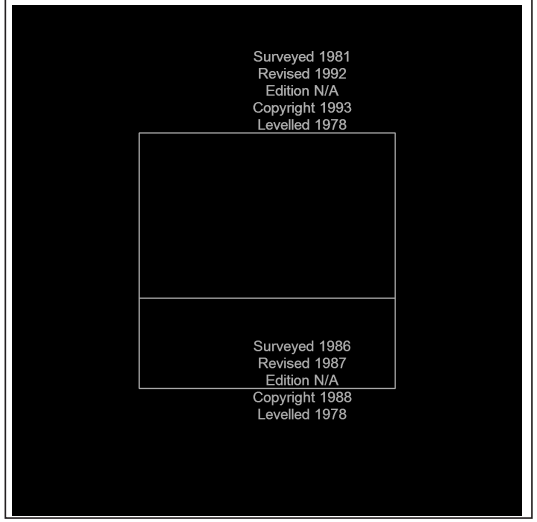
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 1987-1992
Scale: 1:10,000
Printed at: 1:10,000

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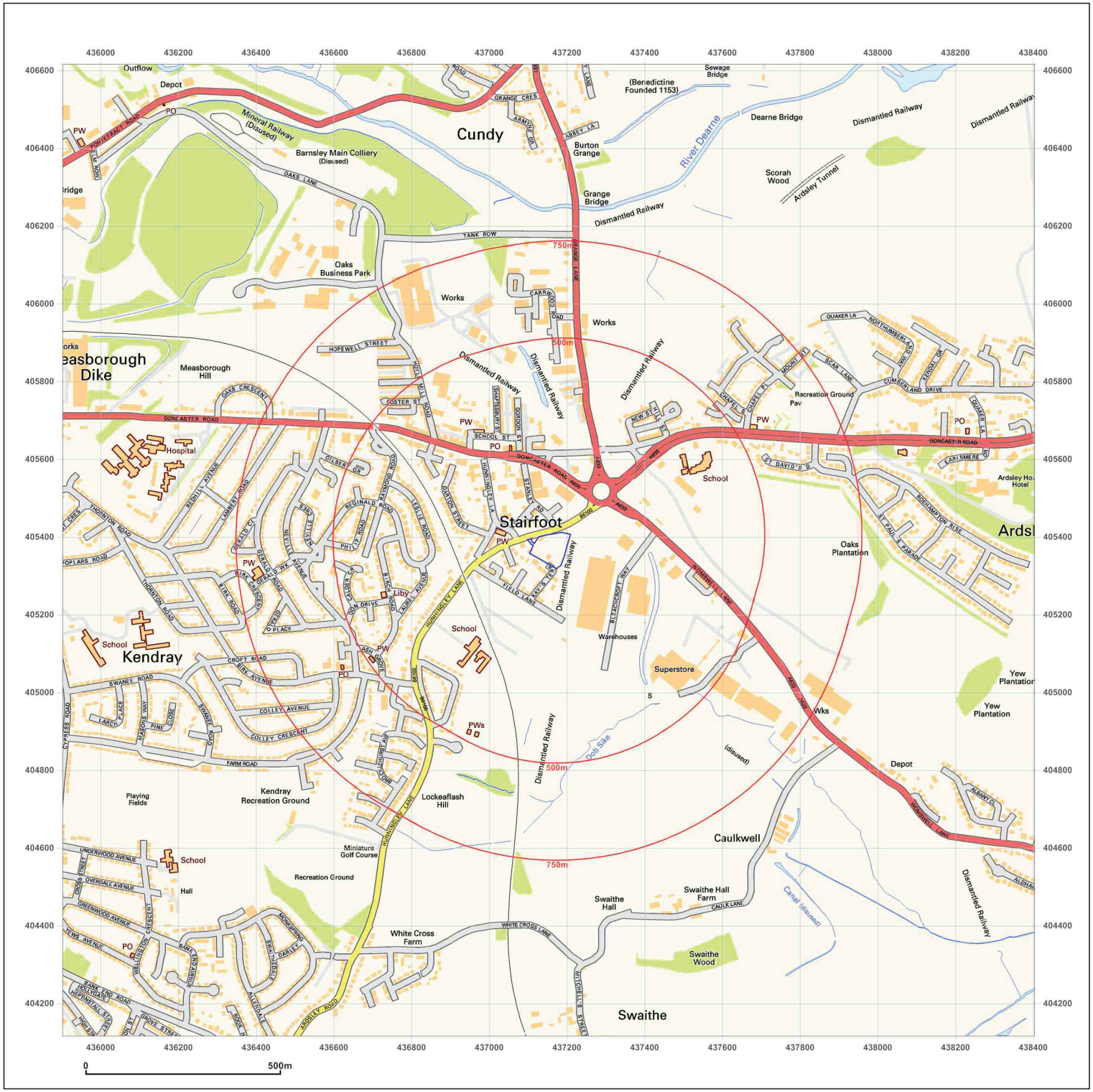
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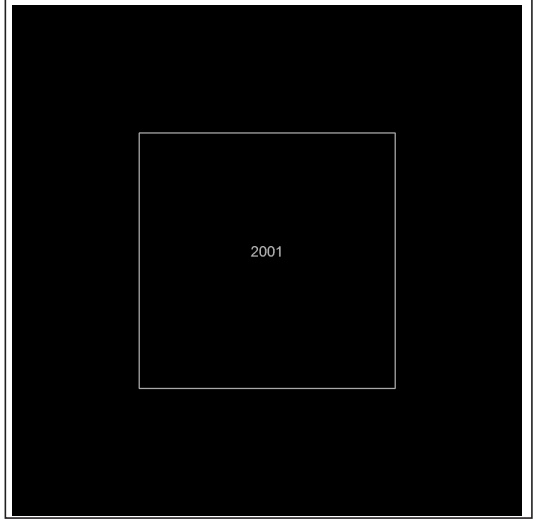
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ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 2001
Scale: 1:10,000
Printed at: 1:10,000

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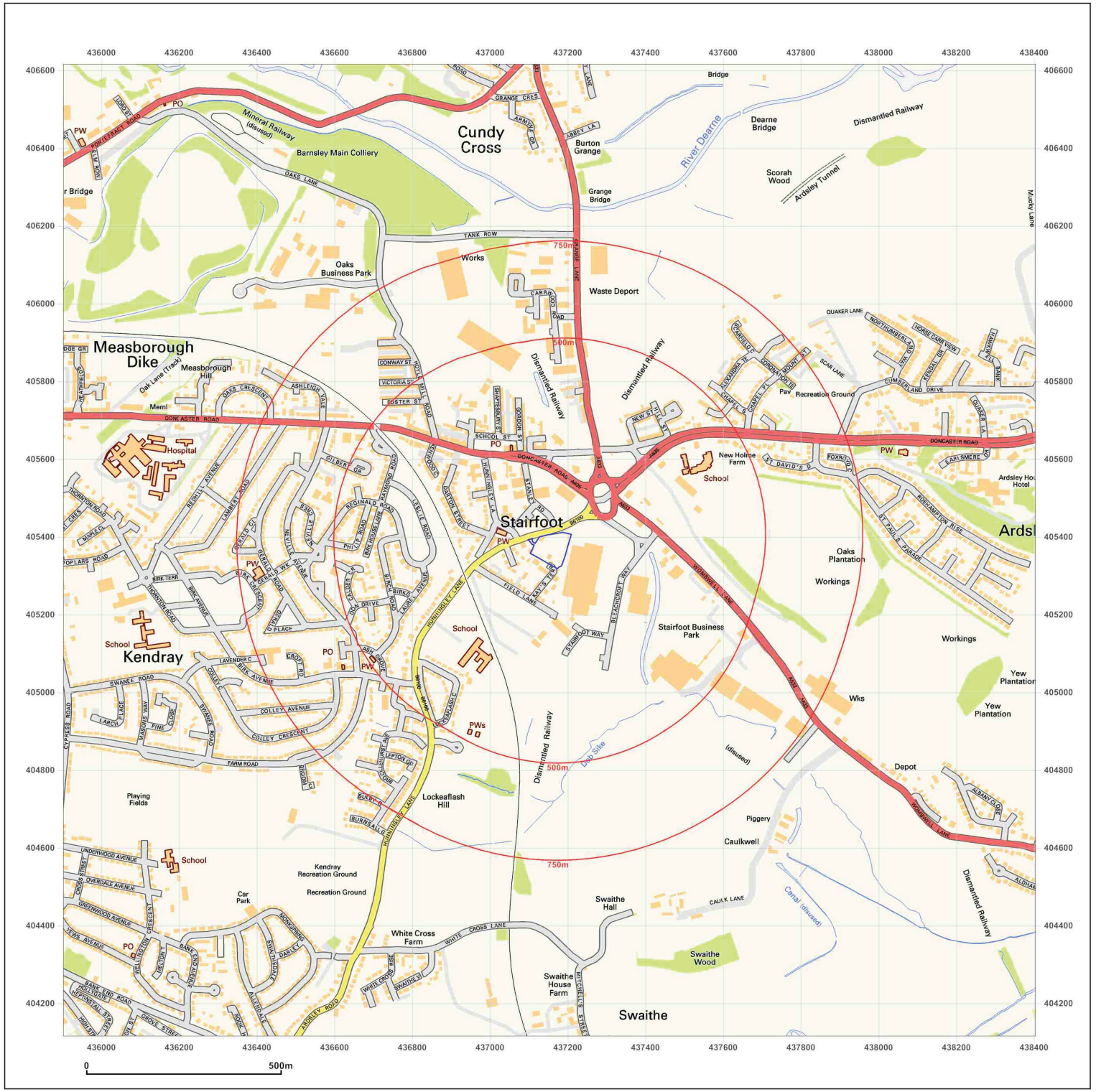
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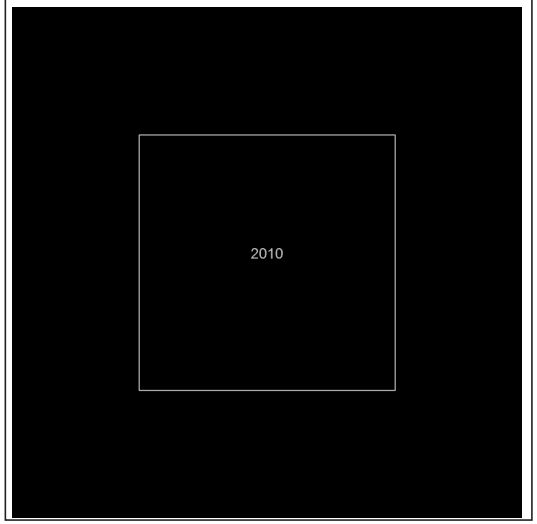
Site Details:

