



**COMBINED STAGE 1/STAGE 2
GEO-ENVIRONMENTAL REPORT**

AT
WHITEHALL ROAD WEST
BIRKENSRAW
ON BEHALF OF
ORION HOMES LTD

ARP GEOTECHNICAL LTD

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1.0 EXECUTIVE SUMMARY

The pertinent conclusions of the report are tabulated below. However, the information below is not exhaustive, and it is recommended the report is read in its entirety.

Proposed Development	New residential dwellings with private gardens. Existing dwelling to remain within the development.
Existing Site Description	The majority of the site is occupied by overgrown vegetation and a grassed garden area. In the east is a relatively large two-storey detached house with access road, and grassed garden to the rear.
Site History	Small part of the site developed with a small outbuilding (likely a chicken coop) and later a detached house (some time after 2002) in the east of the site. No evidence of any development on most of the site.
Geology	The majority of the site shown to be underlain by the Lepton Edge Rock (Sandstone) with the far northeastern corner of the site underlain by undifferentiated Pennine Lower Coal Measures. No superficial/drift deposits are shown to exist on the site.
Coal Mining	Site is at risk from shallow coal mining. Rotary investigation required, and this is programmed for the near future.
Hydrogeology	"Secondary A" Aquifer. No abstractions within 1km.
Hydrology	The nearest downslope surface water is a small stream 273m to the southeast. No abstractions within 1km. Not at risk of river flooding.
Hazardous Gases	Basic radon protection required. This is usually achieved by incorporating an appropriate barrier within a solid floor system, and extending the barrier through the cavity wall. Mine gas is a potential risk, and will be assessed by the required rotary hole investigation and possible borehole gas monitoring, if needed.

Ground Conditions	Topsoil, over firm/stiff natural clay with bedrock encountered between 2.6m and 4.1m depth. A 0.2m to 0.4m thick coal seam encountered at depths of between 0.8m to 3.1m across the site. No groundwater ingress encountered.
Contamination	None identified.
Remediation Strategy	No remediation required for contamination. However, measures to control the quality of any imported soils will be required (although import of topsoil/natural materials for fill is considered unlikely).
Foundations	Strip/trench fill foundations. Foundation depths to be adjusted for trees. Tree survey required. Thickened reinforced foundations in northern part of site due to fault. Same requirement for foundations if drilling and grouting works are required.
Excavations	Anticipated to be stable in short term.
Concrete	GEN1 designation for unreinforced foundations. For any reinforced concrete, other design-specific mixes will apply.
Soakaways	Soakaway drainage not considered feasible.
Road Pavement	A design CBR value of between 2.5% and 4% is considered applicable on the natural clay.

2.0 TERMS OF REFERENCE

- 2.1 Orion Homes Ltd is considering developing the site at Whitehall Road West, Birkenshaw with residential properties, to include associated driveways, private gardens and access road. It was considered appropriate to implement a desk study and ground investigation to provide information to aid the planning process, viability assessment, and design of any subsequent development.
- 2.2 ARP Geotechnical Ltd was appointed by Orion Homes Ltd to carry out the investigation, which involved a desk study assessment of the geological and coal mining aspects, Ordnance Survey archive maps, radon gas, indicative flood risk, hydrogeology, landfill, and other environmental issues, primarily by assessment of a Landmark Envirocheck Report. This was supplemented by an intrusive investigation to assess the ground conditions.
- 2.3 The investigation was implemented generally in accordance with BS 5930:2015 +A1:2020 "Code of practice for site investigations", NHBC Standard Chapter 4.1 "Land quality - managing ground conditions", Environment Agency LCRM "Land Contamination Risk Management" and BS10175 : 2011 + A2 : 2017 "Investigation of potentially contaminated sites - Code of practice". This report is limited to the data obtained as part of this investigation. It should be noted that there is a possibility of variation in ground conditions between test locations and interpretation of strata is given for guidance only. No liability is accepted for changes to site conditions, including groundwater levels, after the preparation of this report.
- 2.4 The general observation and assessment of the ground surface, and the identification/classification of vegetation is made in general terms only. It would be prudent for a specialist to undertake a more detailed survey, including for any invasive/harmful weeds.

- 2.5 The assessment of any topsoil is carried out in terms of potential chemical effects on human health only, and no account is taken of aesthetic or horticultural properties. Such considerations should be referred to a horticulturist or landscape architect.
- 2.6 The report has been prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Geotechnical Ltd. For the avoidance of any doubt, where ARP Geotechnical Ltd enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Geotechnical Ltd.'s consent.
- 2.7 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular the duties and obligations of the Client.
- 2.8 The report refers to, and includes, a copy of an indicative proposed layout. This is only for the purposes of generating a conceptual site model for the contamination risk assessment. Unless the proposed layout changes significantly, such that the conceptual model and risk assessment is affected, there is no requirement to re-issue this report when the layout is revised.

3.0 SITE DESCRIPTION

Site Location

- 3.1 The site, which is centred on Ordnance Survey Grid Reference 420220, 427720 is located off Whitehall Road West, in Birkenshaw, Kirklees.
- 3.2 A site location plan, aerial photograph, and topographical survey, are presented in Appendix A.
- 3.3 A walkover survey was conducted on the day of the site investigation, on 29th June 2023. Details obtained from the walkover are discussed below.

On-Site Features

- 3.4 The site has overall dimensions of approximately 80m (north - south) by 80m (east - west).
- 3.5 The majority of the site is currently occupied by overgrown vegetation and a grassed garden area. In the east of the site is a relatively large two-storey detached house with hardstanding access road and grassed garden to the rear.
- 3.6 The site is generally level (a topographical survey is included in Appendix A) but the ground surrounding it to the north, south and west is lower. To the north, Whitehall Road West, is approximately 1m lower than the site. The land to the south slopes down southwards and the car park (associated with the warehouse) to the west is at least two metres lower than the site. Photographs of the site are provided below.



Looking south towards the detached house present on site.



Looking west across the site towards the large warehouse off-site.



Looking north across the site towards Whitehall Road West.

Site Boundaries and Surrounding Land Use

- 3.7 The site is bounded by Whitehall Road West to the north, with West Yorkshire Fire Service buildings and yard beyond. To the east are residential dwellings with private gardens. To the south is vegetated rough open ground and a substation. To the west is a large warehouse building (Status International UK Limited) and associated car park.

Site History

- 3.8 Ordnance Survey archive maps were obtained for the site. Copies of the maps are included in Appendix B, and a summary of the findings is given below.

Map Date	On-Site	Off-Site
1852	Undeveloped field with field boundary shown approximately in the middle of the site.	Whitehall Road West immediately to the north, multiple coal pits and sandstone quarries in the general surrounding area. Small collieries. Public house and detached isolated dwellings.
1893	Site is an undeveloped field with no field boundary shown inside the site.	Much the same but fewer coal pits and quarries shown. More houses are shown to be present. A colliery 200m northwest is shown to mine coal and ironstone.
1922	No Significant change.	No significant change.
1938	No significant change.	More houses present in the surrounding area. Houses built directly to the east of the site.
1956 to 1957	Southeast corner of the site is fenced with a small outbuilding (possibly chicken coop).	No significant change but general housing development.
1977	No significant change.	Fire service HQ to northeast (not in its current location) and M62 motorway shown 200m to the southwest.

2000	No significant change.	General development of houses and a school.
2023/Current layout	House and access drive in the east and rough/vegetated ground to the west. (From aerial records it appears the existing house on site was built between 2002 and 2009).	Large warehouse is adjacent to the west, and large housing development is now present 50m to the south.

3.9 In summary, there is no indication of any significant potentially contaminating uses of the site. The site has only ever been developed with a small outbuilding (likely a chicken coop) and a detached house (some time after 2002) in the east of the site. There is no evidence of any previous development on the remainder of the site. It is possible that thin and localised areas of made ground associated with the building of the house and the outbuilding (chicken coop) exist on site.

4.0 ENVIRONMENTAL SETTING

Geology

- 4.1 Extracts from the British Geological Survey 1:50,000 Series Geology Maps are included within the Envirocheck Geology Report in Appendix C. The maps show the majority of the site to be underlain by the Lepton Edge Rock (Sandstone) with the far northeastern corner of the site underlain by the Pennine Lower Coal Measures (sandstone, siltstone and mudstone). No superficial/drift deposits are shown to exist on the site.
- 4.2 The maps indicate a geological fault to be present immediately adjacent to the northern boundary of the site.

Coal Mining

- 4.3 A CON29M Coal Mining Report was obtained from Terrafirma. A copy of the report is included in Appendix D, and a summary is given below.
- 4.4 The site is in the likely zone of influence of recorded workings in two seams of coal at 91m to 149m depth, and last worked in 1969. Any associated ground movement should by now have ceased. However, the site is recorded to be situated within 20 metres of a known coal seam outcrop. This coal is suspected to have been historically worked at a depth of less than 30 metres beneath the surface, within the vicinity of the site.
- 4.5 The report refers to reserves in the locality that could be worked at some time in the future. However, given the effective abandonment of the coalfields in this area, any future workings are considered highly unlikely.
- 4.6 There are no recorded mine entries on or within 20m of the site. However, there is a theoretical risk of unrecorded mine entries in the locality due to the suspicion of historical workings taking place within the vicinity of the site.

- 4.7 In view of the above, there is the possibility of unrecorded shallow workings and this will need to be assessed by an intrusive investigation using a rotary drilling rig.

Coal Recovery

- 4.8 There may be coal beneath the site at depths which could be worked by open excavation. However, the depth is uncertain and will need to be assessed further. There may be arisings of coal during proposed development works, depending on the depth of the coal.

Hydrogeology

- 4.9 The Landmark Envirocheck Report, included in Appendix E, indicates the Bedrock Aquifer Designation to be a "Secondary A". These Aquifers comprise "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers". There are no superficial/drift deposits indicated to exist on the site.
- 4.10 There are no groundwater abstractions within 1km of the site and, as such, abstractions should be unaffected by any site activity.
- 4.11 The site is not within a groundwater Source Protection Zone.

Hydrology

- 4.12 The general area slopes to the southwest. The nearest downslope surface water is a small stream, at 273m to the southeast.
- 4.13 The site is not in an area at risk from river flooding. The risks of flooding from other causes such as adverse topography or insufficient surface water drainage, are not considered here. If such risk needs to be quantified, a separate specialist Flood Risk and Drainage Report

should be commissioned, if not already available. BGS data indicates the general area has "limited potential for groundwater flooding to occur".

- 4.14 There are no surface water abstractions within 1km down gradient of the site.

Other Environmental Data

- 4.15 The Landmark Envirocheck Report, included in Appendix E, contains information on numerous environmental aspects. A summary of the pertinent findings, not already covered, with additional comments, is given below.

4.15.1 There are no Pollution Control Authorisations within 250m of the site.

4.15.2 There are no discharge consents relating to, or adjacent to, the site.

4.15.3 There are no closed or currently licenced landfills within 250m of the site.

4.15.4 The site is in an intermediate probability radon area, as between 3% and 5% of homes are above the action level. Therefore, basic radon protection is required. This is normally achieved by incorporating a radon barrier within a solid floor system, and extending the barrier through the cavity wall.

4.15.5 There are no contemporary trade directory entries relating to any activities which could have significant impact on the site.

4.15.6 There are no fuel station entries within 250m of the site.

5.0 PRELIMINARY RISK ASSESSMENT AND CONCEPTUAL MODEL

5.1 Part II A of the Environmental Protection Act (EPA) 1990 became effective from 1st April 2000. The Regime was introduced by the Contaminated Land (England) Regulations 2000 (SI 2000, No. 227) along with the associated DEFRA Circular February 2000.

5.2 Section 78A (2) of the Act defines "Contaminated land is any land in such a condition, by reason of substances in, on or under that land that –

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused".

From S78A (4) "Harm" : means harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property.

Controlled waters are defined as "..the waters in any relevant lake or pond, or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata". From the 1st October 2004, the definition of groundwater in relation to Part IIA was amended, by the Second Water Act Commencement Order SI 2004 No 2528. This makes clear that "ground waters" does not include waters above the saturation zone, i.e. does not include any soil water and pore water present in the unsaturated zone.

5.3 The objectives of the regime are to ensure that risks associated with contaminated land are reduced to an acceptable level, having regard to the costs of doing so. The costs should be proportionate, manageable and economically sustainable.

- 5.4 In assessing risk, it is necessary to consider the probability, or frequency, of occurrence of the hazard and the magnitude/seriousness of the consequences. Consequently, for land to be classified as contaminated, it must have, or be very likely to have, a detrimental effect on humans or the environment before it can be classified as contaminated land.
- 5.5 In establishing risk, the concept of the pollutant source/pathway/receptor linkage model, based on current and proposed site use, is to be considered. Therefore for a site to be deemed contaminated under the Regime, all three linkages must be in place i.e. the site must not only contain harmful substances, but the substances must have a pathway by which to leak out and cause significant harm to a receptor.
- 5.6 The Environment Agency has published guidance on contaminated land, in the form of online documents referred to as LCRM "Land Contamination Risk Management". The documents are intended to provide the technical framework for structured decision making about land contamination, and to assist all those involved in "managing" the land, in particular landowners, developers, financial service providers, planners and regulators. As the documents currently provide the framework for best practice, the general principles are, therefore, followed in conducting the assessment below.
- 5.7 The categorisations of risk adopted in this report are adapted from CIRIA Report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001). This approach assesses the potential severity of any pollution event and the probability of the event occurring, to arrive at a risk category, for the various potential source - pathway - receptor linkages. The relevant tables used, with the definitions, are presented in Appendix F.

Conceptual Site Model

- 5.8 It is known that the site is proposed for residential development. The existing dwelling is to remain in place on the site. An indicative proposed site layout is included in Appendix G. The majority of the site is shown to be underlain by the Lepton Edge Rock (Sandstone) with the far northeastern corner of the site underlain by undifferentiated strata of the Pennine

Lower Coal Measures (sandstone, siltstone and mudstone). The solid strata beneath the site are designated a "Secondary A" Aquifer. There are no groundwater abstractions within 1km of the site. The nearest downslope surface water is a small stream, at 273m to the southeast. There are no surface water abstractions within 1km downstream of the site.

5.9 There is no evidence of any previous development on the majority of the site. Areas of the site have been occupied by a small outbuilding (possible chicken coop) and the existing detached house on site. Although not usually contaminating activities, such minor development can sometime have been associated with the placement of imported fill materials for use as hardcore or to provide the desired topography. The site is indicated to be possibly underlain by shallow coal and/or shallow underground coal workings. The most likely contamination sources are, therefore, considered to be:

5.9.1 Possible made ground: – metals inorganics, total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH), phenol, asbestos.

5.9.2 Possible harmful gases from coal/workings: - methane, carbon dioxide.

5.10 The conceptual model needs to consider sources of contamination, pathways along which contaminants could migrate and the receptors, which may become exposed. Guidance published by the Environment Agency has been consulted with regard to pathways and receptors. The potential sources, pathways, and receptors, applicable to the proposed development are identified on the table below. Any pathways in italics are deemed not to be viable, and the reason given.