ALBION WORKS, STAIRFOOT,
BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000

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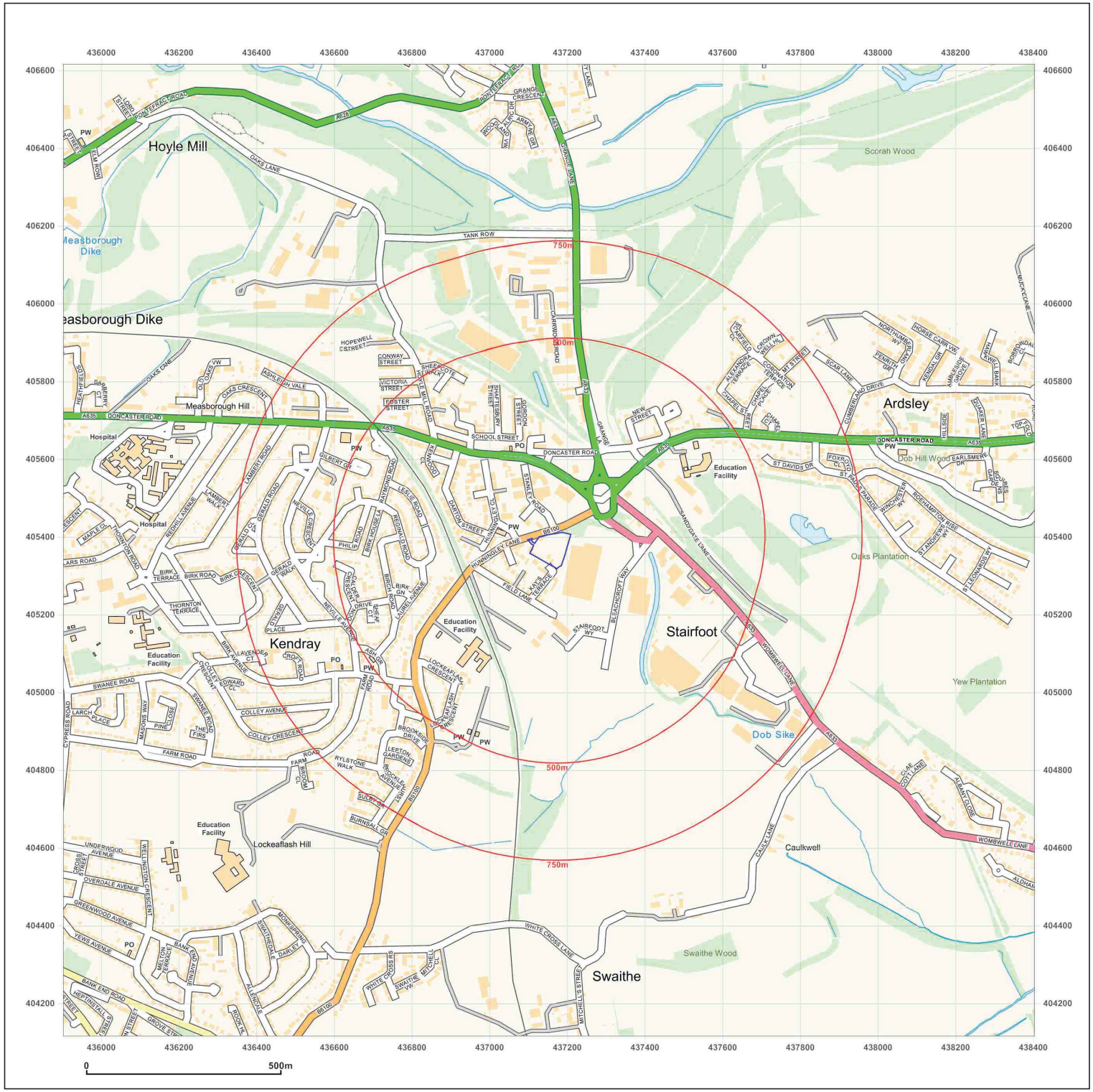
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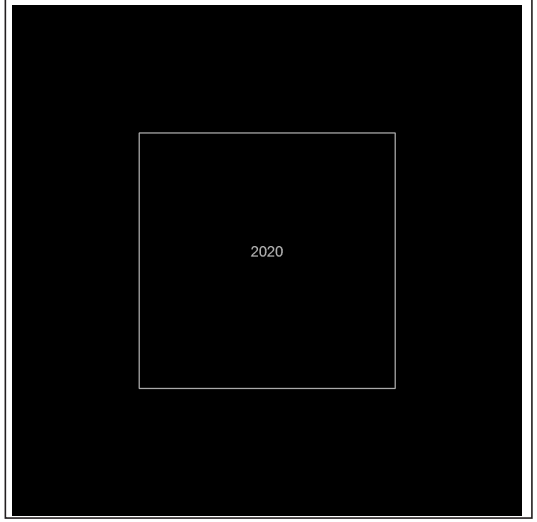
Site Details:

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BARNSLEY, S70 3DY

Client Ref: 20155
Report Ref: GS-6992814
Grid Ref: 437152, 405365

Map Name: National Grid
Map date: 2020
Scale: 1:10,000
Printed at: 1:10,000

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APPENDIX C

Environmental Data Reports

Enviro & Geo Insight Report Number GS-6992815.

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

ALBION WORKS, STAIRFOOT, BARNSLEY, S70 3DY

Order Details

Date: 24/08/2020

Your ref: 20155

Our Ref: GS-6992815

Client: Silkstone Environmental Ltd

Site Details

Location: 437129 405378

Area: 0.63 ha

Authority: Barnsley Metropolitan Borough Council



Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

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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	2	5	47	64	-
19	1.2	Historical tanks	0	0	1	13	-
20	1.3	Historical energy features	0	0	6	7	-
21	1.4	Historical petrol stations	0	0	0	0	-
21	1.5	Historical garages	0	0	3	10	-
22	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
23	2.1	Historical industrial land uses	3	8	60	89	-
29	2.2	Historical tanks	0	0	2	18	-
30	2.3	Historical energy features	0	0	15	14	-
32	2.4	Historical petrol stations	0	0	0	0	-
32	2.5	Historical garages	0	0	4	13	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
34	3.1	Active or recent landfill	0	0	0	1	-
35	3.2	Historical landfill (BGS records)	0	0	1	0	-
35	3.3	Historical landfill (LA/mapping records)	0	0	0	3	-
35	3.4	Historical landfill (EA/NRW records)	0	0	1	4	-
37	3.5	Historical waste sites	0	0	1	1	-
37	3.6	Licensed waste sites	0	0	1	1	-
38	3.7	Waste exemptions	1	2	8	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
40	4.1	Recent industrial land uses	1	2	19	-	-
42	4.2	Current or recent petrol stations	0	0	0	2	-
42	4.3	Electricity cables	0	0	0	0	-
42	4.4	Gas pipelines	0	0	0	0	-
43	4.5	Sites determined as Contaminated Land	0	0	0	0	-

43	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
43	4.7	Regulated explosive sites	0	0	0	0	-
43	4.8	Hazardous substance storage/usage	0	0	0	0	-
43	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
44	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
44	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	1	3	2	-
45	4.12	Radioactive Substance Authorisations	0	0	0	0	-
45	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
45	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
46	4.15	Pollutant release to public sewer	0	0	0	0	-
46	4.16	List 1 Dangerous Substances	0	0	0	0	-
46	4.17	List 2 Dangerous Substances	0	0	0	0	-
46	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	10	0	-
48	4.19	Pollution inventory substances	0	0	0	0	-
48	4.20	Pollution inventory waste transfers	0	0	0	0	-
48	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
49	**5.1**	**Superficial aquifer**	Identified (within 500m)				
51	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
53	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
54	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
54	5.5	Groundwater vulnerability- local information	None (within 0m)				
55	**5.6**	**Groundwater abstractions**	0	0	0	0	6
57	**5.7**	**Surface water abstractions**	0	0	0	0	1
57	5.8	Potable abstractions	0	0	0	0	0
58	5.9	Source Protection Zones	0	0	0	0	-
58	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
59	**6.1**	**Water Network (OS MasterMap)**	0	0	2	-	-

60	6.2	Surface water features	0	0	1	-	-
60	6.3	WFD Surface water body catchments	1	-	-	-	-
60	6.4	WFD Surface water bodies	0	0	0	-	-
61	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
62	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
62	7.2	Historical Flood Events	0	0	0	-	-
62	7.3	Flood Defences	0	0	0	-	-
62	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
63	7.5	Flood Storage Areas	0	0	0	-	-
64	7.6	Flood Zone 2	None (within 50m)				
64	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
65	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
67	9.1	Groundwater flooding	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
68	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	1
69	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
69	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
69	10.4	Special Protection Areas (SPA)	0	0	0	0	0
69	10.5	National Nature Reserves (NNR)	0	0	0	0	0
70	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
70	10.7	Designated Ancient Woodland	0	0	0	0	6
70	10.8	Biosphere Reserves	0	0	0	0	0
71	10.9	Forest Parks	0	0	0	0	0
71	10.10	Marine Conservation Zones	0	0	0	0	0
71	10.11	Green Belt	0	0	1	0	1
71	10.12	Proposed Ramsar sites	0	0	0	0	0

72	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
72	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
72	10.15	Nitrate Sensitive Areas	0	0	0	0	0
72	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	1
74	10.17	SSSI Impact Risk Zones	0	-	-	-	-
75	**10.18**	**SSSI Units**	0	0	0	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
76	11.1	World Heritage Sites	0	0	0	-	-
76	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
76	11.3	National Parks	0	0	0	-	-
76	11.4	Listed Buildings	0	0	0	-	-
77	11.5	Conservation Areas	0	0	0	-	-
77	11.6	Scheduled Ancient Monuments	0	0	0	-	-
77	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
78	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
79	12.2	Open Access Land	0	0	0	-	-
79	12.3	Tree Felling Licences	0	0	0	-	-
79	12.4	Environmental Stewardship Schemes	0	0	0	-	-
79	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
80	**13.1**	**Priority Habitat Inventory**	0	0	3	-	-
81	13.2	Habitat Networks	0	0	0	-	-
81	**13.3**	**Open Mosaic Habitat**	0	0	1	-	-
81	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
82	**14.1**	**10k Availability**	Identified (within 500m)				
83	**14.2**	**Artificial and made ground (10k)**	1	0	4	12	-
85	**14.3**	**Superficial geology (10k)**	0	0	1	1	-

86	14.4	Landslip (10k)	0	0	0	0	-
87	14.5	Bedrock geology (10k)	1	0	2	3	-
88	14.6	Bedrock faults and other linear features (10k)	0	0	1	1	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
89	15.1	50k Availability	Identified (within 500m)				
90	15.2	Artificial and made ground (50k)	0	0	0	4	-
91	15.3	Artificial ground permeability (50k)	0	0	-	-	-
92	15.4	Superficial geology (50k)	0	0	1	0	-
93	15.5	Superficial permeability (50k)	None (within 50m)				
93	15.6	Landslip (50k)	0	0	0	0	-
93	15.7	Landslip permeability (50k)	None (within 50m)				
94	15.8	Bedrock geology (50k)	1	0	2	1	-
95	15.9	Bedrock permeability (50k)	Identified (within 50m)				
95	15.10	Bedrock faults and other linear features (50k)	0	0	1	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
96	16.1	BGS Boreholes	0	0	2	-	-
Page	Section	Natural ground subsidence					
97	17.1	Shrink swell clays	Very low (within 50m)				
98	17.2	Running sands	Negligible (within 50m)				
99	17.3	Compressible deposits	Negligible (within 50m)				
100	17.4	Collapsible deposits	Very low (within 50m)				
101	17.5	Landslides	Low (within 50m)				
103	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
105	18.1	Natural cavities	0	0	0	0	-
106	18.2	BritPits	0	0	0	4	-
106	18.3	Surface ground workings	0	2	26	-	-
108	18.4	Underground workings	0	0	1	1	10
108	18.5	Historical Mineral Planning Areas	0	0	0	1	-

109	**18.6**	**Non-coal mining**	1	0	1	1	6
110	**18.7**	**Mining cavities**	0	0	0	0	1
110	18.8	JPB mining areas	None (within 0m)				
110	**18.9**	**Coal mining**	Identified (within 0m)				
111	18.10	Brine areas	None (within 0m)				
111	18.11	Gypsum areas	None (within 0m)				
111	18.12	Tin mining	None (within 0m)				
111	18.13	Clay mining	None (within 0m)				

Page	Section	Radon
112	**19.1**	**Radon**	Between 1% and 3% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
113	**20.1**	**BGS Estimated Background Soil Chemistry**	1	0	-	-	-
113	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
113	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
114	21.1	Underground railways (London)	0	0	0	-	-
114	21.2	Underground railways (Non-London)	0	0	0	-	-
115	21.3	Railway tunnels	0	0	0	-	-
115	**21.4**	**Historical railway and tunnel features**	4	0	36	-	-
117	21.5	Royal Mail tunnels	0	0	0	-	-
117	**21.6**	**Historical railways**	0	0	4	-	-
117	**21.7**	**Railways**	0	0	7	-	-
118	21.8	Crossrail 1	0	0	0	0	-
118	21.9	Crossrail 2	0	0	0	0	-
118	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 01/07/2018

Site Area: 0.63ha

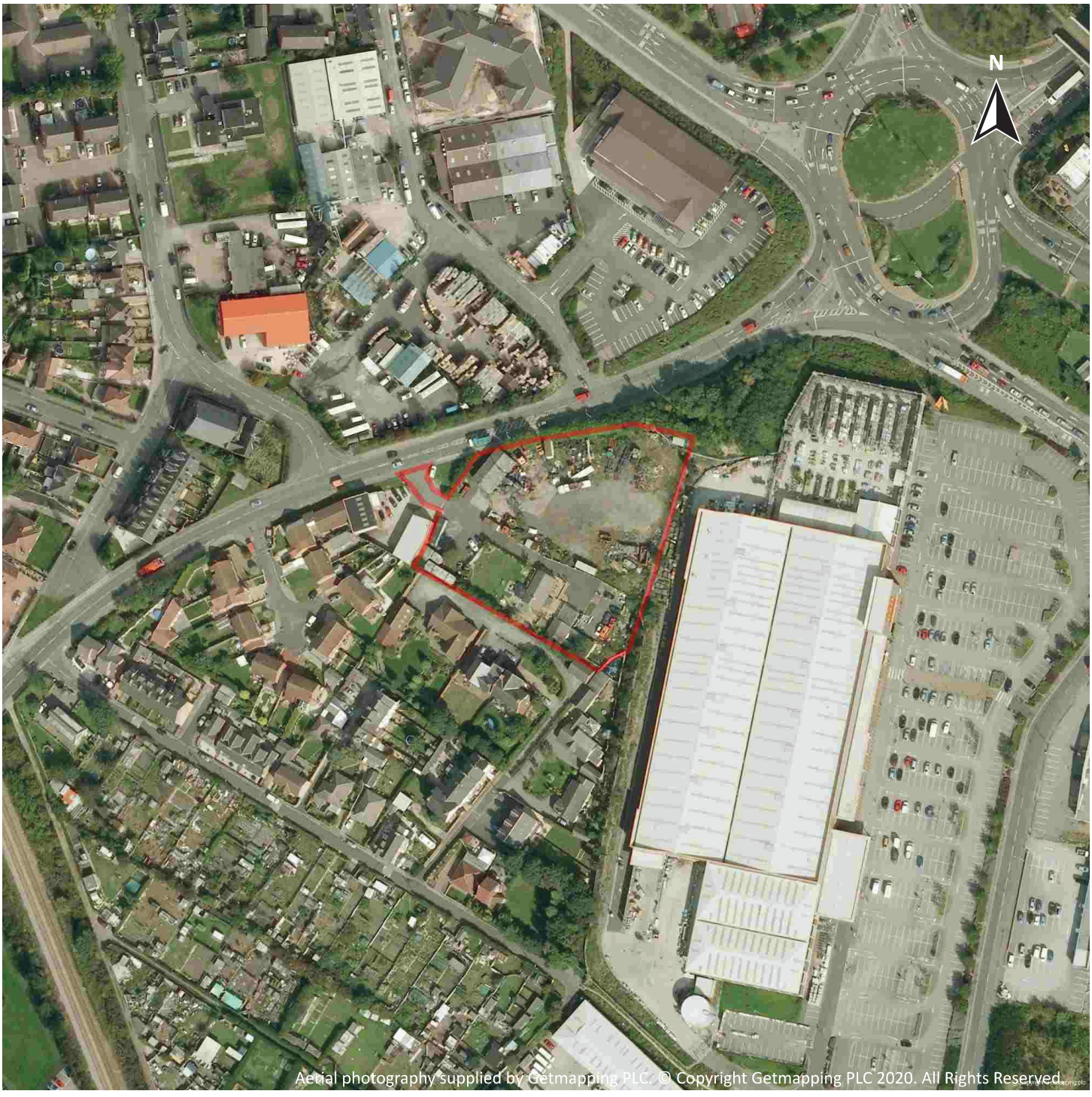
Recent site history - 2013 aerial photograph