Potential Source - Pathway - Receptor Matrix (Finished Development)

Contamination Sources	Pathways	Receptors	Severity of Consequence	Probability of Event	Risk
Possible localised made ground: - metals, inorganics, TPH, PAH, phenol	<ul style="list-style-type: none"> Inhalation, ingestion and dermal contact with soil and dust 	Humans:- <ul style="list-style-type: none"> Future occupants Maintenance workers Adjacent residents and general public 	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> Fruit and vegetable intake, with soil 	Humans (as above)	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> Vapour inhalation outdoor 	Humans (as above)	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> Vapour inhalation indoor 	Humans (as above)	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> Migration in surface water 	<ul style="list-style-type: none"> Surface water (nearest downslope is 273m to south east). There are no abstractions within 1km) 	Mild	Unlikely	Very Low
	<ul style="list-style-type: none"> Migration in groundwater 	<ul style="list-style-type: none"> Groundwater (Secondary A Aquifer, no abstractions within 1km) 	Mild	Unlikely	Very Low
	<ul style="list-style-type: none"> Root uptake 	Vegetation:- <ul style="list-style-type: none"> Landscape areas Private gardens 	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> Migration 	Services/Utilities:- <ul style="list-style-type: none"> Potable water supply 	Medium	Low Likelihood	Moderate/Low
possible shallow workings/coal-methane and carbon dioxide	<ul style="list-style-type: none"> Asphyxiation Explosive risk 	<ul style="list-style-type: none"> Construction/demolition workers Future occupants Buildings 	Severe	Low Likelihood	Moderate
Possible asbestos within possible localised made ground	<ul style="list-style-type: none"> Inhalation 	<ul style="list-style-type: none"> Future occupants Maintenance workers Adjacent residents and general public 	Severe	Low Likelihood	Moderate

5.11 The above matrix indicates there are several potential source – pathway – receptor linkages applicable to the proposed development, ranging from moderate to very low risk.

5.12 The assessment was used to inform the design of the subsequent ground investigation. To fully characterise the site, in accordance with BS10175 : 2011 + A2 : 2017 "Investigation of

potentially contaminated sites - Code of practice", and to address the above concerns, it was decided that, in addition to geotechnical information required, the site investigation should include:

- 5.12.1 Trial pit excavations on a grid basis, preferably 25m spacing.
- 5.12.2 Samples of any made ground, and topsoil, issued for testing for a broad suite of determinands, including metals, inorganics, asbestos, phenols, speciated PAH, and TPH.
- 5.12.3 Upon receipt of contamination test results, any elevated TPH would be speciated to allow further risk assessment, and leachability testing undertaken on all elevated determinands, to give indication of mobility.
- 5.12.4 Gas monitoring may be required if shallow coal mining activity is identified beneath the site.

6.0 SITE INVESTIGATION

6.1 A site investigation was undertaken by ARP Geotechnical Ltd on 29th June 2023. The purpose of the investigation was to produce an assessment of the site in accordance with BS10175 : 2011 + A2 : 2017 "Investigation of potentially contaminated sites - Code of practice", and to provide geotechnical information to aid design of the development.

6.2 The site was gridded on a maximum 25m spacing and trial pits were sampled on the grid, to satisfy the requirements of the British Standard. 8No. trial pits (TP1 to TP8) were excavated, to depths of between 2.8m and 4.3m. The trial pits were organised, supervised and logged by an Engineer from ARP Geotechnical Ltd. Justifications for the trial pit locations are given below.

LOCATION	REASON
TP1-TP2	Part of grid and for plot foundations
TP3-TP4	Part of grid and adjacent to proposed access road
TP5-TP7	Part of grid and for plot foundations
TP8	Part of grid and adjacent to proposed access road

6.3 The trial pit and borehole logs are included in Appendix H, along with the location plan. It should be noted that the co-ordinates on the logs have not been surveyed in, but are automatically determined by the logging software (which incorporates mapping) following positioning of each location by the Engineer. However, each position has been located using smartphone GPS, with an indicated accuracy of 2m to 3m at the time of the investigation.

6.4 Chemical analysis of 8No. soil samples for metals, inorganics, speciated PAH, TPH, phenols, and asbestos was undertaken by the UKAS accredited Chemtest Laboratory in Newmarket. The test certificates are included in Appendix J.

6.5 Analysis for Atterberg Limits and moisture content was undertaken by the UKAS accredited Professional Soils Laboratory (PSL) in Doncaster. Geochemical testing comprising pH and water soluble sulphate was undertaken by Chemtest. The test certificates are included in Appendix J.

7.0 SUMMARY OF GROUND CONDITIONS

Strata and Groundwater

- 7.1 Topsoil was present from the ground surface to between 0.2m and 0.3m depth in all trial pit locations.
- 7.2 Made ground was only present in TP1 from 0.2m to 0.45m, comprising reworked natural clay. All other locations did not identify any made ground to be present.
- 7.3 Firm to stiff (medium to high strength) clay was encountered below the topsoil (and made ground in TP1 only) and was present to depths of between 2.6m and 4.1m, at which depth bedrock was encountered.
- 7.4 The bedrock comprised extremely weak siltstone in all except TP6, where extremely weak mudstone was present.
- 7.5 A weathered coal seam was present in the clay above the bedrock. The top of the coal seam was encountered at depths of between 0.8m and 3.1m. The coal seam was between 0.2m and 0.4m thick.
- 7.6 The excavations generally remained stable for the short period of exposure and the pits were backfilled with the arisings on completion. No groundwater ingress was encountered during the site investigation.

8.0 CONTAMINATION ASSESSMENT

Screening Values - Soils

- 8.1 There is presently conflicting opinion with regard to the appropriate generic assessment criteria, or screening values, for soils which should be used in contamination assessment for proposed development. In March 2014, DEFRA published Category 4 Screening Levels (C4SLs) for six contaminants: arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead. The values are based on the toxicological benchmark of a "low level of toxicological concern" (LLTC) rather than the previous regulatory approach of "minimal or tolerable level of risk". As the C4SLs are less protective of health than the previous approach, the Chartered Institute of Environmental Health (CIEH) has advocated an alternative approach based on minimal risk, but with some adjustment of exposure parameters to more realistic scenarios than those previously used. To this end, the CIEH has collaborated with Land Quality Management to publish "Suitable 4 Use Levels" (S4ULs) "The LQM/CIEH S4ULs for Human Health Risk Assessment", November 2014 (LQM/CIEH). However, DEFRA has reiterated its intention that the C4SLs should be used in generic risk assessment for proposed development, and there is indication that other parties will collaborate, in the near future, to extend the range of C4SL determinands beyond the six published so far.
- 8.2 In the absence of a final resolution to the issue, soil contamination test results in this report have been compared first against the more conservative S4UL, and where a C4SL exists for the same determinand, consideration given to the use of the C4SL for any exceedances of the S4UL, within the site specific context (including the use of benzo(a)pyrene as a surrogate marker for genotoxic PAH compounds, where appropriate). Where no S4UL exists for a determinand, for example lead, the C4SL has been used. The LQM/CIEH screening values have been calculated for soil organic matter contents of 1% and 2.5%, as well as 6%, and the appropriate screening value is used for the organic matter content of the soil. All the C4SL values published are for a soil organic matter content of 6%.

8.3 A table showing the screening values utilised is included in Appendix J.

Soils Analysis

8.4 Eight soil samples were issued to the UKAS accredited Chemtest Laboratory in Newmarket, for a suite of testing (As, Cd, Cr (VI), Cr(III), Cu, Hg, Ni, Pb, Se, Zn, Total Sulphate, Water Soluble Sulphate, pH, Phenol-monohydric, Speciated PAH, Total TPH, Asbestos, and Organic Matter). The testing comprised:

6No. samples of Topsoil from TP2, TP3, TP4, TP6, TP7 and TP8

1No. sample of Made Ground/Reworked Natural Ground from TP1

1No. sample of Natural Clay from TP5

Topsoil

8.5 Results for the topsoil were all below screening values, with the exception of a single elevated concentration of dibenzo(a,h)anthracene, at 2.3mg/kg in TP2. However, the results of this testing support the use of benzo(a)pyrene as a surrogate marker, and all benzo(a)pyrene concentrations are well below the screening values. In the light of this, the concentrations of dibenzo(a,h)anthracene are not considered to pose significant risk. The topsoil is, therefore, considered to be acceptable for re-use on the site, in terms of human health.

Made Ground/Reworked Natural Ground

8.6 No determinands within the reworked natural strata were found to be in excess of screening values. The material is, therefore, compatible with the intended residential use, in terms of human health.

Natural Clays

- 8.7 No determinands within the natural clays were found to be in excess of screening values. The natural clay is, therefore, compatible with the intended residential use, in terms of human health (as would be anticipated).

Updated Risk Assessment and Conceptual Model

- 8.8 The updated source – pathway – receptor matrix is presented below, taking into account the findings of the investigation. Any pathways in italics are deemed not to be viable, and the reason given.

Viable Source - Pathway - Receptor Matrix (Finished Development)

Contamination Sources	Pathways	Receptors	Severity of Consequence	Probability of Event	Risk
possible shallow workings/coal:-methane and carbon dioxide	<ul style="list-style-type: none">• Asphyxiation• Explosive risk	<ul style="list-style-type: none">• Construction/de-molition workers• Future occupants• Buildings	Severe	Low Likelihood	Moderate

- 8.9 The site investigation did not find any ground contamination requiring any remedial action or further assessment.
- 8.10 It can be seen from the above matrix that the only remaining pathway to receptors is from possible mine gases, with moderate risk applicable, and this may affect users of the finished development. A rotary borehole investigation for shallow coal mining (along with the installation of gas monitoring points and subsequent gas monitoring) is required. Depending on the results, it is possible that some form of remedial action (usually gas membrane and ventilated sub-floor void) may be required to allow residential development without excess risk.

Risk Based Assessment of Remedial Options

Mine Gases

- 8.11 To address the potential risk from mine gases, a rotary borehole investigation is to be undertaken to identify if shallow coal workings are present beneath the site. If they are found to be present at shallow depth, then gas monitoring wells will be installed within the boreholes, and gas monitoring subsequently undertaken. This will determine whether or not protection measures are likely to be necessary. This will be confirmed by separate letter report on completion of the monitoring.

Migration to Utilities

- 8.12 Any migration to utilities is unlikely to be significant on this site. However, the local water company are likely to require details of the history of the site and the contamination test results, to confirm that protection of buried water supply pipes from chemical attack/ingress is not required.

Summary of Contamination Assessment and Remedial Options

- 8.13 The contamination risk assessment has identified that no remediation works are considered necessary on site, apart from the possibility that mitigation measures may need to be incorporated into the dwellings to protect against risks from mine gas. Any such requirement will be confirmed in due course by rotary borehole investigation and, if required, subsequent gas monitoring. Mitigation, if required, is usually a gas membrane and ventilated sub-floor void. It should be noted that the site already requires a radon barrier and, therefore, the mitigation measures (if required) for mine gas are likely to only require a higher specification membrane and validation.
- 8.14 Any imported soils (unlikely to be required) to be used on site will need to be verified as suitable by inspection and testing, in accordance with guidance supplied in the document

produced by the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG): "Guidance on the Verification Requirements for Cover Systems".

8.15 A Method Statement for assessment of any imported soils is included in Appendix K.

9.0 GEOTECHNICAL TESTING

9.1 Selected samples of the natural strata were delivered to PSL in Doncaster for testing with regard to plasticity indices and moisture content. Test certificates are presented in Appendix J and a summary of the results, including Modified Plasticity Indices, is given below.

Location	Depth (m)	MC	LL	PL	PI	% <425µm	I'p
TP1	1.2	22	62	27	35	100	35
TP4	2.7	20	56	25	31	100	31
TP6	2.2	7.9	39	19	20	95	19
TP8	1.2	28	59	26	33	100	33
	No. of results	4	4	4	4	4	4
	Min.	22	62	19	20	95	19
	Max.	7.9	39	27	35	100	35

I'p	VCP
>40%	High
20% - <40%	Medium
10% - <20%	Low

MC = Moisture Content (%)	LL = Liquid Limit (%)	PL = Plastic Limit (%)
PI = Plasticity Index (%)	I'p = Modified PI (%)	VCP = NHBC Standard Chapter 4.2 Volume Change Potential

9.2 The plasticity test data show clays of Intermediate to high plasticity, in accordance with BS 5930:2015 +A1:2020 "Code of Practice for Site Investigations". When the percentage retained on the 425 micron BS sieve is considered, the Modified Plasticity Index, in accordance with NHBC Standard Chapter 4.2 "Building Near Trees" is a maximum of 35. In accordance with the Standard, this equates to Medium Volume Change Potential.

9.3 Geochemical testing (water soluble sulphate and pH) was undertaken on selected samples by Chemtest, comprising four samples of natural strata. In accordance with the BRE Special Digest 1 "Concrete in aggressive ground", the characteristic values are given below:

Characteristic Values

Material	pH	SO₄
Natural Strata	5.7	37

SO₄ = Sulphate content in mg/l on a 2:1 water : soil extract pH = Acidity

9.4 The geochemical analyses show the natural strata to have low water soluble sulphate content and near neutral pH. The Aggressive Chemical Environment for Concrete (ACEC) class is AC-1 therefore the use of GEN1 designated concrete will be satisfactory for unreinforced buried concrete. For any reinforced buried concrete, other design-specific mixes will apply.

10.0 GEOTECHNICAL ASSESSMENT

Coal Mining and Coal Recovery

- 10.1 The site is in the likely zone of influence of workings in two seams of coal at 91m to 149m depth, and last worked in 1969. Any associated ground movement should by now have ceased. However, the site is recorded to be situated within 20 metres of a known coal seam outcrop. This coal is suspected to have been historically worked at a depth of less than 30 metres beneath the surface, within the vicinity of the Site.
- 10.2 The report refers to reserves of coal in the locality that could be worked at some time in the future. However, given the effective abandonment of the coalfields in this area, any future workings are considered highly unlikely.
- 10.3 There are no recorded mine entries on or within 20m of the site. However, there is a theoretical risk of unrecorded mine entries in the locality due to the suspicion of historical unrecorded workings taking place within the vicinity of the site.
- 10.4 In view of the above, there is the possibility of unrecorded shallow workings and this will need to be assessed by an intrusive investigation using a rotary drilling rig.
- 10.5 There is a persistent coal seam at shallow depth below the site (0.8m to 3.1m depth) but the seam is weathered and of very poor quality. Therefore, it is not considered feasible that this coal seam could be utilised or have any significant economic value. Arisings of coal from any excavations through this seam should be kept separate from other arisings, and stored and disposed of separately.