Capture Date: 07/06/2013

Site Area: 0.63ha

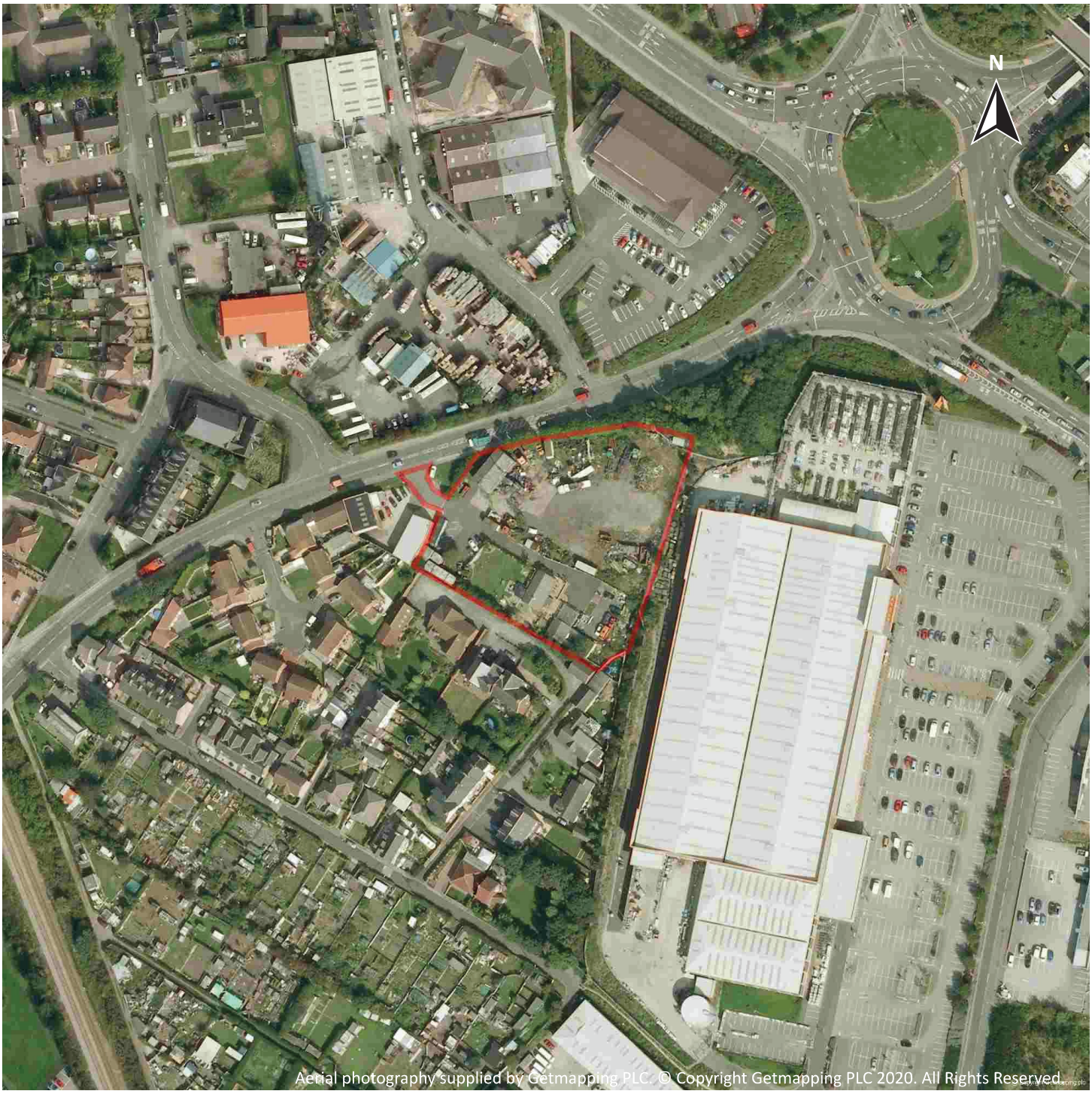
Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.63ha

Recent site history - 2009 aerial photograph



Capture Date: 11/09/2009

Site Area: 0.63ha

Recent site history - 1999 aerial photograph



Capture Date: 10/07/1999

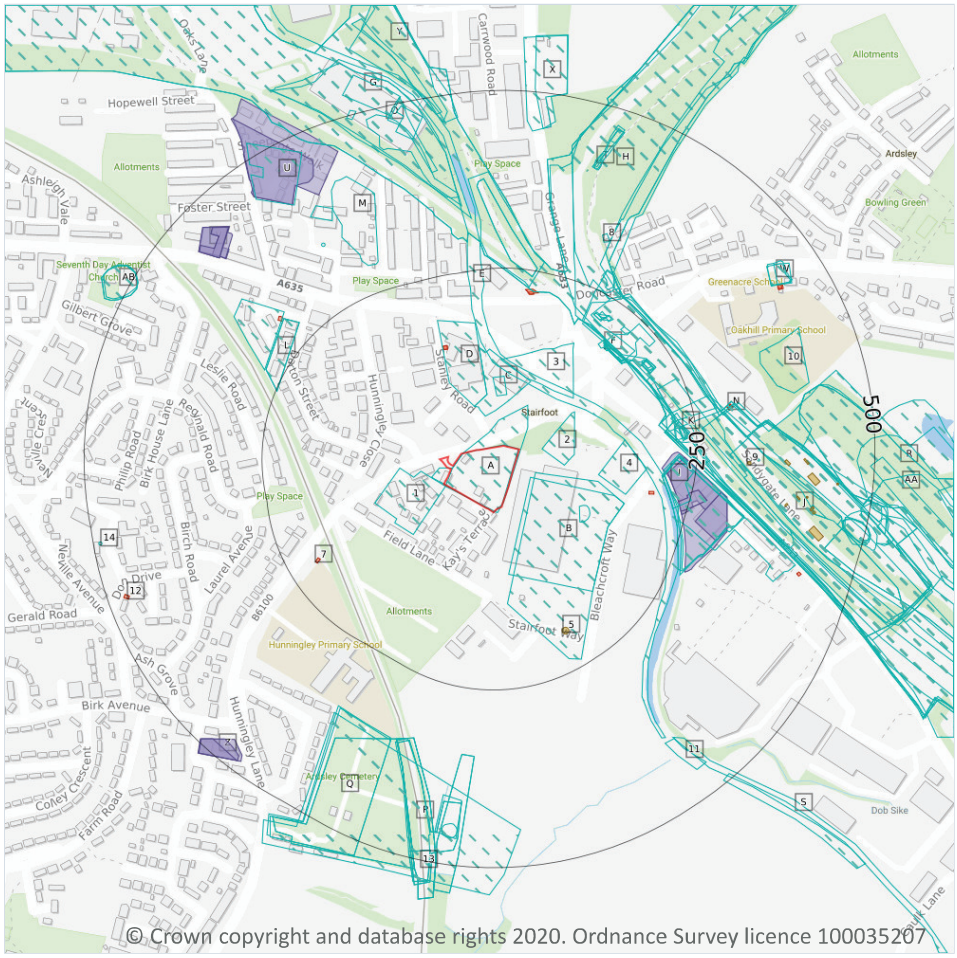
Site Area: 0.63ha

OS MasterMap site plan



Site Area: 0.63ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	118

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**	**Unspecified Works**	**1974**	**1459241**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Unspecified Works**	**1982 - 1992**	**1504652**
1	2m SW	Nursery	1966 - 1974	1518051
B	26m E	Unspecified Warehouses	1974	1424434
B	31m E	Unspecified Warehouse	1982 - 1992	1549053
2	32m E	Bleach and Dye works	1850	1409670
C	45m N	Unspecified Works	1982 - 1992	1484591
D	62m N	Unspecified Factory	1974 - 1992	1498742
C	71m N	Unspecified Foundry	1974	1421020
E	87m NE	Disused Canal	1966	1469588
3	96m NE	Tan Yard	1850	1411705
B	104m E	Unspecified Heap	1931 - 1938	1535021
4	117m E	Unspecified Works	1974 - 1992	1484703
F	183m NE	Railway Station	1890	1468104
F	187m NE	Railway Station	1948	1480758
F	187m NE	Railway Station	1938	1503845
F	188m NE	Railway Station	1904	1503770
F	189m NE	Railway Station	1951	1506173
G	189m NE	Railway Sidings	1951	1457989
G	189m NE	Railway Sidings	1951	1457990
F	192m NE	Railway Station	1966	1554367
H	192m NE	Railway Sidings	1966	1549333
J	192m NE	Railway Sidings	1948	1462288
H	193m NE	Railway Sidings	1904 - 1948	1499321
J	195m NE	Railway Sidings	1904	1479013
6	196m NE	Railway Sidings	1890	1458655
J	203m E	Unspecified Works	1966	1438981
I	204m E	Glass Works	1948	1411695
J	204m NE	Railway Sidings	1931 - 1938	1524667