Foundations

- 10.6 The natural medium to high strength (firm to stiff) clays (encountered consistently at shallow depth) are considered suitable for the use of strip/trench fill foundations. An allowable bearing pressure of 120kN/m² is considered applicable. Subject to location and depth-specific assessment, higher allowable bearing pressures may be available.
- 10.7 The clays were shown to be of Medium Volume Change Potential. Therefore, in accordance with NHBC Standard Chapter 4.2 "Building Near trees", in the absence of trees, a minimum foundation depth of 0.9m below existing or proposed ground level is applicable, whichever is the lower. However, in the presence of any proposed, existing or removed trees, the foundation may need to be deepened, depending on the type of tree and its distance from the face of the foundation. If not already available, a tree survey may be required to enable a foundation schedule to be prepared. The tree survey will also need to consider trees on third party properties.
- 10.8 It is recommended that the guidance contained within NHBC Standard Chapter 4.2 "Building Near trees" is observed in relation to any requirement for heave protection. There are some mature/large existing trees on the site and these may result in significantly deepened foundations. It should be noted that once the bedrock (mudstone/siltstone) has been encountered, then this material is not considered to have volume change potential, and foundations do not need to be deepened further.
- 10.9 The foundation should be taken onto natural ground. The whole plan area of the foundation should be placed on similar natural material. Foundations should not be placed directly onto the coal seam. If the coal seam is encountered in the foundation excavation, then excavation should continue to the underside of the coal seam, so that its depth/thickness has been fully removed below the foundation.
- 10.10 Where any foundation penetrates the coal seam, the foundation should be surrounded by a membrane to prevent sulphate attack, and there should be 250mm thickness of concrete

on the outer face of the foundation, outside the membrane. This is a sacrificial barrier in the unlikely event of a fire in the seam approaching the house from the outside. The risk of combustion from inside is considered very remote, so there is no requirement for additional concrete on the inside of the footprint. If the foundation steps back up above the coal elsewhere on the plot, there is no requirement for these measures.

- 10.11 If bedrock is encountered on part of a foundation excavation, the rest of the plot should be deepened to ensure founding on similar material. However, if rock is not encountered by 2.5m depth on the remainder of the plot, then the Engineer should be contacted for further advice.
- 10.12 Foundations within 20m of the geological fault, indicated to be located immediately adjacent to the northern boundary of the site, will need to be 300mm thick and reinforced with two layers of B503 mesh – one near the bottom and one near the top, to mitigate any potential differential settlement associated with more deeply weathered zones or tilted/stepped strata.
- 10.13 If shallow mine workings are identified beneath the site (a site investigation is due to be undertaken to assess this) which require drilling and grouting, the foundations above the treated zone/area will need to be 300mm thick and reinforced with two layers of B503 mesh – one near the bottom and one near the top.

Excavations

- 10.14 It is likely that excavations into the natural strata will remain stable in the short term, requiring minimum trench support, in accordance with the prevailing statutory guidance.
- 10.15 No groundwater ingress was encountered during the site investigation. If any localised/perched groundwater ingress occurs during development works, it should be controllable by pumping from an artificial sump.

- 10.16 Excavations should be readily achieved using conventional hydraulic plant. However, excavations into intact bedrock or any buried foundations and structures are likely to require a hydraulic breaker.

Chemical Precautions

- 10.17 The geochemical analyses show the natural strata to have low water soluble sulphate content and near neutral pH. The Aggressive Chemical Environment for Concrete (ACEC) class is AC-1 therefore the use of GEN1 designated concrete will be satisfactory for unreinforced buried concrete. For any reinforced buried concrete, other design-specific mixes will apply.

Road Pavement Construction

- 10.18 For any areas of road pavement, including parking areas, the formation will be the firm to stiff natural clays. Based on the observed characteristics of the material, and the results of the plasticity testing, a design California Bearing Ratio (CBR) value of between 2.5% and 4% is considered applicable, below any obvious soft spots, and at equilibrium moisture content. If considered necessary, this should be confirmed by testing at proposed subgrade level before construction. Formation of roads on made ground (if identified on site) will not be acceptable.

Flooding and Soakaways

- 10.19 The site is not at risk from river flooding. The risks of flooding from other causes such as adverse topography or insufficient surface water drainage, are not considered here. If such risk needs to be quantified, a separate specialist Flood Risk and Drainage Report should be commissioned, if not already available.
- 10.20 BGS data indicates the general area has "limited potential for groundwater flooding to occur".

10.21 The disposal of surface water using soakaways is considered unfeasible on this site due to the significant depth of low permeability cohesive clay, overlying low permeability siltstone and mudstone bedrock.

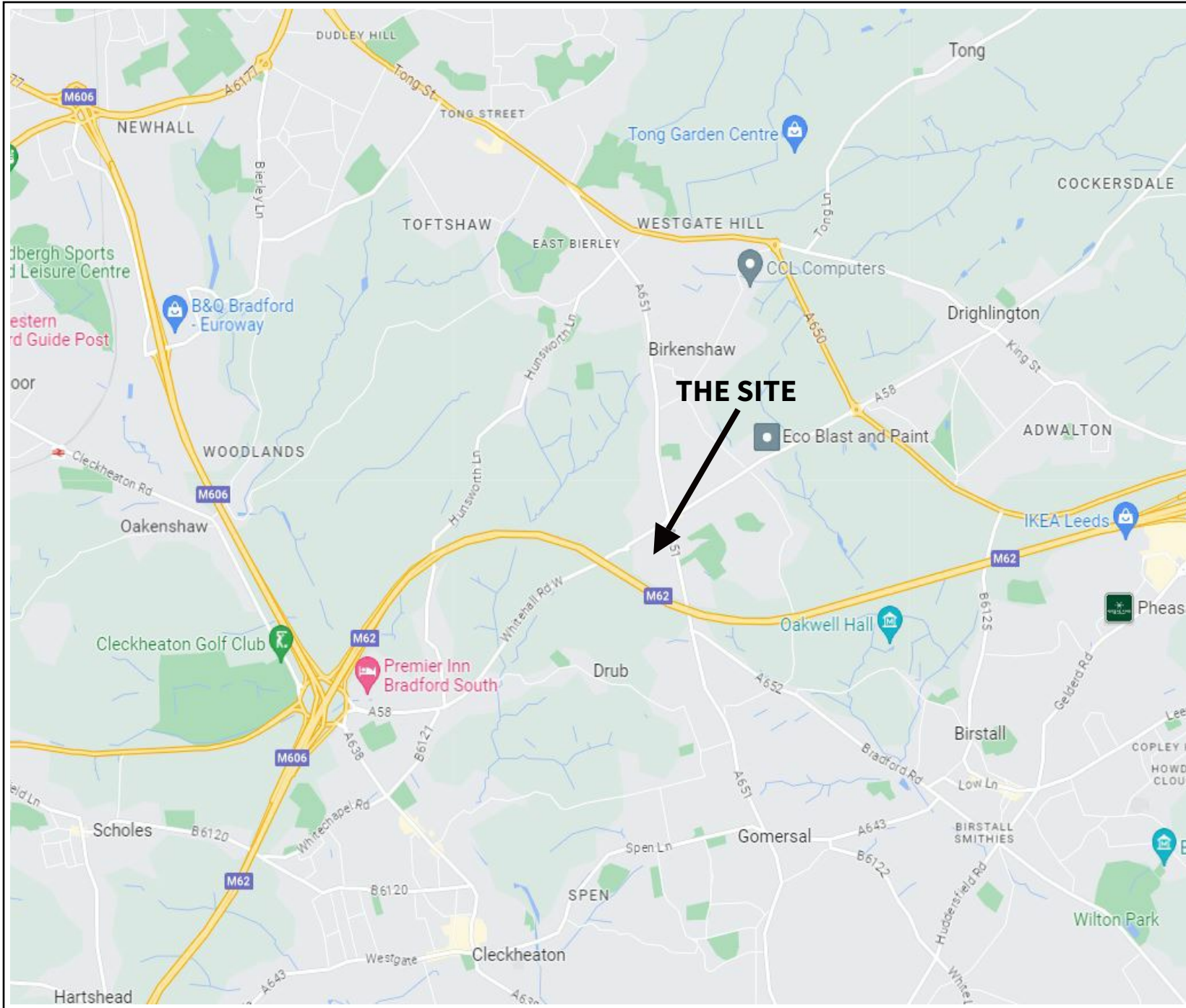
Gas Protection

10.22 Basic radon protection is required for the site. This is usually achieved by incorporating an appropriate barrier within a solid floor system, and extending the barrier through the cavity wall.

10.23 There are no landfills within 250m of the site and the risks from landfill gas are not, therefore, considered to be significant. However, potential shallow coal mining has been identified as a risk below the site. An intrusive rotary borehole investigation is scheduled to be undertaken to assess this risk and if shallow coal mining is identified, then gas monitoring apparatus will be installed, and gas monitoring undertaken and reported separately, on completion.

APPENDIX A

SITE LOCATION PLAN, AERIAL PHOTOGRAPH, AND TOPOGRAPHICAL SURVEY



0m 2000m

Approximate Scale



ARP
 ARP GEOTECHNICAL LTD
 CHARTERED CONSULTING ENGINEERS
Northwest House 5-6 Northwest Business Park Servia Hill Leeds LS6 2QH
 Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project
**WHITEHALL ROAD WEST
 BIRKENSHAW**

Client
ORION HOMES LTD

Title
SITE LOCATION PLAN

Date
AUGUST 2023

Drawn AMJ	Scale AS SHOWN
---------------------	--------------------------

Job No.
ORH/20



0m 25m

Approximate Scale



ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS
Northwest House 5-6 Northwest Business Park Servia Hill Leeds LS6 2QH
Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project **WHITEHALL ROAD WEST
BIRKENSRAW**

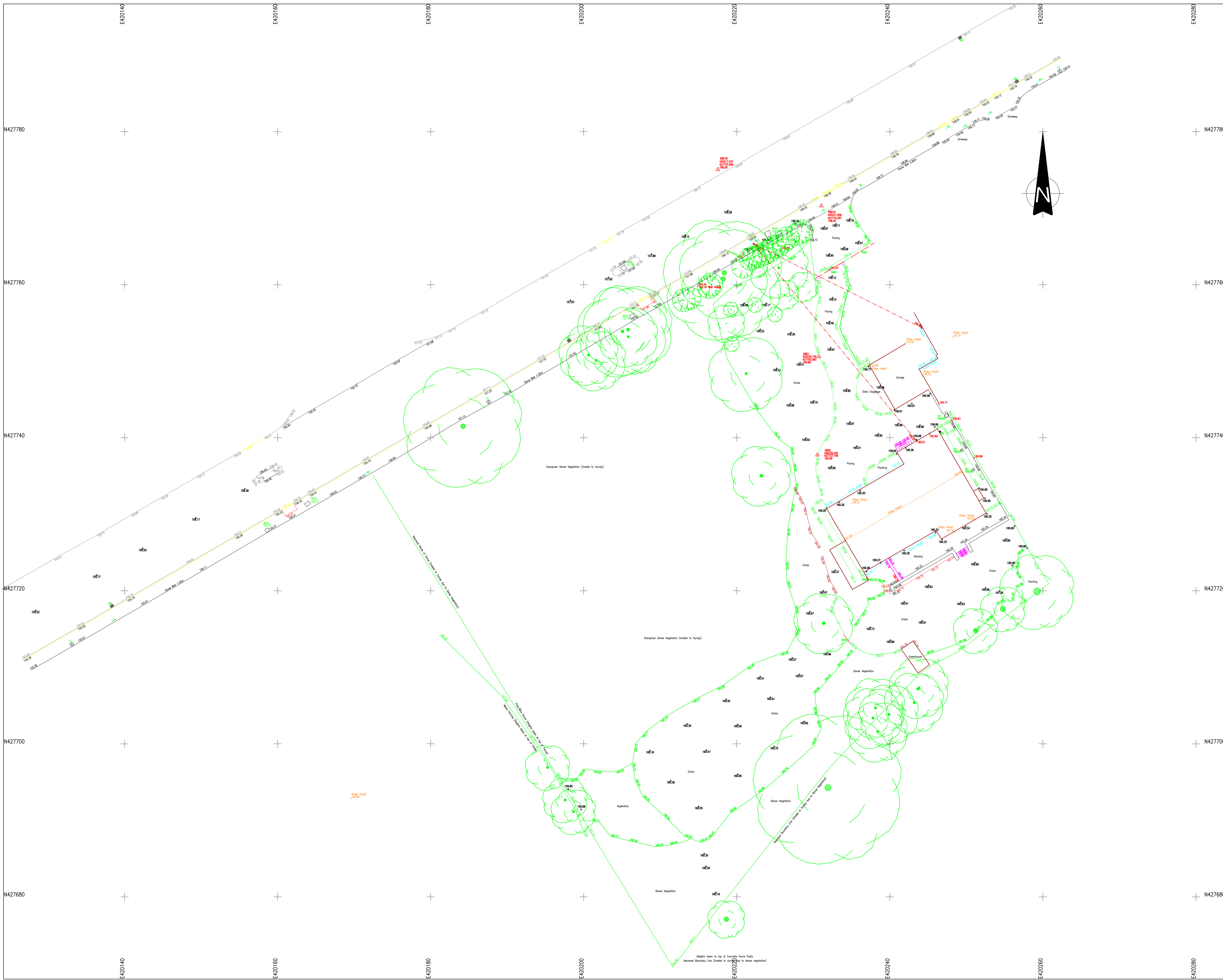
Client **ORION HOMES LTD**

Title **AERIAL PHOTO
PLAN**

Date **AUGUST 2023**

Drawn AMJ	Scale AS SHOWN
---------------------	--------------------------

Job No. **ORH/20**



SYMBOL LEGEND		LIMETYPIC LEGEND	
	Borehole		Bridge
	Benchmark		Bottom of Bank
	Bollard		Building
	Bus Stop		Canopy Edge
	Electric Box		Concrete Edge
	Electricity Pole		Ditch
	Fence Post		Drop Kerb
	Gas Stop Valve		Overhead Cable
	Gate Post		Fence
	Gas Marker		Gate
	Gully		Kerb
	Gas Well		Path
	Kerb Outlet		Pipe Line
	Litter Bin		River
	Leachate Chamber		Surface Water Drain
	Lamp Post		Railway Line
	Manhole Point		Road Centre Line
	MH Triangular		Tarmac Edge
	Wooden Peg		Top of Bank
	Ground Marker		Track
	Marker Post		Wall
	Pylon		Verge
	Rodding Eye		Flagstone Paving
	Sample Point		Stone
	Sign Post		Hedge Line
	Spot Height		Grass Edge
	Eave Level		
	Ridge Level		
	Site		
	Survey Station		
	Traffic Camera		
	Telephone Box		
	Trial Pit		
	Telegraph Pole		
	Deciduous Tree		
	Road Sign		
	Valve		
	Vent		
	Water Meter		
	Litter Box		
	MH Circular		
	Knobdown Pot		

ABBREVIATIONS

LP.	Lamp Post
TP.	Telegraph Pole
EP.	Electricity Pole
SP.	Sign Post
TS.	Traffic Sign
BS.	Bus Stop
GM.	Gas Marker Monument
MH.	Manhole
GU.	Gully
FH.	Fire Hydrant
CATV.	Cable Television Point
WM.	Water Meter
WSV.	Water Stop Valve
GSV.	Gas Stop Valve
RE.	Rodding Eye
FH.	Fire Hydrant
CATV.	Cable Television Point
WM.	Water Meter
WSV.	Water Stop Valve
GSV.	Gas Stop Valve
RE.	Rodding Eye

MANHOLE LEGEND

MHCT	Cable Television
MHEL	Electricity
MHSA	Gas
MHSW	Surface Water
MHFW	Foul Water
MHBT	British Telecom
MHWRT	Water

SURVEY IS ORIENTED TO ORDINANCE SURVEY NATIONAL GRID. POSITIONS FIXED BY GPS ACTIVE NETWORK TO CREATE A FLAT. PLANE LOCAL CO-ORDINATE SYSTEM. LEVELS TO OSGM15.

THIS SURVEY SHOWS PHYSICAL SITE BOUNDARIES ONLY. CONFIRMATION OF LEGAL OWNERSHIP SITE BOUNDARIES SHOULD BE OBTAINED BY REFERENCE TO THE H.M. LAND REGISTRY TITLE PLAN.