ID	Location	Land use	Dates present	Group ID
I	205m E	Garage	1974 - 1992	1488606
J	206m E	Chemical Plant	1948 - 1951	1491039
I	206m E	Flint Glass Works	1951	1547310
I	207m E	Flint Glass Works	1931 - 1938	1469132
I	207m E	Flint Glass Works	1938	1515350
F	209m NE	Railway Building	1948	1492663
F	210m NE	Railway Building	1938	1546841
J	210m E	Colliery	1904	1522430
F	210m NE	Railway Station	1931 - 1938	1513412
F	212m NE	Railway Building	1904	1552542
J	212m NE	Railway Sidings	1982	1540369
F	214m NE	Railway Buildings	1951	1484912
F	215m NE	Railway Buildings	1904	1462086
F	217m NE	Railway Building	1974	1430522
K	217m E	Railway Buildings	1966	1442386
K	220m E	Railway Building	1974	1520487
F	221m NE	Railway Building	1951	1430521
G	226m N	Railway Sidings	1948	1513360
K	226m E	Railway Building	1938	1460737
K	227m E	Railway Building	1951	1493149
G	241m N	Railway Sidings	1938	1466525
G	241m N	Railway Sidings	1904	1477479
L	248m NW	Unspecified Commercial/Industrial	1982	1411023
L	248m NW	Unspecified Mill	1974	1421687
F	249m NE	Unspecified Heap	1948	1417705
F	257m NE	Unspecified Ground Workings	1904	1414453
J	259m E	Colliery	1890	1471424
L	277m NW	Unspecified Mill	1966	1421686

ID	Location	Land use	Dates present	Group ID
J	280m E	Chemical Plant	1938	1498483
M	289m N	Unspecified Heap	1904	1417707
J	296m E	Chemical Plant	1931 - 1938	1545244
8	315m N	Railway Building	1966	1430523
O	323m N	Unspecified Works	1966	1544092
P	337m S	Cuttings	1987	1471496
P	337m S	Cuttings	1977	1512551
P	337m S	Cuttings	1966	1556893
P	340m S	Cuttings	1948 - 1951	1515459
M	341m NW	Unspecified Pump	1850	1456736
P	342m S	Cuttings	1938	1471659
P	342m S	Cuttings	1904	1513844
O	343m N	Refuse Heap	1904	1438043
P	343m S	Cuttings	1977 - 1987	1480376
P	343m S	Cuttings	1966	1480472
Q	345m SW	Cemetery	1938 - 1948	1504066
Q	346m SW	Cemetery	1904	1460836
Q	347m SW	Cemetery	1966	1524218
Q	347m SW	Cemetery	1977 - 1987	1545054
O	356m N	Unspecified Commercial/Industrial	1948 - 1951	1535751
P	356m SW	Cemetery	1890	1541876
10	360m E	Unspecified Heap	1982 - 1992	1525591
M	368m NW	Unspecified Works	1974 - 1992	1473560
O	395m N	Railway Sidings	1948	1465684
R	397m E	Clay Pit	1982 - 1992	1551768
R	397m E	Unspecified Quarry	1966	1428060
R	397m E	Unspecified Disused Pit	1974	1431755
P	404m S	Cuttings	1948 - 1951	1506119

ID	Location	Land use	Dates present	Group ID
S	404m SE	Disused Canal	1987	1478189
11	404m SE	Cuttings	1951	1410381
T	408m N	Railway Buildings	1948	1464484
T	409m N	Railway Buildings	1938	1526918
U	412m NW	Garage	1982 - 1992	1494587
T	413m N	Railway Buildings	1951	1506575
W	422m NE	Police Station	1938	1501498
W	423m NE	Police Station	1931 - 1951	1469199
W	431m NE	Police Station	1966	1554544
P	442m S	Sandstone Quarry	1850	1451639
X	445m N	Unspecified Works	1974 - 1992	1515869
O	446m N	Unspecified Works	1974 - 1992	1512685
X	450m N	Unspecified Works	1966	1547064
T	452m N	Railway Building	1948	1430520
Y	462m N	Railway Sidings	1948	1530692
Y	463m N	Railway Sidings	1904	1461576
J	465m E	Refuse Heap	1938	1520413
J	466m E	Refuse Heap	1948	1556137
J	467m E	Unspecified Ground Workings and Heaps	1931 - 1938	1516634
J	468m E	Refuse Heap	1951	1519578
AA	475m E	Clay Pit	1951	1534296
Y	475m N	Railway Sidings	1890	1556903
13	483m S	Cuttings	1951	1471125
O	485m N	Railway Building	1904	1466219
J	487m E	Unspecified Pits	1904	1423389
14	488m W	Unspecified Pump	1850	1456735
AB	489m NW	Unspecified Pit	1951	1462116
AB	489m NW	Unspecified Pit	1966	1496244

ID	Location	Land use	Dates present	Group ID
AB	490m NW	Unspecified Pit	1948	1479085
S	493m SE	Cuttings	1951	1410382
O	493m N	Railway Building	1904	1430525
AA	494m E	Tramway Sidings	1951	1430903
AA	499m E	Unspecified Pit	1948	1513833

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m **14**

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
5	190m SE	Unspecified Tank	1982 - 1990	243040
9	322m E	Unspecified Tank	1893 - 1906	242754
J	373m E	Tanks	1931	232652
J	382m E	Tanks	1960	247936
J	395m E	Tanks	1960	239885
J	400m E	Unspecified Tank	1931	228981
J	407m E	Tanks	1931	232651
J	409m E	Unspecified Tank	1960	237084
J	409m E	Unspecified Tank	1960	248247
J	418m E	Tanks	1960	239189
J	422m E	Unspecified Tank	1893 - 1906	243803
J	423m E	Tanks	1931	232650
J	449m E	Unspecified Tank	1960	236029

ID	Location	Land use	Dates present	Group ID
J	449m E	Unspecified Tank	1960	236272

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**13**

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
D	148m N	Electricity Substation	1973	145888
D	148m N	Electricity Substation	1982 - 1993	139258
I	192m E	Electricity Substation	1972 - 1990	146528
7	203m SW	Electricity Substation	1973 - 1993	142364
E	216m N	Electricity Substation	1993	139736
E	217m N	Electricity Substation	1973 - 1990	136489
L	295m NW	Electricity Substation	1974 - 1997	146231
N	298m E	Electricity Substation	1995	141690
N	298m E	Electricity Substation	1983 - 1990	136637
J	423m E	Electricity Substation	1990 - 1995	135727
W	428m NE	Electricity Substation	1992	139697
W	428m NE	Electricity Substation	1967	142681
12	469m W	Electricity Substation	1973 - 1993	139046

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	13

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'.

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

ID	Location	Land use	Dates present	Group ID
I	202m E	Garage	1972	44174
I	211m E	Garage	1982 - 1990	44604
I	235m E	Garage	1972	42595
I	266m E	Garage	1982 - 1990	45724
U	409m NW	Garage	1987	42566
V	412m NW	Garage	1974 - 1997	44703
V	413m NW	Garage	1987	41647
U	414m NW	Garage	1974 - 1997	44976
V	420m NW	Garage	1960	42958
V	420m NW	Garage	1961	42154
Z	464m SW	Garage	1993	41861
Z	473m SW	Garage	1984	42241
Z	484m SW	Garage	1973	44172

This data is sourced from Ordnance Survey / Groundsure.

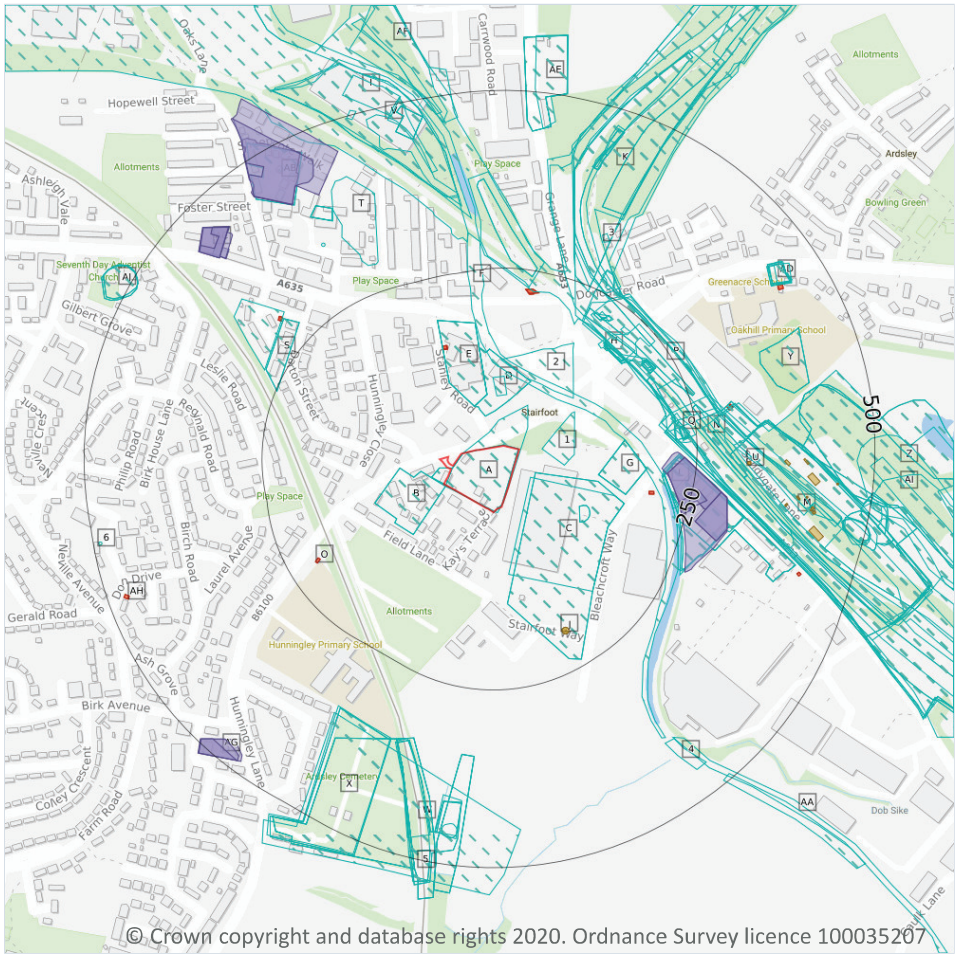
1.6 Historical military land

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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2.1 Historical industrial land uses

Records within 500m	160

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 23**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Works**	**1992**	**1504652**
A	**On site**	**Unspecified Works**	**1982**	**1504652**
A	**On site**	**Unspecified Works**	**1974**	**1459241**

ID	Location	Land Use	Date	Group ID
B	2m SW	Nursery	1974	1518051
B	2m SW	Nursery	1966	1518051
C	26m E	Unspecified Warehouses	1974	1424434
C	31m E	Unspecified Warehouse	1992	1549053
C	31m E	Unspecified Warehouse	1982	1549053
1	32m E	Bleach and Dye works	1850	1409670
D	45m N	Unspecified Works	1992	1484591
D	45m N	Unspecified Works	1982	1484591
E	62m N	Unspecified Factory	1992	1498742
E	62m N	Unspecified Factory	1982	1498742
E	62m N	Unspecified Factory	1974	1498742
D	71m N	Unspecified Foundry	1974	1421020
F	87m NE	Disused Canal	1966	1469588
2	96m NE	Tan Yard	1850	1411705
C	104m E	Unspecified Heap	1938	1535021
C	104m E	Unspecified Heap	1931	1535021
G	117m E	Unspecified Works	1992	1484703
G	117m E	Unspecified Works	1982	1484703
G	117m E	Unspecified Works	1974	1484703
H	183m NE	Railway Station	1890	1468104
H	187m NE	Railway Station	1948	1480758
H	187m NE	Railway Station	1938	1503845
H	188m NE	Railway Station	1904	1503770
H	189m NE	Railway Station	1951	1506173
I	189m NE	Railway Sidings	1951	1457989
H	192m NE	Railway Station	1966	1554367
K	192m NE	Railway Sidings	1966	1549333
M	192m NE	Railway Sidings	1948	1462288

ID	Location	Land Use	Date	Group ID
K	193m NE	Railway Sidings	1938	1499321
M	195m NE	Railway Sidings	1904	1479013
N	196m NE	Railway Sidings	1890	1458655
M	203m E	Unspecified Works	1966	1438981
L	204m E	Glass Works	1948	1411695
M	204m NE	Railway Sidings	1938	1524667
M	204m NE	Railway Sidings	1931	1524667
L	205m E	Garage	1992	1488606
L	205m E	Garage	1982	1488606
L	205m E	Garage	1974	1488606
M	206m E	Chemical Plant	1948	1491039
L	206m E	Flint Glass Works	1951	1547310
P	206m NE	Railway Sidings	1938	1499321
P	206m NE	Railway Sidings	1931	1499321
L	207m E	Flint Glass Works	1938	1469132
L	207m E	Flint Glass Works	1931	1469132
L	207m E	Flint Glass Works	1938	1515350
H	209m NE	Railway Building	1948	1492663
H	210m NE	Railway Building	1938	1546841
M	210m E	Colliery	1904	1522430
H	210m NE	Railway Station	1938	1513412
H	210m NE	Railway Station	1931	1513412
H	212m NE	Railway Building	1904	1552542
M	212m NE	Railway Sidings	1982	1540369
H	214m NE	Railway Buildings	1951	1484912
H	215m NE	Railway Buildings	1904	1462086
H	217m NE	Railway Building	1974	1430522
Q	217m E	Railway Buildings	1966	1442386

ID	Location	Land Use	Date	Group ID
Q	220m E	Railway Building	1974	1520487
H	221m NE	Railway Building	1951	1430521
I	226m N	Railway Sidings	1948	1513360
Q	226m E	Railway Building	1938	1460737
Q	227m E	Railway Building	1951	1493149
I	241m N	Railway Sidings	1938	1466525
I	241m N	Railway Sidings	1904	1477479
R	243m NE	Railway Sidings	1948	1499321
S	248m NW	Unspecified Commercial/Industrial	1982	1411023
S	248m NW	Unspecified Mill	1974	1421687
R	249m NE	Railway Sidings	1904	1499321
H	249m NE	Unspecified Heap	1948	1417705
H	257m NE	Unspecified Ground Workings	1904	1414453
M	259m E	Colliery	1890	1471424
S	277m NW	Unspecified Mill	1966	1421686
M	280m E	Chemical Plant	1938	1498483
T	289m N	Unspecified Heap	1904	1417707
M	296m E	Chemical Plant	1938	1545244
M	296m E	Chemical Plant	1931	1545244
M	301m E	Chemical Plant	1951	1491039
3	315m N	Railway Building	1966	1430523
V	323m N	Unspecified Works	1966	1544092
W	337m S	Cuttings	1966	1556893
W	337m S	Cuttings	1977	1512551
W	337m S	Cuttings	1987	1471496
W	340m S	Cuttings	1948	1515459
T	341m NW	Unspecified Pump	1850	1456736
W	342m S	Cuttings	1938	1471659

ID	Location	Land Use	Date	Group ID
W	342m S	Cuttings	1904	1513844
W	343m S	Cuttings	1951	1515459
V	343m N	Refuse Heap	1904	1438043
W	343m S	Cuttings	1966	1480472
W	343m S	Cuttings	1977	1480376
W	343m S	Cuttings	1987	1480376
X	345m SW	Cemetery	1948	1504066
X	346m SW	Cemetery	1938	1504066
X	346m SW	Cemetery	1904	1460836
X	347m SW	Cemetery	1966	1524218
X	347m SW	Cemetery	1977	1545054
X	347m SW	Cemetery	1987	1545054
V	356m N	Unspecified Commercial/Industrial	1948	1535751
W	356m SW	Cemetery	1890	1541876
V	358m N	Unspecified Commercial/Industrial	1951	1535751
Y	360m E	Unspecified Heap	1992	1525591
Y	360m E	Unspecified Heap	1982	1525591
R	361m N	Railway Sidings	1938	1499321
R	361m N	Railway Sidings	1931	1499321
T	368m NW	Unspecified Works	1992	1473560
T	368m NW	Unspecified Works	1982	1473560
T	368m NW	Unspecified Works	1974	1473560
V	395m N	Railway Sidings	1948	1465684
Z	397m E	Clay Pit	1992	1551768
Z	397m E	Clay Pit	1982	1551768
Z	397m E	Unspecified Quarry	1966	1428060
Z	397m E	Unspecified Disused Pit	1974	1431755
W	404m S	Cuttings	1951	1506119

ID	Location	Land Use	Date	Group ID
AA	404m SE	Disused Canal	1987	1478189
4	404m SE	Cuttings	1951	1410381
R	408m N	Railway Buildings	1948	1464484
R	409m N	Railway Buildings	1938	1526918
W	410m S	Cuttings	1948	1506119
AB	412m NW	Garage	1992	1494587
AB	412m NW	Garage	1982	1494587
R	413m N	Railway Buildings	1951	1506575
AD	422m NE	Police Station	1938	1501498
AD	423m NE	Police Station	1948	1469199
AD	426m NE	Police Station	1951	1469199
AD	426m NE	Police Station	1938	1469199
AD	426m NE	Police Station	1931	1469199
AD	431m NE	Police Station	1966	1554544
W	442m S	Sandstone Quarry	1850	1451639
AE	445m N	Unspecified Works	1992	1515869
AE	445m N	Unspecified Works	1982	1515869
AE	445m N	Unspecified Works	1974	1515869
V	446m N	Unspecified Works	1992	1512685
V	446m N	Unspecified Works	1982	1512685
V	446m N	Unspecified Works	1974	1512685
AE	450m N	Unspecified Works	1966	1547064
R	452m N	Railway Building	1948	1430520
AF	462m N	Railway Sidings	1948	1530692
AF	463m N	Railway Sidings	1904	1461576
M	465m E	Refuse Heap	1938	1520413
M	465m E	Refuse Heap	1938	1520413
M	466m E	Refuse Heap	1948	1556137