THE PLAN SCALE IS FOR GUIDANCE ONLY. DO NOT SCALE DIRECTLY. IF IN DOUBT, CONSULT LATITUDE SURVEYS

REV.	DESCRIPTION	DATE

LATITUDE SURVEYS | Chartered Land Surveyors

RICS | the mark of property professionalism worldwide

CLIENT

JOB TITLE

17 WHITEHALL ROAD, BIRKENSHAW

DRAWING TITLE

TOPOGRAPHIC SURVEY

DRAWN	KB	SIGNATURE	DATE	24/07/2019	STATUS	FOR COMMENT <input type="checkbox"/>
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					FINAL <input checked="" type="checkbox"/>	
SCALE	1:200	SHEET	A1	DRAWING NO.	TC1016-001	REVISION

A P P E N D I X B

ORDNANCE SURVEY ARCHIVE MAPS

Historical Mapping Legends

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

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

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

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

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

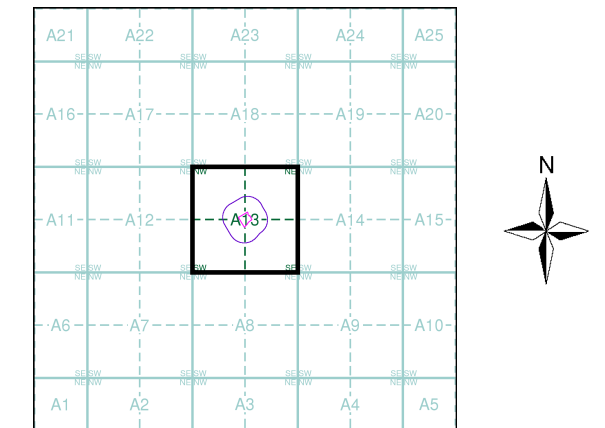
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds**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



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1893	2
Yorkshire	1:2,500	1908	3
Yorkshire	1:2,500	1922	4
Yorkshire	1:2,500	1938	5
Ordnance Survey Plan	1:1,250	1956 - 1957	6
Ordnance Survey Plan	1:2,500	1957	7
Ordnance Survey Plan	1:1,250	1963 - 1971	8
Ordnance Survey Plan	1:1,250	1969 - 1973	9
Ordnance Survey Plan	1:2,500	1970 - 1977	10
Additional SIMs	1:1,250	1977 - 1985	11
Ordnance Survey Plan	1:1,250	1986 - 1989	12
Additional SIMs	1:2,500	1990	13
Large-Scale National Grid Data	1:2,500	1992	14
Large-Scale National Grid Data	1:1,250	1993	15
Large-Scale National Grid Data	1:2,500	1996	16

Historical Map - Segment A13



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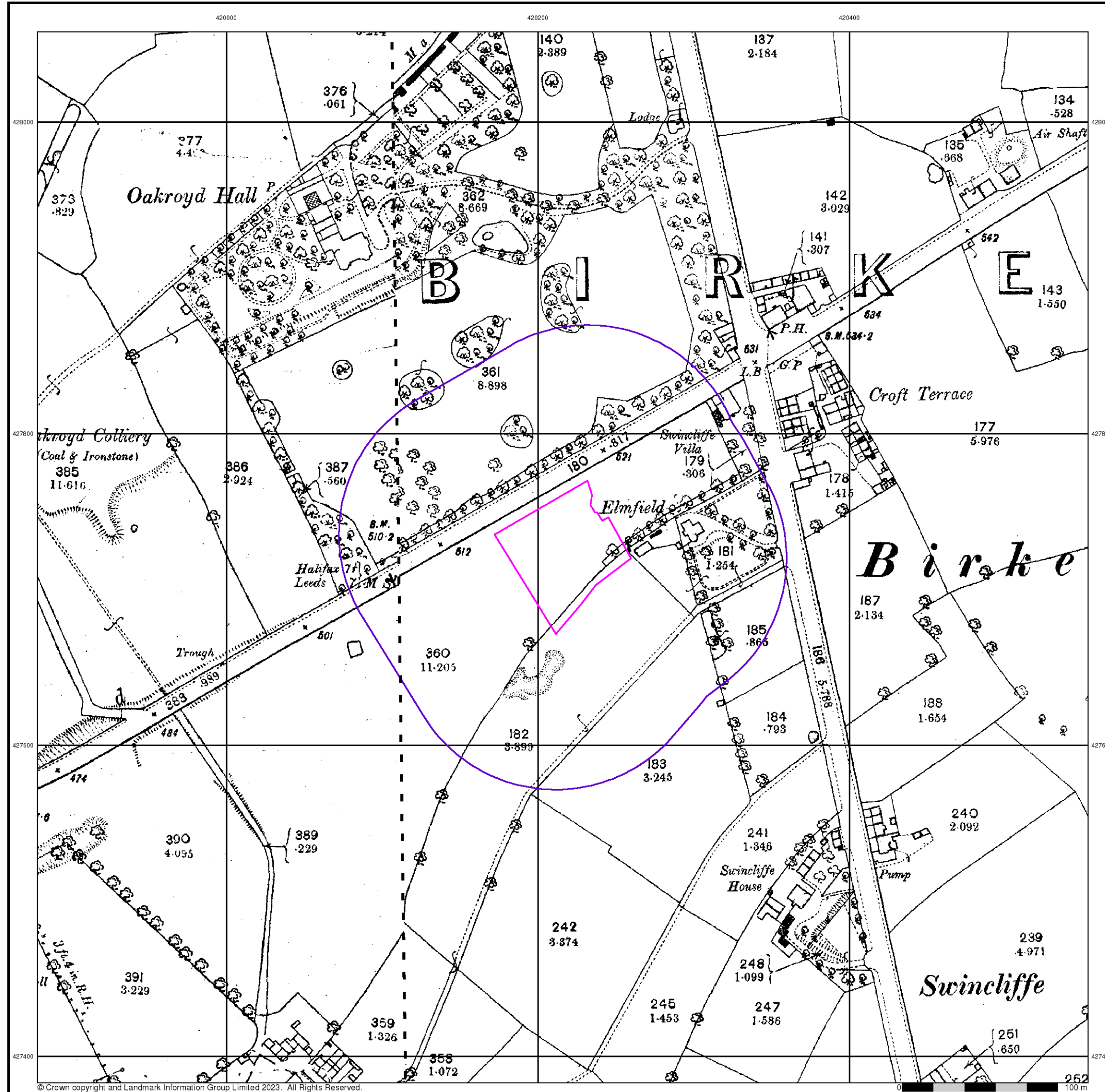
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Site Details

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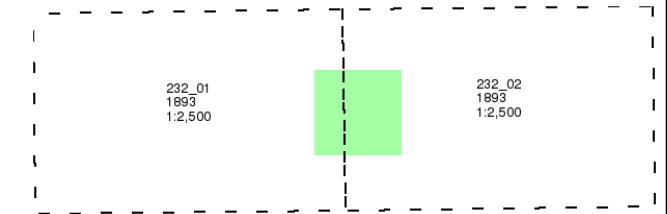
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



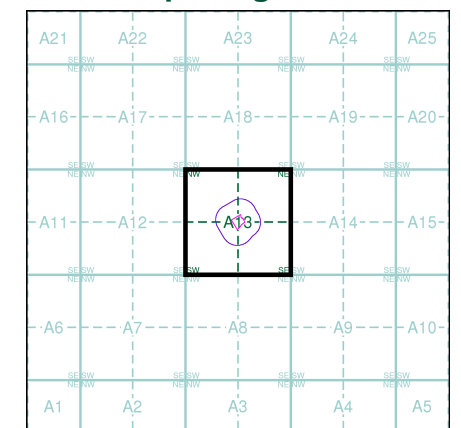
Yorkshire
Published 1893
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Map Name(s) and Date(s)

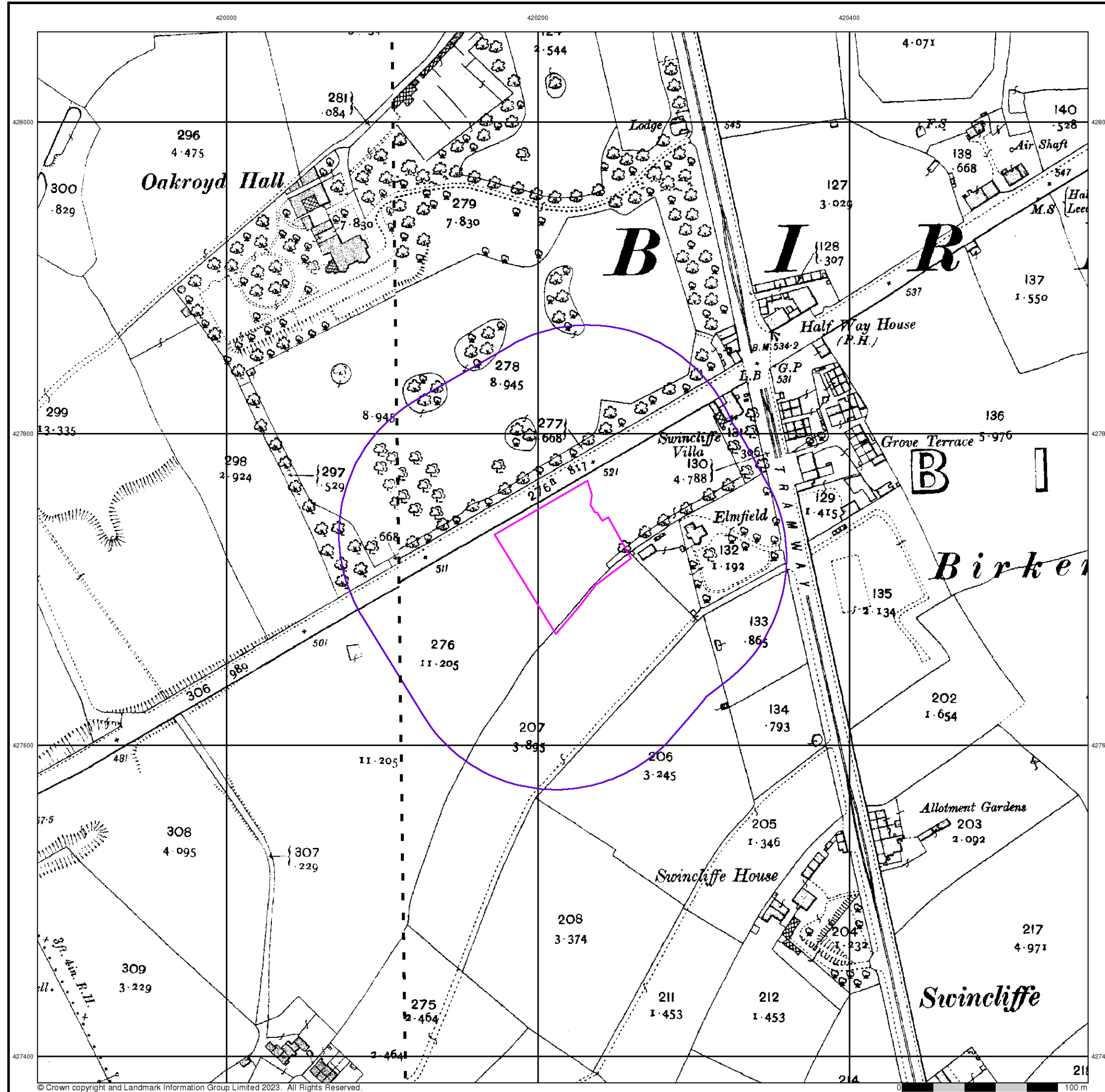


Historical Map - Segment A13



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Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees

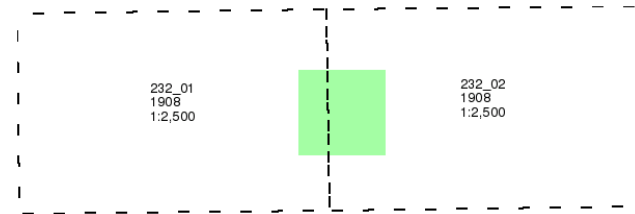


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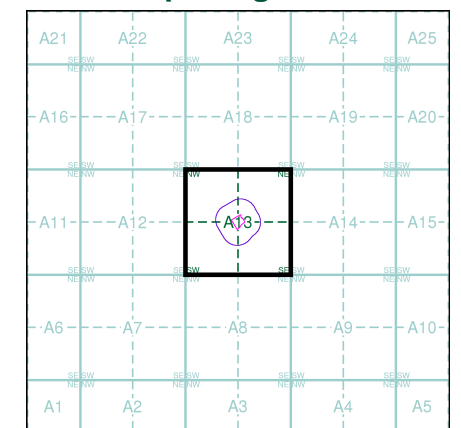
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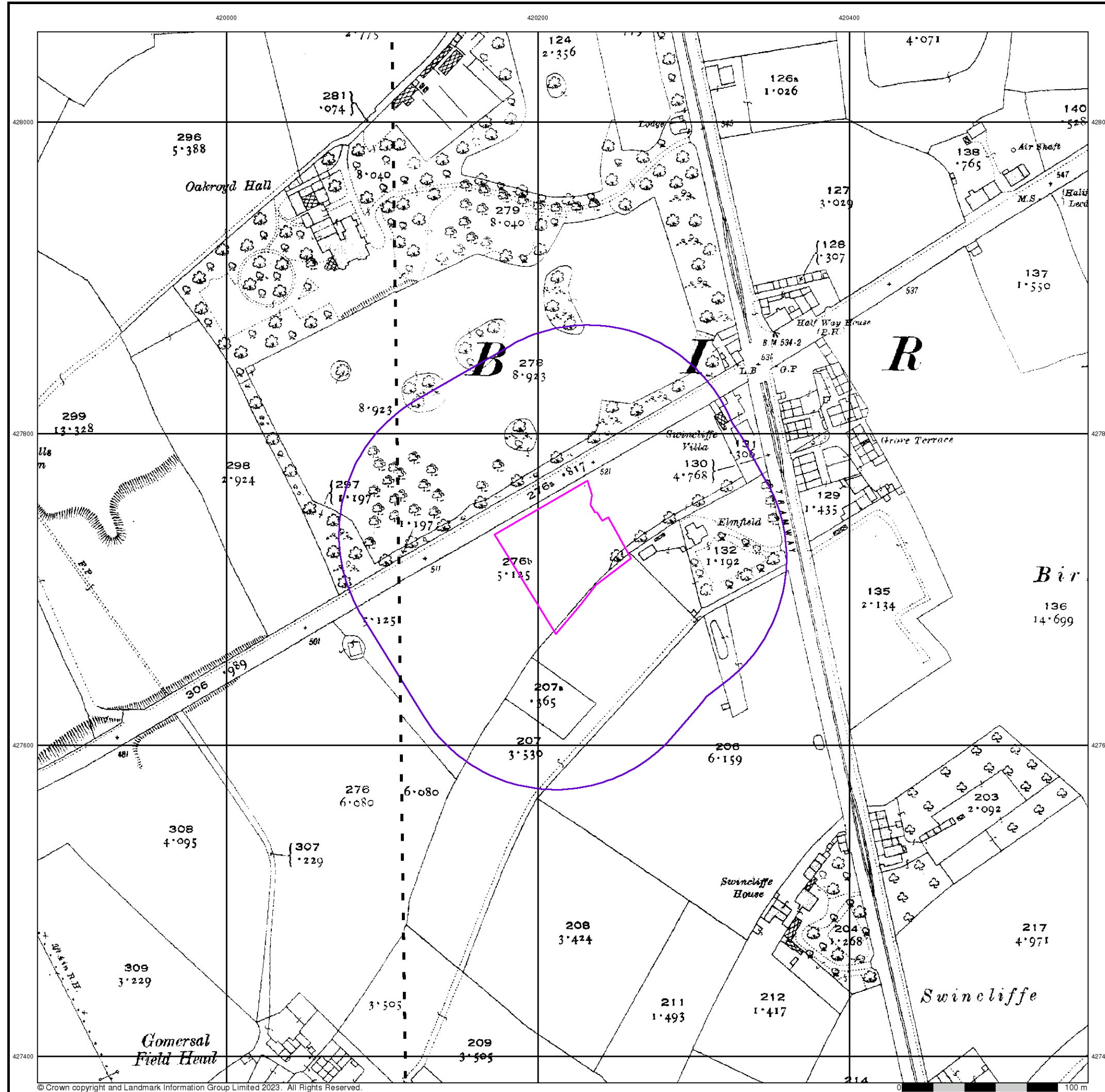


Historical Map - Segment A13



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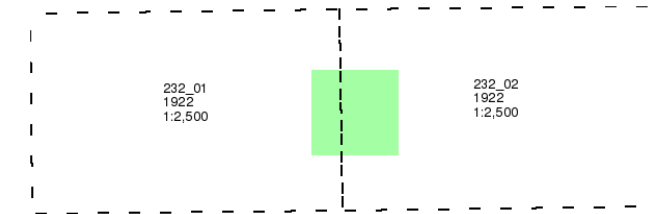
Site Details
Site at, Whitehall Road West, Birkenhead, Kirklees



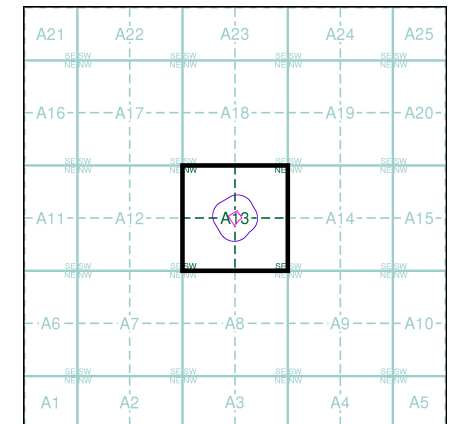
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Map Name(s) and Date(s)



Historical Map - Segment A13

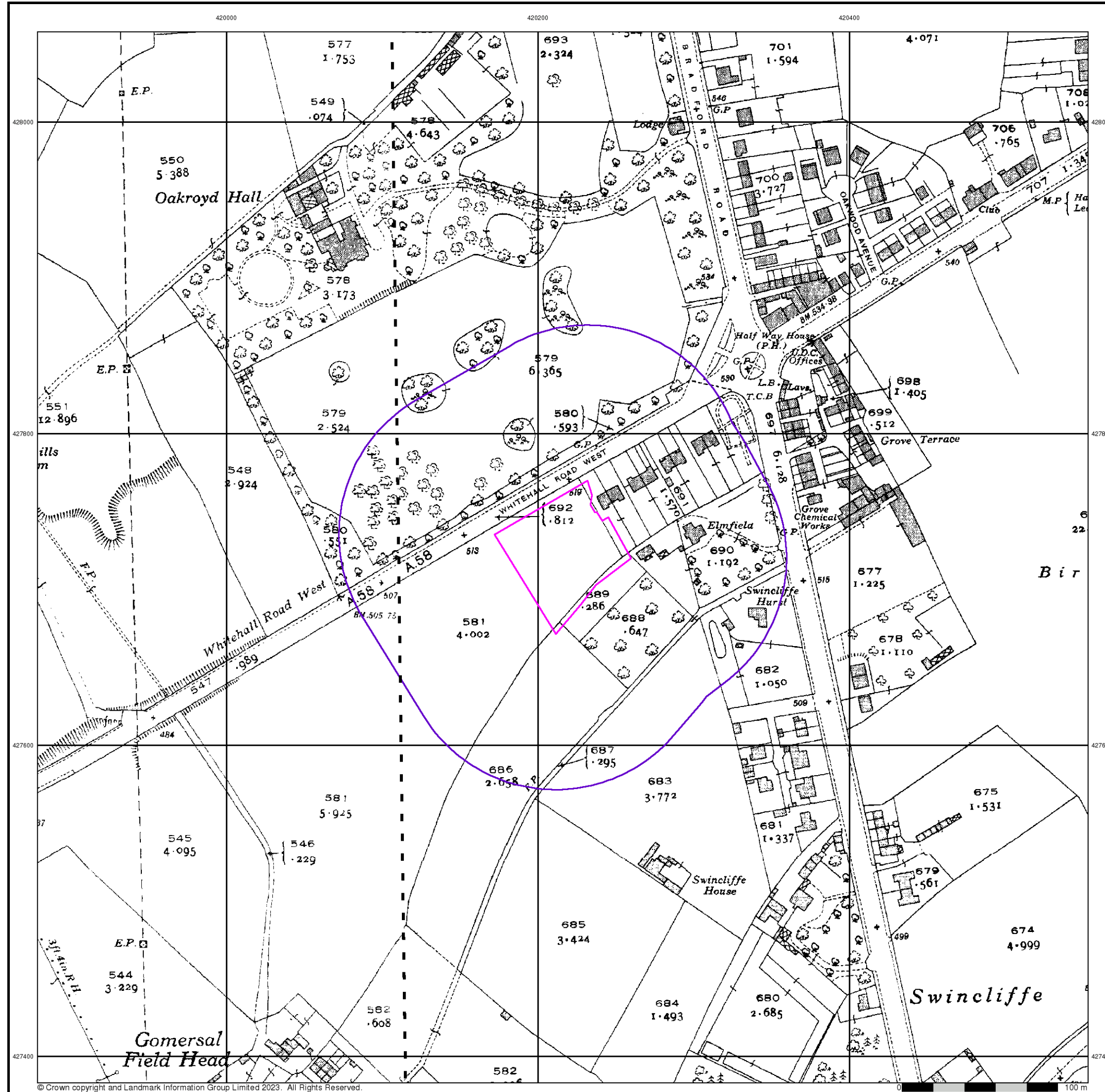


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 Search Buffer (m): 100

Site Details

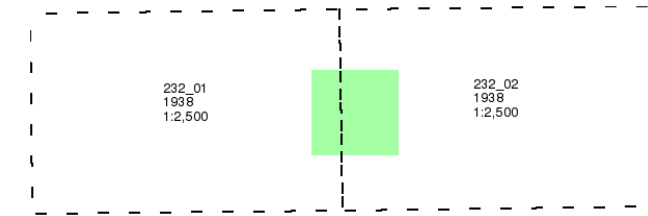
Site at, Whitehall Road West, Birkenshaw, Kirklees



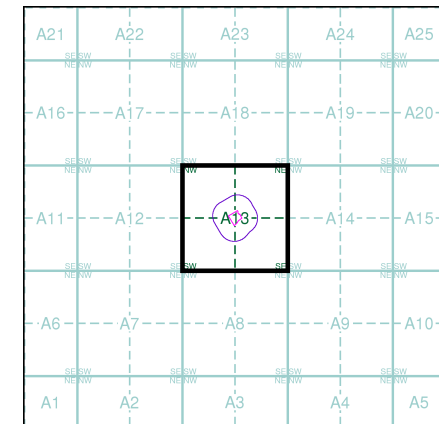
Yorkshire
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Map Name(s) and Date(s)



Historical Map - Segment A13

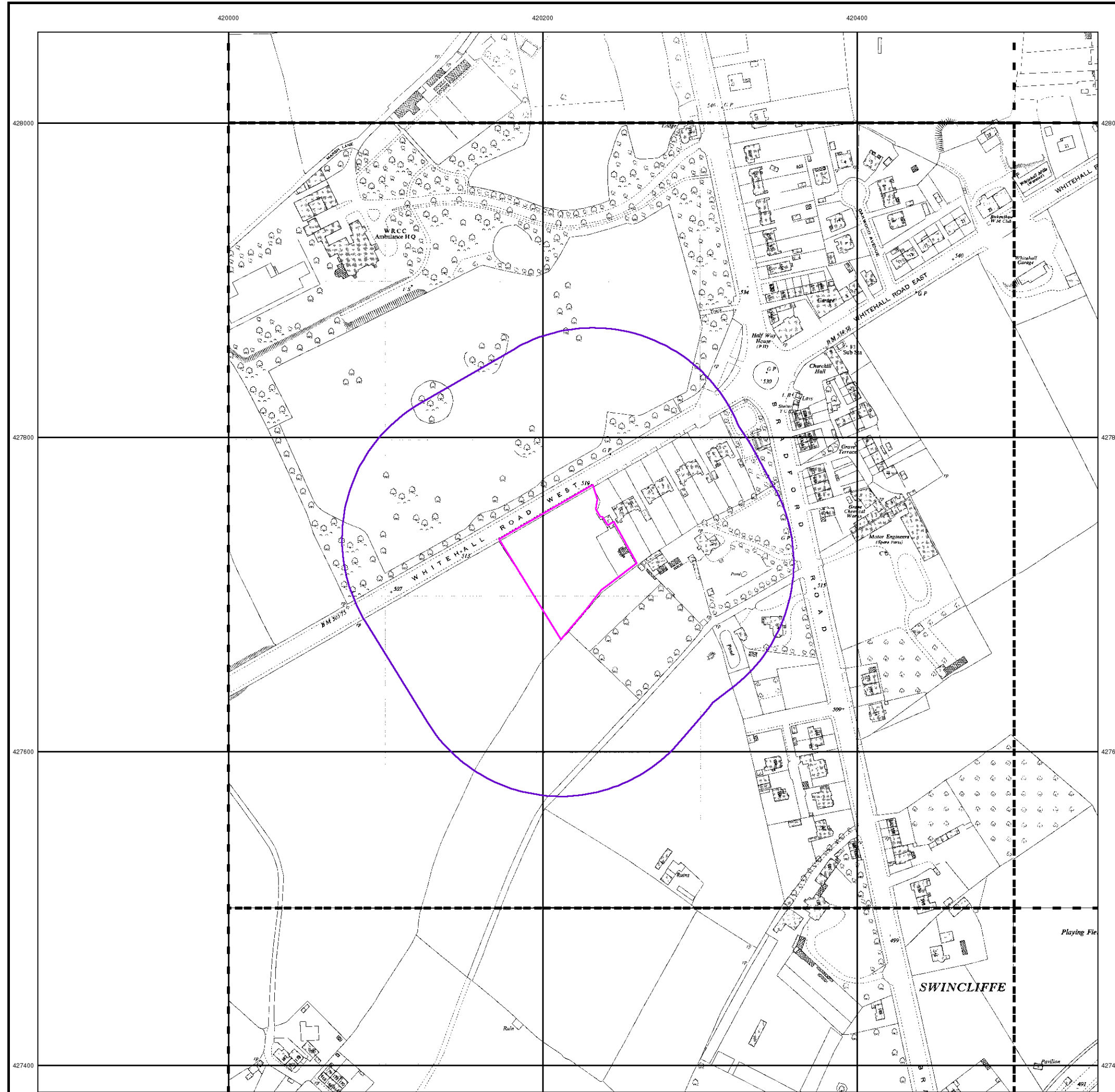


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Customer Ref: ORH/20
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Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



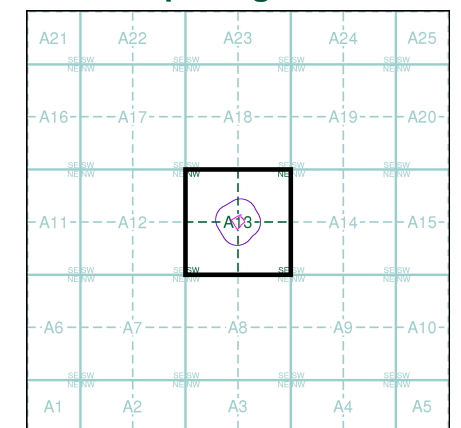
Ordnance Survey Plan
Published 1956 - 1957
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SE2028SW	SE2028SE
1957	1957
1:1,250	1:1,250
SE2027NW	SE2027NE
1956	1956
1:1,250	1:1,250
SE2027SW	SE2027SE
1956	1956
1:1,250	1:1,250

Historical Map - Segment A13

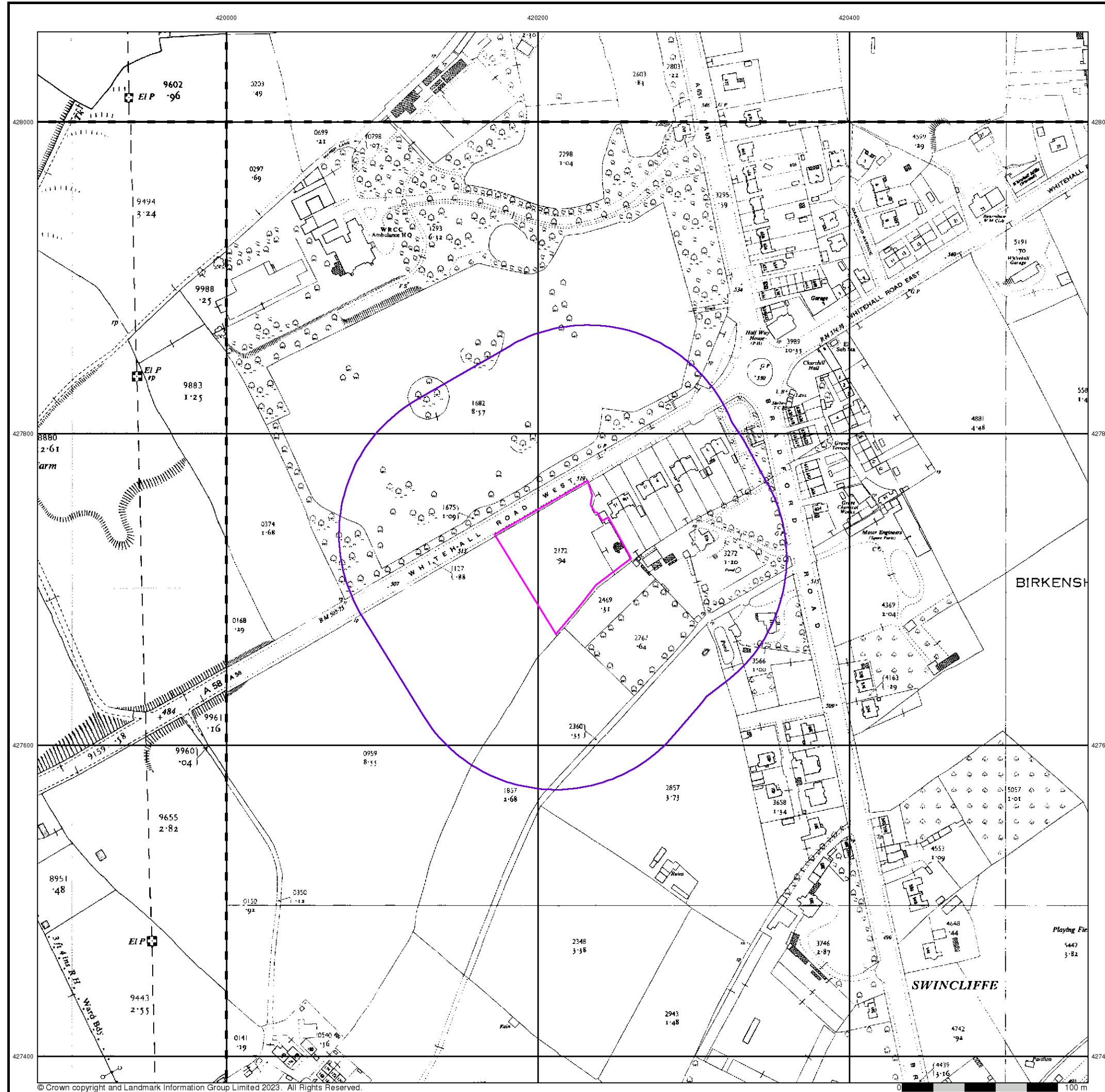


Order Details

Order Number: 313377718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



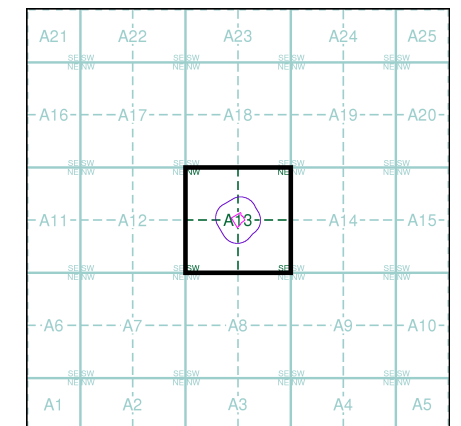
Ordnance Survey Plan
Published 1957
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SE 1928 1957 1:2,500	SE 2028 1957 1:2,500
SE 1927 1957 1:2,500	SE 2027 1957 1:2,500