ID	Location	Land Use	Date	Group ID
M	467m E	Unspecified Ground Workings and Heaps	1938	1516634
M	467m E	Unspecified Ground Workings and Heaps	1931	1516634
M	468m E	Refuse Heap	1951	1519578
AI	475m E	Clay Pit	1951	1534296
AF	475m N	Railway Sidings	1890	1556903
5	483m S	Cuttings	1951	1471125
V	485m N	Railway Building	1904	1466219
M	487m E	Unspecified Pits	1904	1423389
6	488m W	Unspecified Pump	1850	1456735
AJ	489m NW	Unspecified Pit	1966	1496244
AJ	489m NW	Unspecified Pit	1951	1462116
AJ	490m NW	Unspecified Pit	1948	1479085
AJ	490m NW	Unspecified Pit	1948	1479085
AA	493m SE	Cuttings	1951	1410382
V	493m N	Railway Building	1904	1430525
AI	494m E	Tramway Sidings	1951	1430903
AI	499m E	Unspecified Pit	1948	1513833

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**20**

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 23**

ID	Location	Land Use	Date	Group ID
J	190m SE	Unspecified Tank	1982	243040
J	190m SE	Unspecified Tank	1990	243040
U	322m E	Unspecified Tank	1893	242754

ID	Location	Land Use	Date	Group ID
U	322m E	Unspecified Tank	1906	242754
M	373m E	Tanks	1931	232652
M	382m E	Tanks	1960	247936
M	382m E	Tanks	1960	247936
M	395m E	Tanks	1960	239885
M	396m E	Tanks	1960	239885
M	400m E	Unspecified Tank	1931	228981
M	407m E	Tanks	1931	232651
M	409m E	Unspecified Tank	1960	237084
M	409m E	Unspecified Tank	1960	248247
M	418m E	Tanks	1960	239189
M	418m E	Tanks	1960	239189
M	422m E	Unspecified Tank	1893	243803
M	422m E	Unspecified Tank	1906	243803
M	423m E	Tanks	1931	232650
M	449m E	Unspecified Tank	1960	236029
M	449m E	Unspecified Tank	1960	236272

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**29**

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 23**

ID	Location	Land Use	Date	Group ID
E	148m N	Electricity Substation	1973	145888
E	148m N	Electricity Substation	1993	139258
E	148m N	Electricity Substation	1982	139258

ID	Location	Land Use	Date	Group ID
E	148m N	Electricity Substation	1990	139258
E	148m N	Electricity Substation	1990	139258
L	192m E	Electricity Substation	1972	146528
L	192m E	Electricity Substation	1982	146528
L	192m E	Electricity Substation	1990	146528
O	203m SW	Electricity Substation	1993	142364
O	204m SW	Electricity Substation	1973	142364
F	216m N	Electricity Substation	1993	139736
F	217m N	Electricity Substation	1973	136489
F	217m N	Electricity Substation	1982	136489
F	217m N	Electricity Substation	1990	136489
F	217m N	Electricity Substation	1990	136489
S	295m NW	Electricity Substation	1997	146231
S	296m NW	Electricity Substation	1974	146231
S	297m NW	Electricity Substation	1987	146231
N	298m E	Electricity Substation	1995	141690
N	298m E	Electricity Substation	1990	136637
N	299m E	Electricity Substation	1983	136637
N	299m E	Electricity Substation	1983	136637
M	423m E	Electricity Substation	1995	135727
M	424m E	Electricity Substation	1990	135727
AD	428m NE	Electricity Substation	1967	142681
AD	428m NE	Electricity Substation	1992	139697
AD	428m NE	Electricity Substation	1992	139697
AH	469m W	Electricity Substation	1993	139046
AH	470m W	Electricity Substation	1973	139046

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	17

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'.

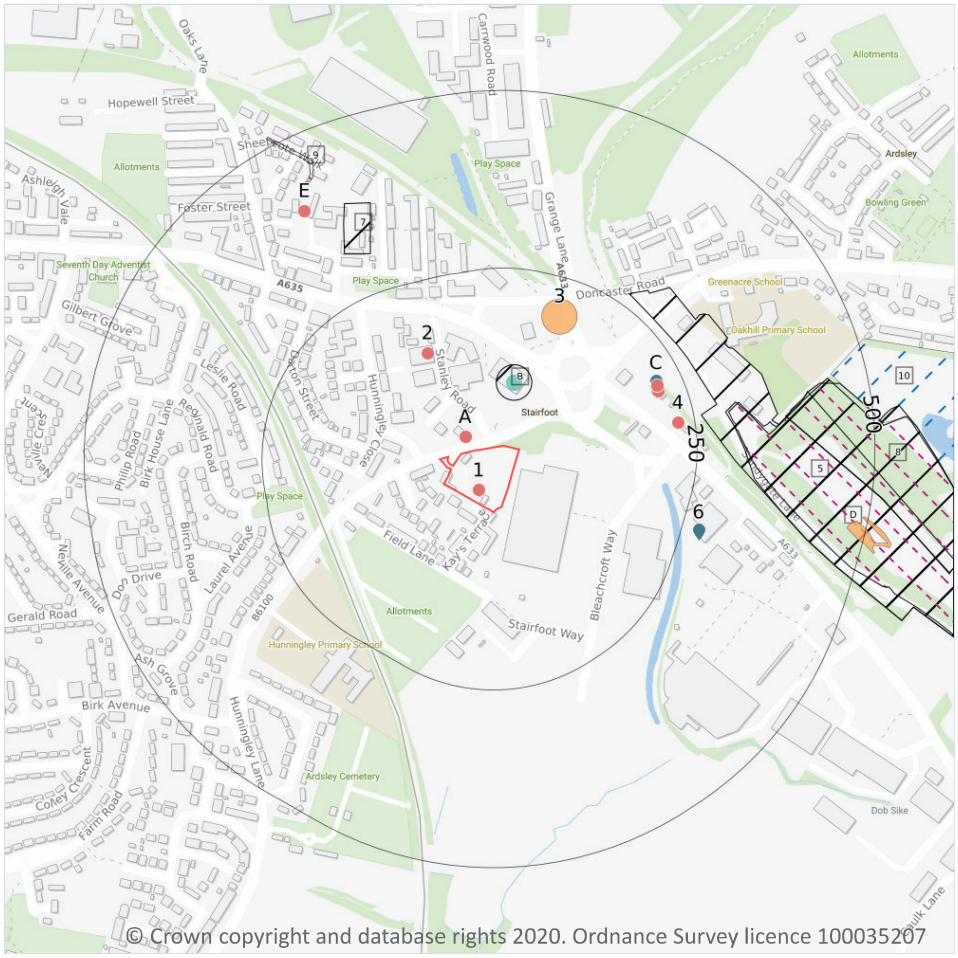
Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
L	202m E	Garage	1972	44174
L	211m E	Garage	1982	44604
L	211m E	Garage	1990	44604
L	235m E	Garage	1972	42595
L	266m E	Garage	1982	45724
L	266m E	Garage	1990	45724
AB	409m NW	Garage	1987	42566
AC	412m NW	Garage	1997	44703
AC	413m NW	Garage	1987	41647
AB	414m NW	Garage	1997	44976
AB	414m NW	Garage	1974	44976
AC	420m NW	Garage	1960	42958
AC	420m NW	Garage	1974	44703
AC	420m NW	Garage	1961	42154
AG	464m SW	Garage	1993	41861
AG	473m SW	Garage	1984	42241

ID	Location	Land Use	Date	Group ID
AG	484m SW	Garage	1973	44172

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



3.1 Active or recent landfill

Records within 500m	1

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

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Details	
10	450m E	Operator: B D R Waste Disposal Ltd Site Address: Stairfoot North Quarry, Wombwell Lane, Stairfoot, Barnsley, South Yorkshire, S71 5BZ	WML Number: 60588 EPR Reference: BDR002 Landfill type: A04: Household, Commercial & Industrial Waste Landfill Status: Closure IPPC Reference: - EPR Number: EA/EPR/YP3990ZT/A001

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

3.2 Historical landfill (BGS records)

Records within 500m	1

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.

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Address	BGS Number	Risk	Waste Type
B	89m N	Disused Canal, Doncaster Rd, Barnsley, Yorks	1891	No risk to aquifer	N/A

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	3

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

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Site address	Source	Data type
D	299m E	Refuse Tip	1995 mapping	Polygon
D	299m E	Refuse Tip	1990 mapping	Polygon
9	432m NW	Refuse Tip	1973 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	5

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.