Historical Map - Segment A13

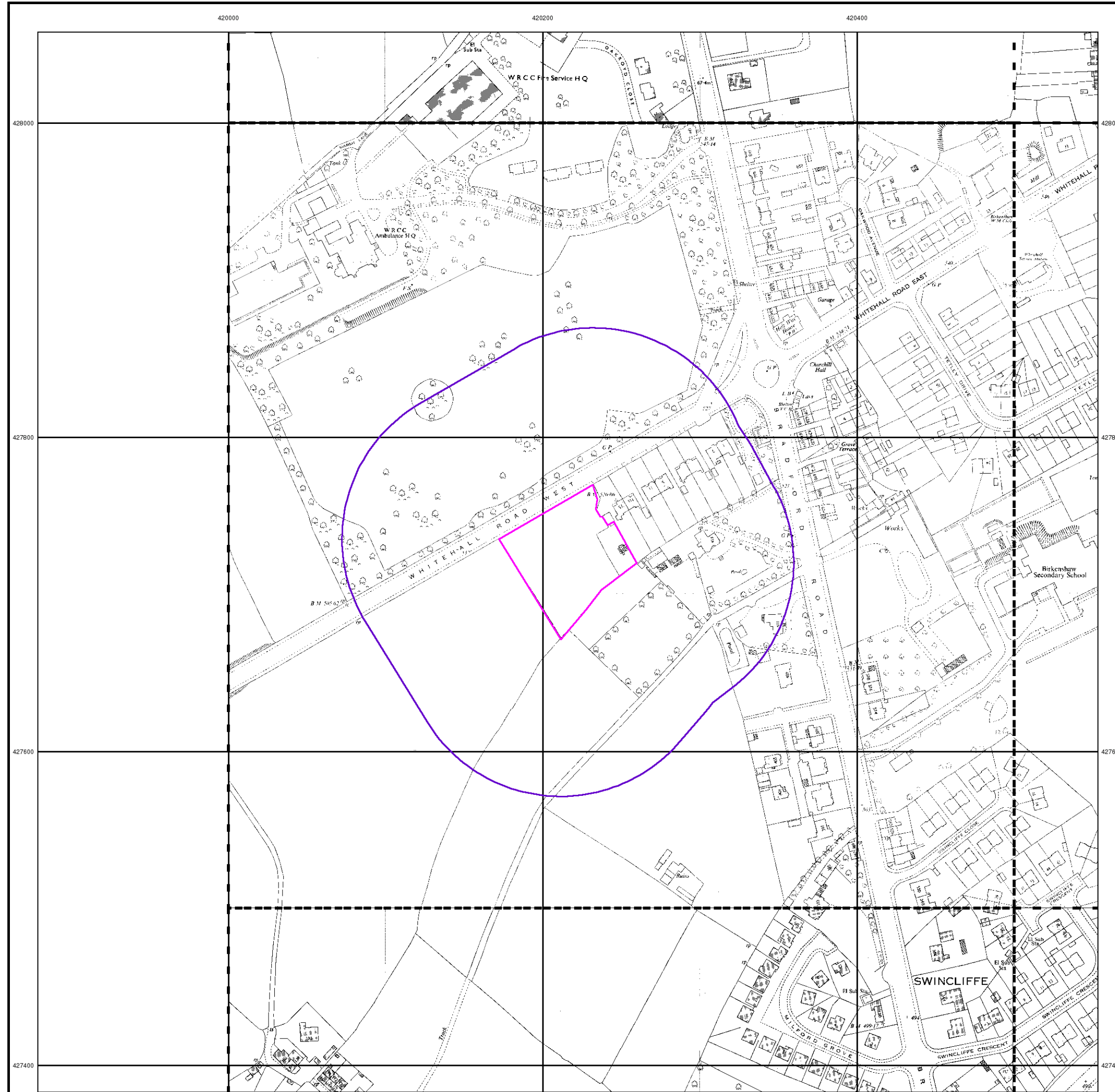


Order Details

Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



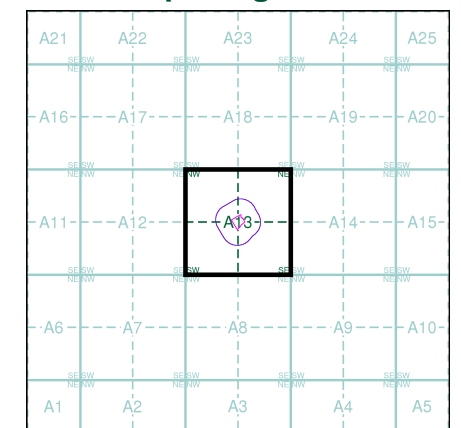
Ordnance Survey Plan
Published 1963 - 1971
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SE2028SW	SE2028SE
1971	1971
1:1,250	1:1,250
SE2027NW	SE2027NE
1963	1963
1:1,250	1:1,250
SE2027SW	SE2027SE
1967	1967
1:1,250	1:1,250

Historical Map - Segment A13



Order Details
Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees

420000

420200

420400



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Ordnance Survey Plan

Published 1969 - 1973

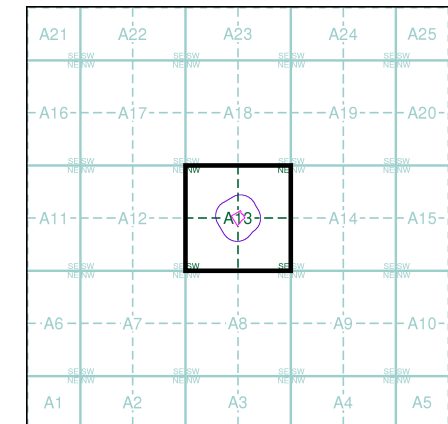
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SE2027NW 1971 1:1,250	SE2027NE 1969 1:1,250
SE2027SW 1973 1:1,250	SE2027SE 1973 1:1,250

Historical Map - Segment A13



Order Details

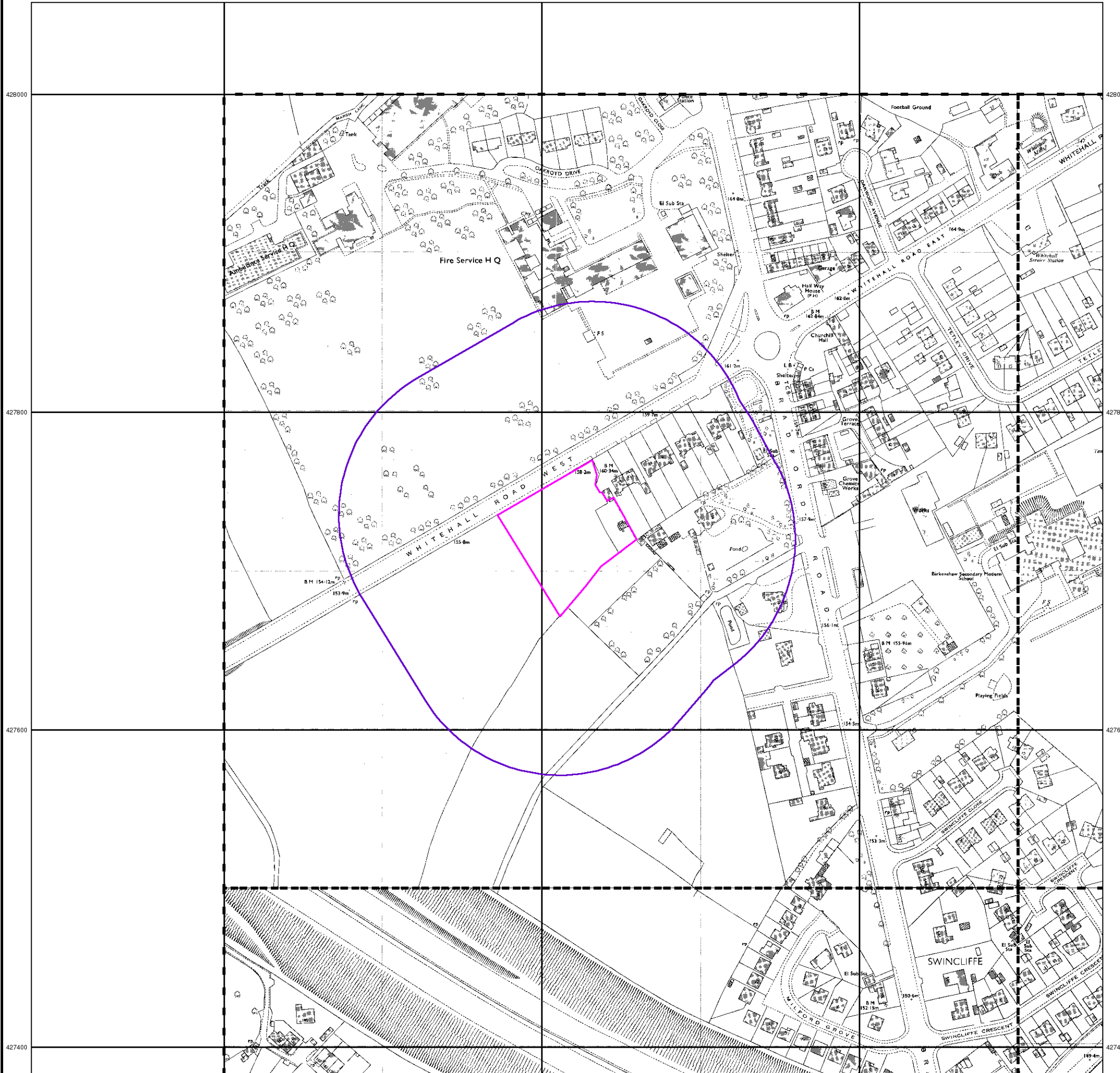
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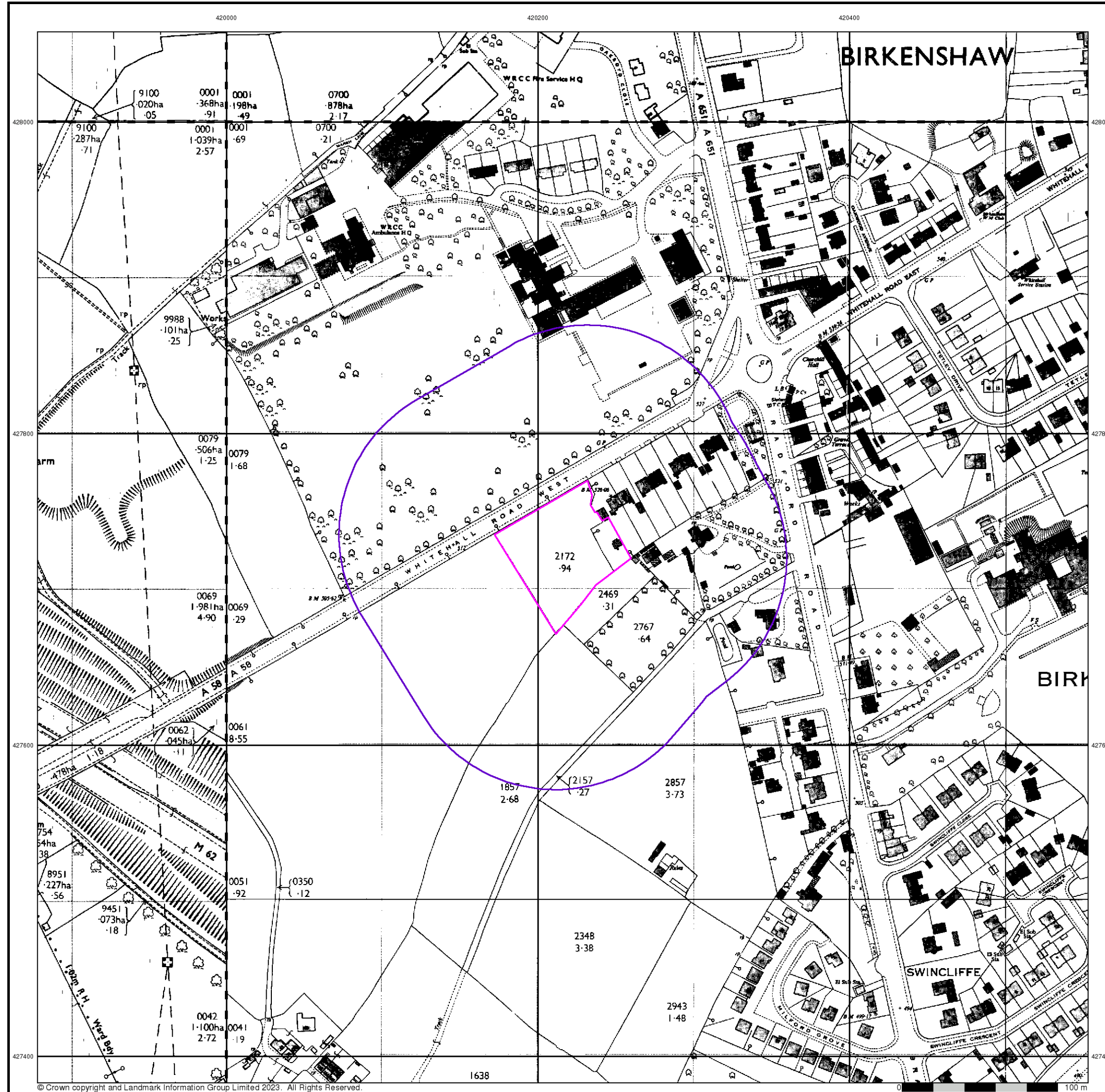
Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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





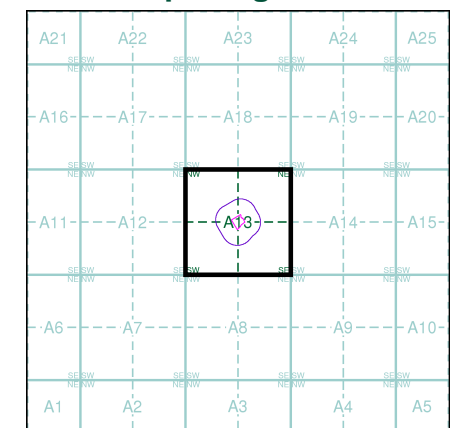
Ordnance Survey Plan
Published 1970 - 1977
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SE 1928 1977 1:2,500	SE 2028 1973 1:2,500
SE 1927 1974 1:2,500	SE 2027 1970 1:2,500

Historical Map - Segment A13

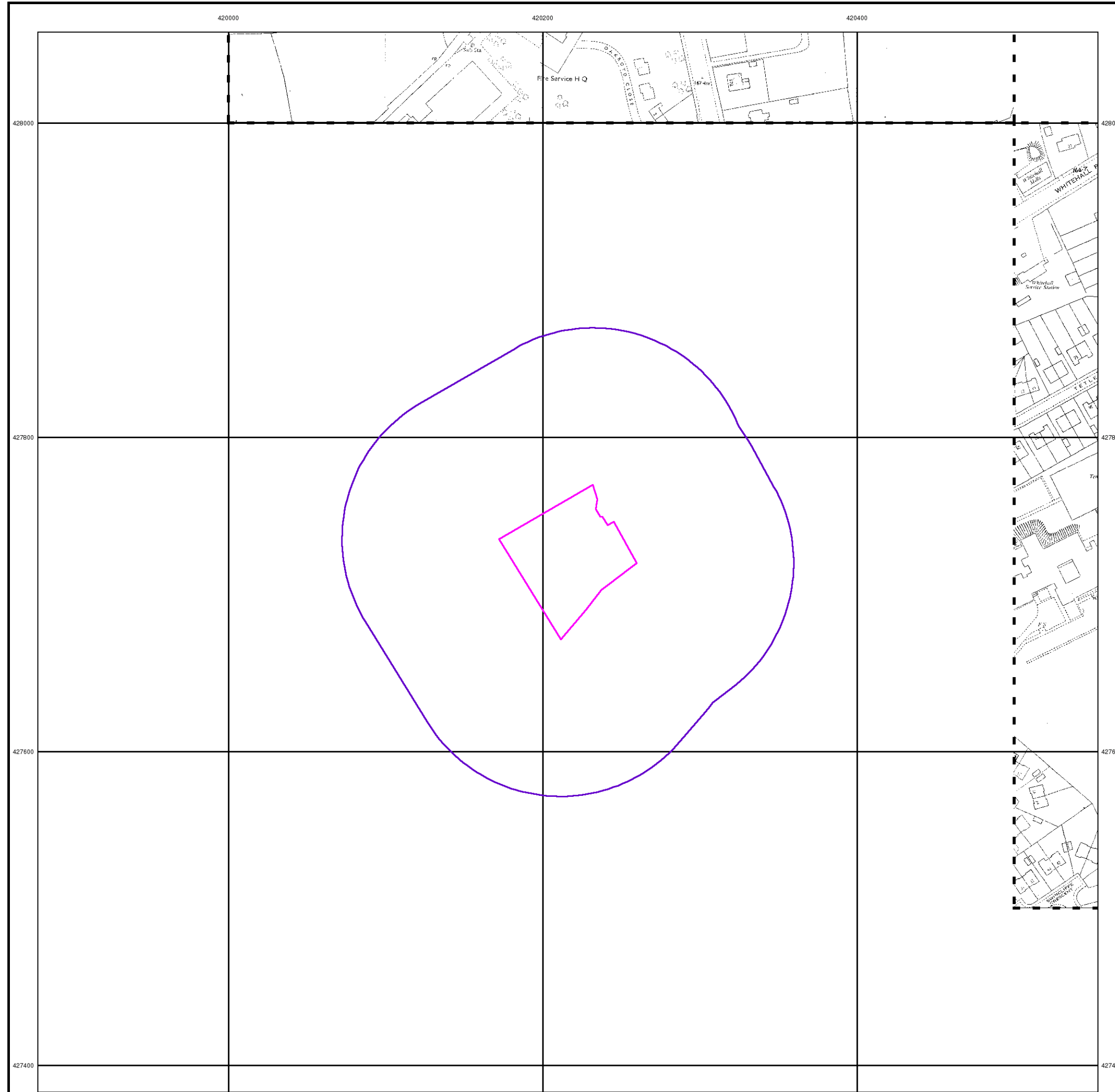


Order Details

Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details

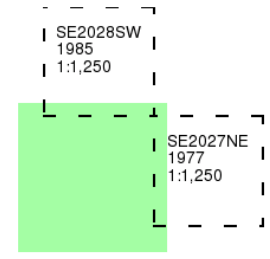
Site at, Whitehall Road West, Birkenshaw, Kirklees



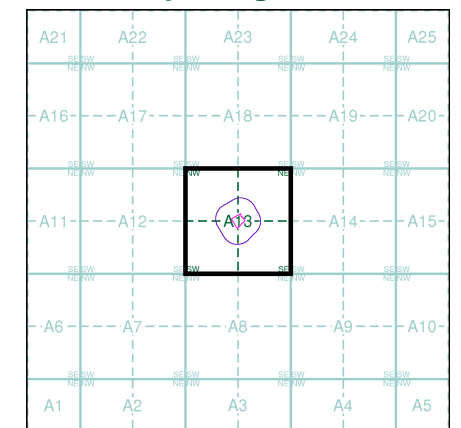
Additional SIMs
Published 1977 - 1985
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details
Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees

Ordnance Survey Plan

Published 1986 - 1989

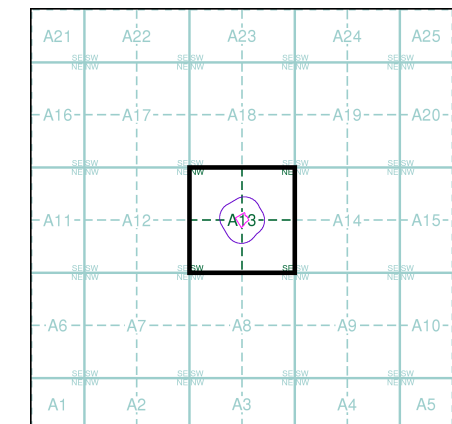
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

	SE2027NE 1989 1:1,250
	SE2027SE 1986 1:1,250

Historical Map - Segment A13

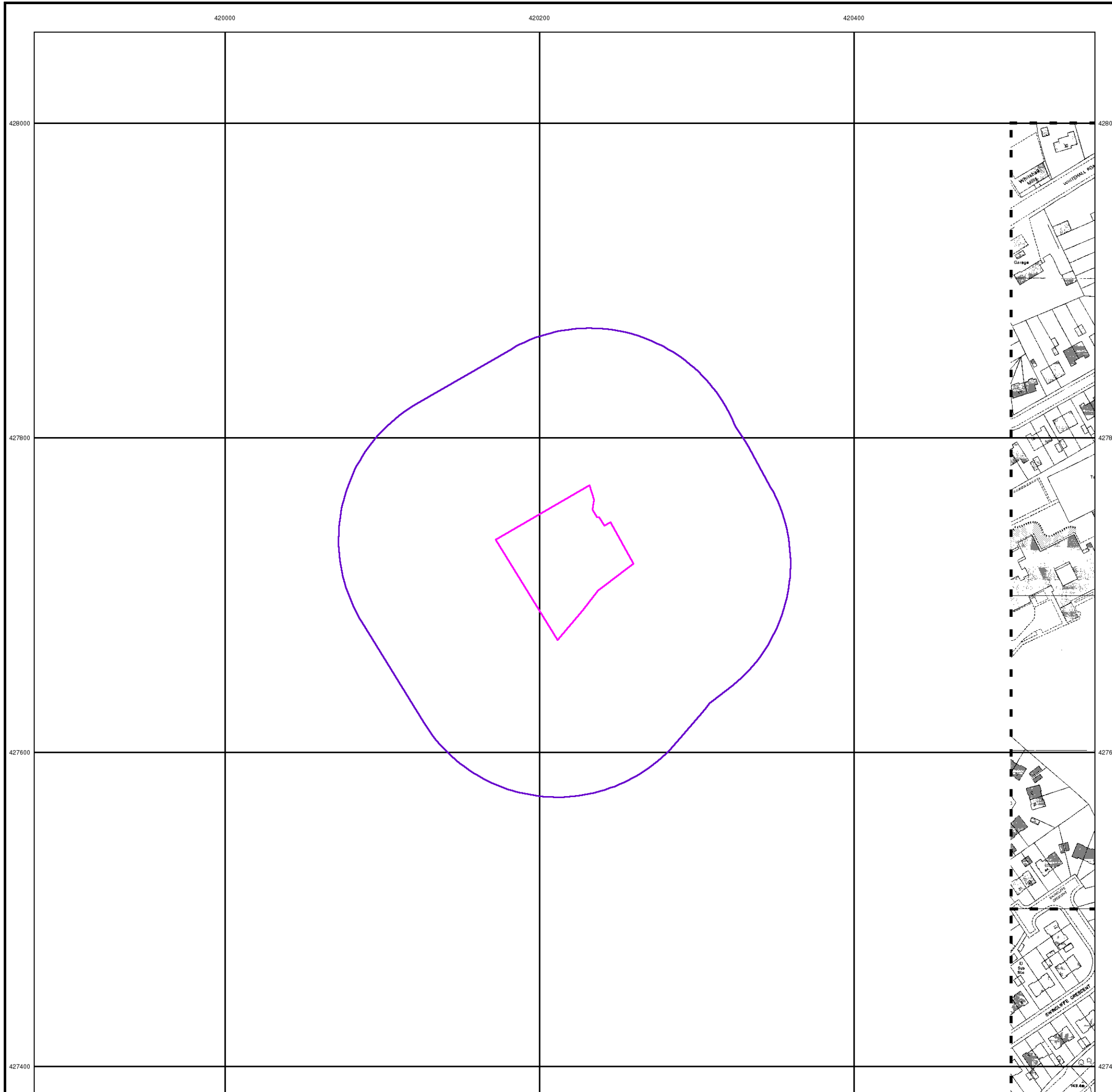


Order Details

Order Number: 313377718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



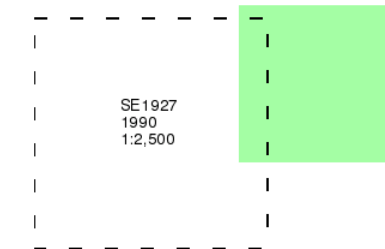
Additional SIMs

Published 1990

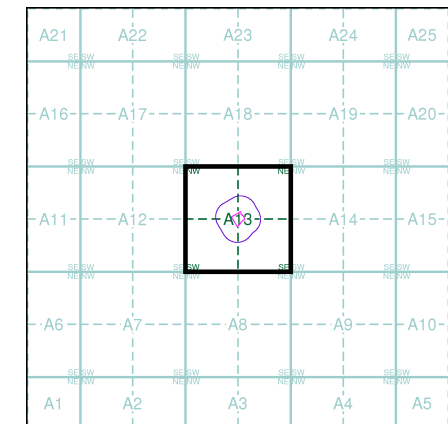
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

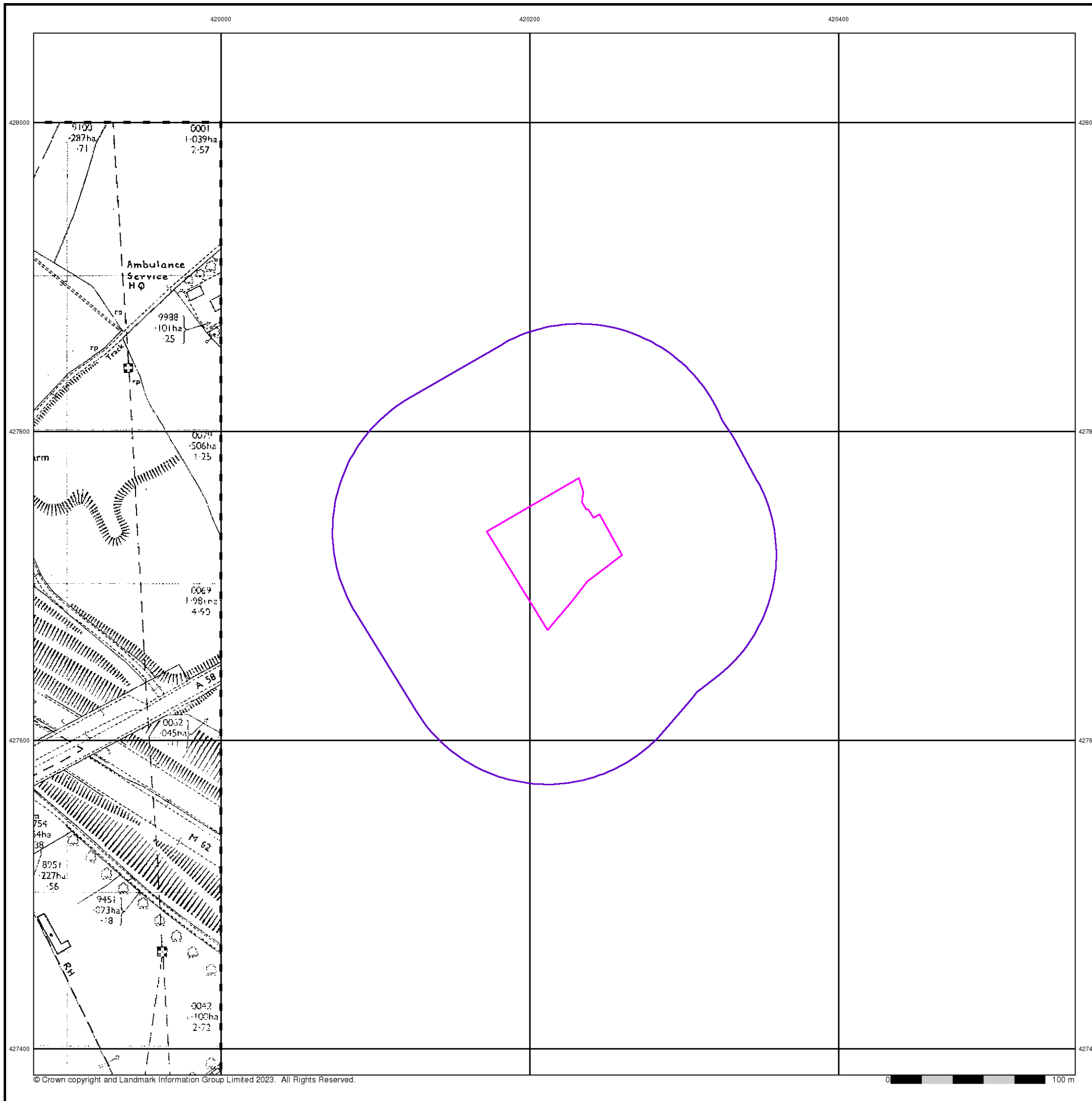


Order Details

Order Number: 313377718_1_1
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Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