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Details		
B	65m N	Site Address: Disused Canal - Doncaster Road, Stairfoot, Barnsley Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
5	260m E	Site Address: Stairfoot Landfill Site, Stairfoot (North Quarry), Stairfoot, Barnsley Licence Holder Address: Cleansing Division, Smithies Lane, Barnsley	Waste Licence: Yes Site Reference: WD2 B20, 4400/B20, WD2 S10, WD20 B772 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 03/12/1986 Licence Surrender: 31/12/1990	Operator: Barnsley Metropolitan Borough Council Licence Holder: Barnsley Metropolitan Borough Council First Recorded 31/12/1987 Last Recorded: 31/12/1992
D	294m E	Site Address: Stairfoot Brickworks, North Quarry Phase 2, Wombwell Lane, Stairfoot Licence Holder Address: Public Services Department, Cleansing Division, Smithies Lane, Barnsley	Waste Licence: Yes Site Reference: 4400/B266, 20B266, 20B772, WD2 B21, CD2, WD20 B772 Waste Type: Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 17/07/1991 Licence Surrender: -	Operator: - Licence Holder: Barnsley Metropolitan Borough Council First Recorded - Last Recorded: -
7	305m N	Site Address: School Street, Stairfoot, Barnsley Licence Holder Address: School Street, Stairfoot, Barnsley	Waste Licence: Yes Site Reference: WD20 B205, 4400/B205, 20B205(73) Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 28/11/1977 Licence Surrender: 27/01/1984	Operator: Wilde and Hardy Licence Holder: Wilde and Hardie Limited First Recorded 28/11/1977 Last Recorded: 27/01/1984
8	377m E	Site Address: Stairfoot North Quarry Phase 2, Wombwell Lane, Stairfoot, Barnsley Licence Holder Address: Wombwell Lane, Stairfoot, Barnsley	Waste Licence: Yes Site Reference: WD20 B297, WD20 B772, 4400/B297, 20B297 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 29/07/1980 Licence Surrender: 30/04/1988	Operator: - Licence Holder: The Yorkshire Brick Company Limited First Recorded 31/01/1992 Last Recorded: -

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

3.5 Historical waste sites

Records within 500m	2

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

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Address	Further Details	Date
3	170m N	Site Address: Grange Lane, Carlisle Engineering Works, Grange Lane, ,Stairfoot, BARNSLEY, South Yorkshire, S70 3NJ	Type of Site: Waste Transfer Station Planning application reference: 98/411 Description: Scheme includes weighbridge & car parking. The work will involve the construction of the industrial buildings, major concrete works and enabling works with car parking facilities. Detailed plans have been approved. Detailed plans have been approved. Data source: Historic Planning Application Data Type: Point	01/04/1999
D	473m E	Site Address: N/A	Type of Site: Ground Workings and Refuse Heap Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1931

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 34**

ID	Location	Details		
C	213m NE	Site Name: W F S Metals Ltd Site Address: Wombwell Lane, Stairfoot, Barnsley, South Yorkshire, S70 3NT Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WFS001 EPR reference: EA/EPR/RP3290ZC/A001 Operator: W F S Metals Ltd Waste Management licence No: 60568 Annual Tonnage: 548	Issue Date: 04/12/1989 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired

ID	Location	Details		
6	274m E	Site Name: South Yorkshire Dismantlers Site Address: Land/premises At, Wombwell Lane, Stairfoot, Barnsley, South Yorkshire, S70 3NX Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ARM002 EPR reference: EA/EPR/RP3098ZP/A001 Operator: Armitage Kathleen Waste Management licence No: 61967 Annual Tonnage: 4999	Issue Date: 24/09/1997 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired

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

3.7 Waste exemptions

Records within 500m **13**

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.

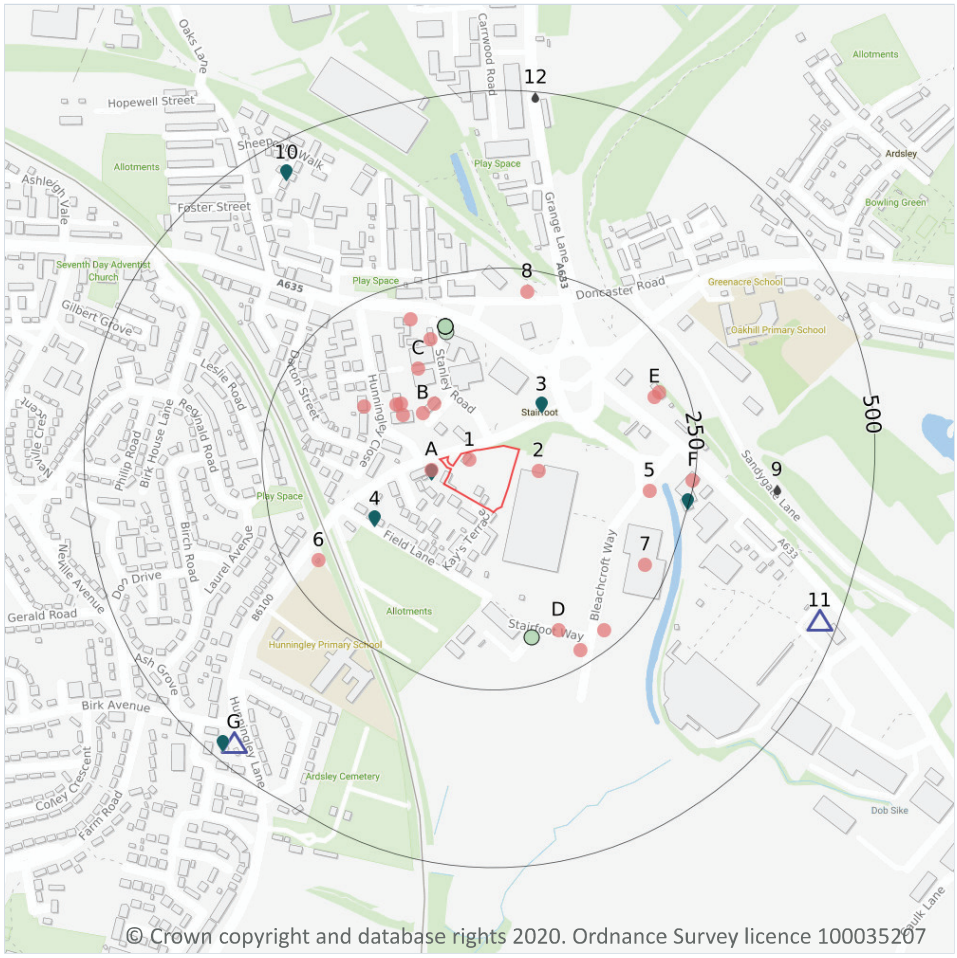
Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	**On site**	**THE BUNGALOW, ALBION ROAD, BARNSLEY, S70 3DY**	**WEX215717**	**Disposing of waste exemption**	**Not on a farm**	**Burning waste in the open**
A	21m N	STANLEY ROAD, BARNSLEY, S70 3PG	WEX177556	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
A	21m N	STANLEY ROAD, BARNSLEY, S70 3PG	WEX177556	Storing waste exemption	Not on a farm	Storage of waste in a secure place
2	149m N	-	WEX229446	Treating waste exemption	Not on a farm	Manual treatment of waste
C	211m NE	VEKA Recycling Centre Wombwell Lane BARNSLEY South Yorkshire S70 3NT	EPR/JH0714AA/A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)
C	211m NE	WOMBWELL LANE, BARNSLEY, S70 3NT	WEX223214	Treating waste exemption	Not on a farm	Recovery of scrap metal
C	213m NE	LH & SC Trading Wombwell Lane BARNSLEY South Yorkshire S70 3NT	EPR/AF0806PB/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
C	213m NE	LH & SC Trading Wombwell Lane BARNSLEY South Yorkshire S70 3NT	EPR/AF0806PB /A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting mixed waste
C	213m NE	LH & SC Trading Wombwell Lane BARNSLEY South Yorkshire S70 3NT	EPR/AF0806PB /A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)
C	213m NE	LH & SC Trading Wombwell Lane BARNSLEY South Yorkshire S70 3NT	EPR/AF0806PB /A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of scrap metal
4	226m E	STAIRFOOT METALS , WOMBWELL LANE , BARNSLEY , S70 3NT	WEX077976	Treating waste exemption	Not on a farm	Recovery of scrap metal
E	398m NW	1 SHEPCOTE HOUSE, SCHOOL STREET, STAIRFOOT, BARNSLEY, S70 3PT	WEX224473	Treating waste exemption	Not on a farm	Recovery of scrap metal
E	398m NW	1 SHEPCOTE HOUSE, SCHOOL STREET, STAIRFOOT, BARNSLEY, S70 3PT	WEX224473	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)

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

4 Current industrial land use



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4.1 Recent industrial land uses

Records within 250m	22

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 40**

ID	Location	Company	Address	Activity	Category
1	**On site**	**Works**	**South Yorkshire, S70**	**Unspecified Works Or Factories**	**Industrial Features**
A	19m SW	Hunningley M O T Centre	Hunningley Lane, Barnsley, South Yorkshire, S70 3DT	Vehicle Repair, Testing and Servicing	Repair and Servicing