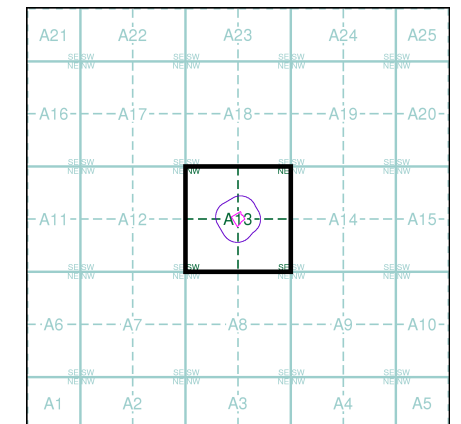
Large-Scale National Grid Data
Published 1992
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

SE 1928	1992	1:2,500
SE 1927	1992	1:2,500

Historical Map - Segment A13

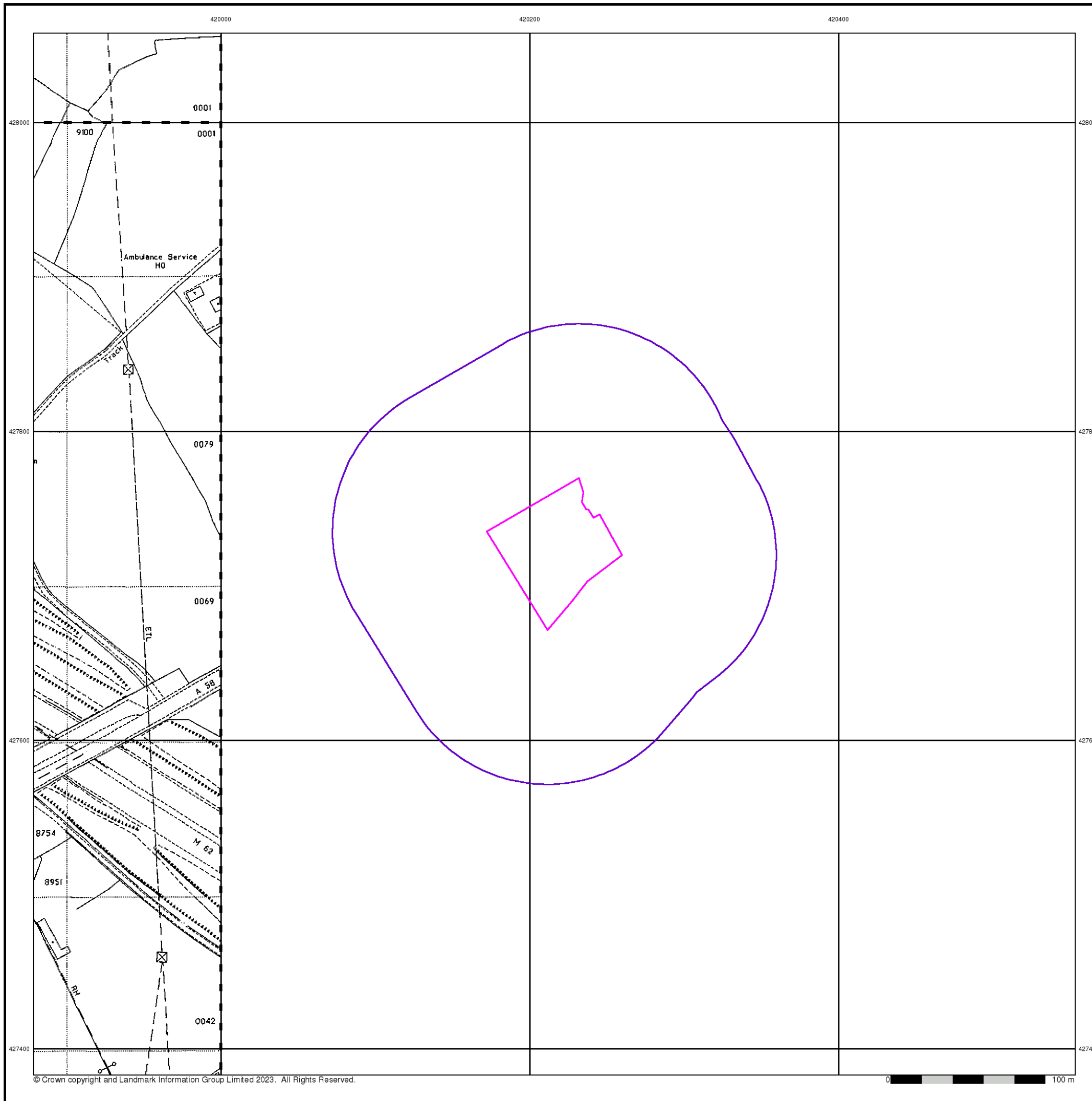


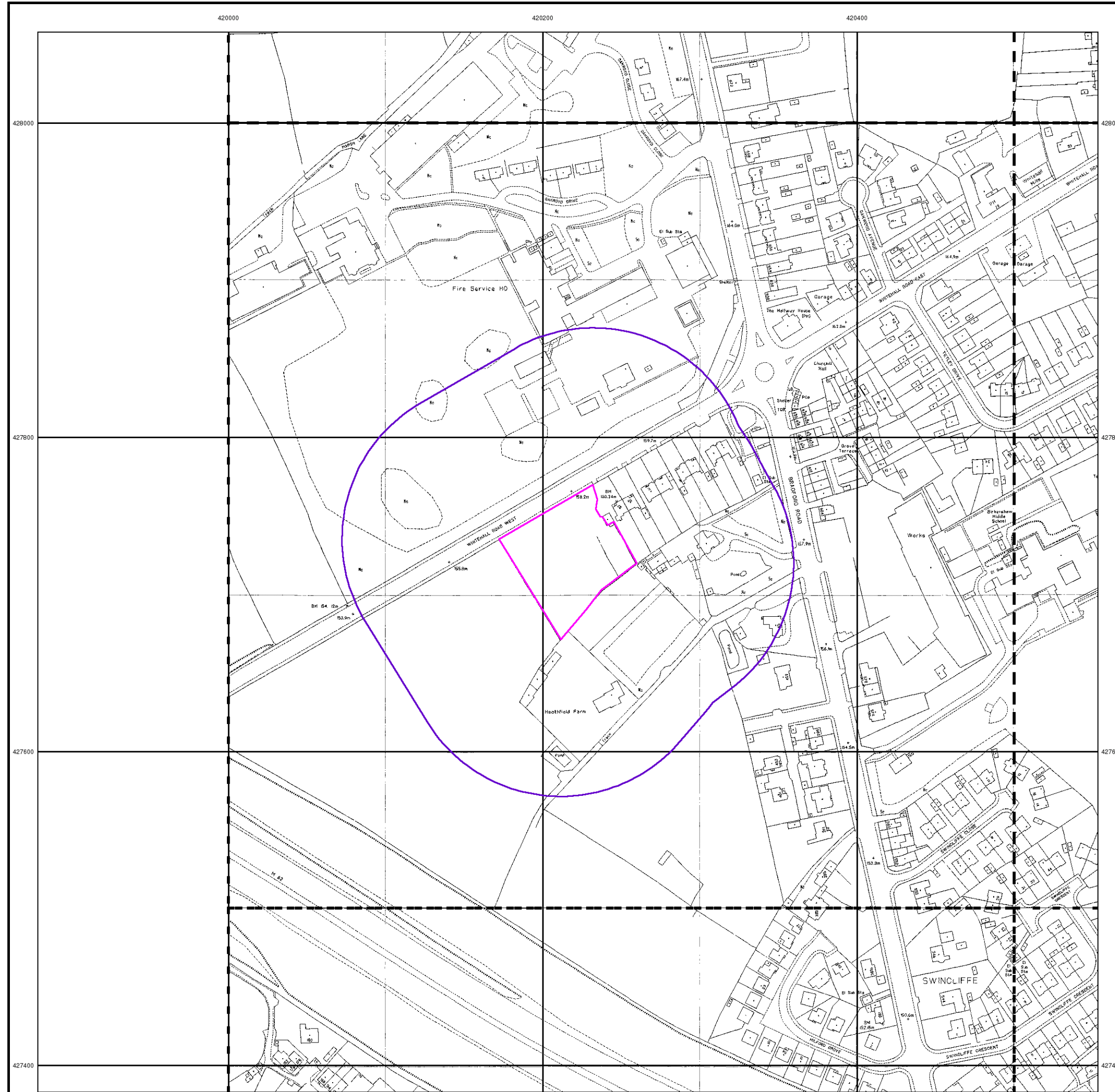
Order Details

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National Grid Reference: 420220, 427720
Slice: A
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Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees





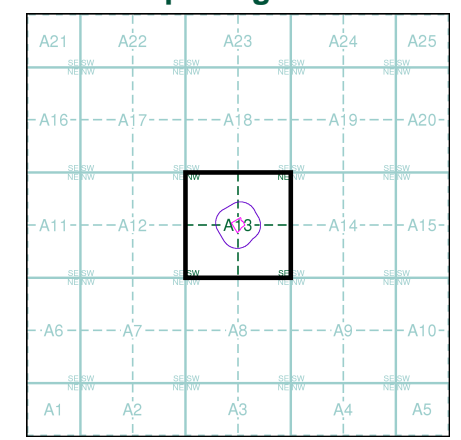
Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

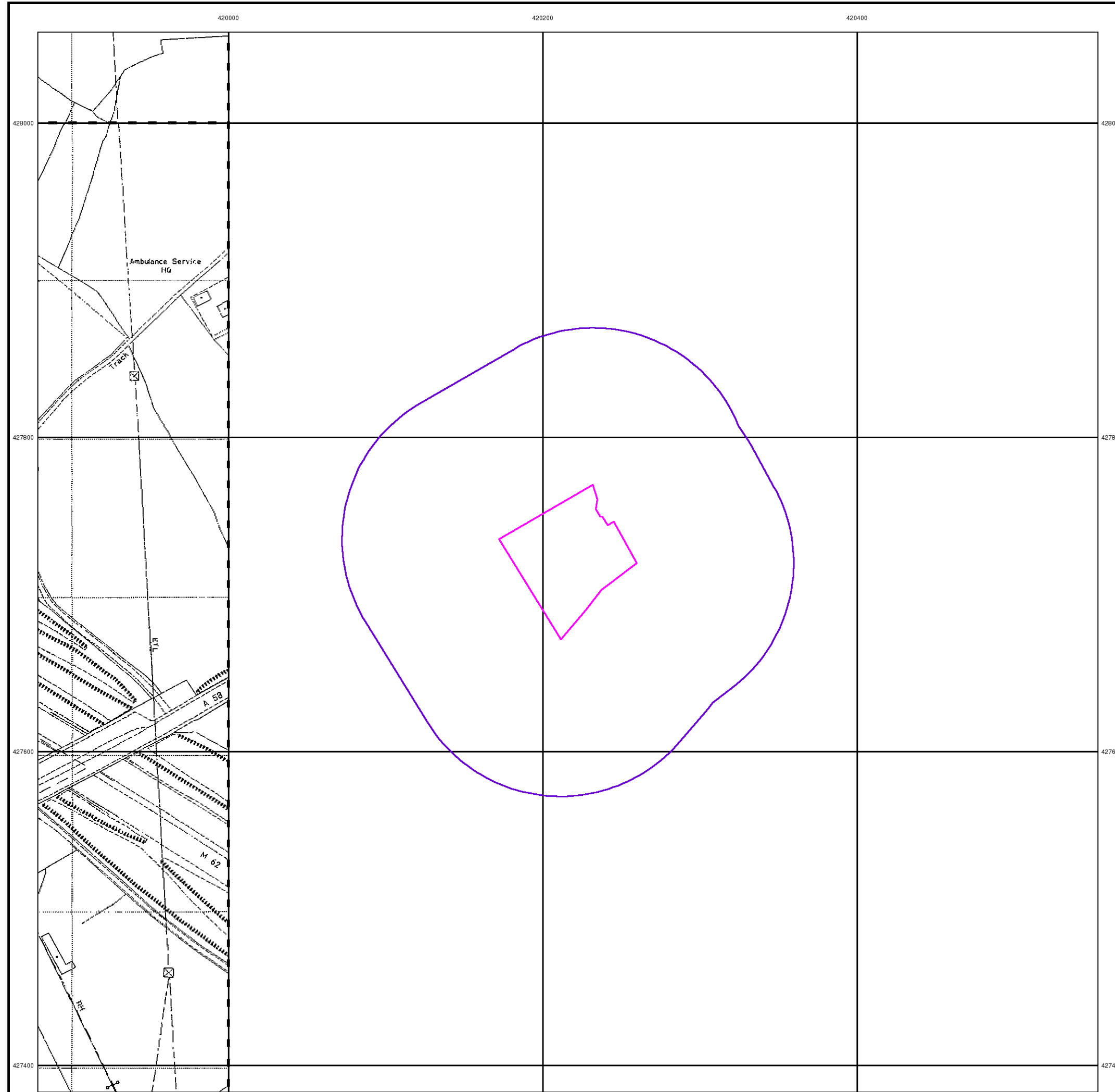
SE2028SW	SE2028SE
1993	1993
1:1,250	1:1,250
SE2027NW	SE2027NE
1993	1993
1:1,250	1:1,250
SE2027SW	SE2027SE
1993	1993
1:1,250	1:1,250

Historical Map - Segment A13



Order Details
Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 100

Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees



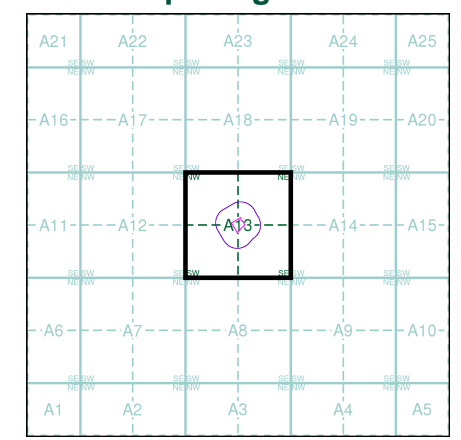
Large-Scale National Grid Data
Published 1996
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

SE 1928	1996	1:2,500
SE 1927	1996	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 313377718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 100

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Heath
	Rough Grassland		Marsh
	Reeds		Saltings
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

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

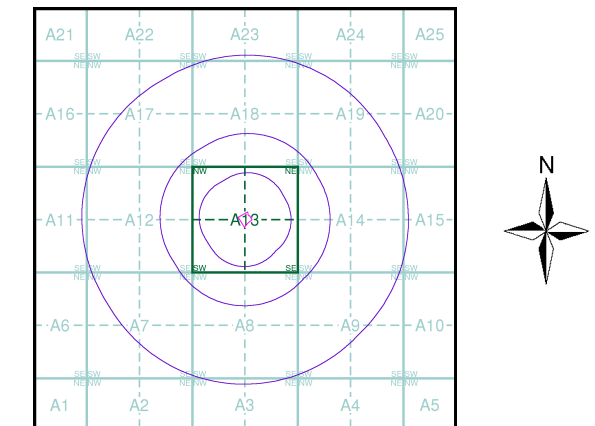


ARP GEOTECHNICAL LTD

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1852 - 1854	2
Yorkshire	1:10,560	1894	3
Yorkshire	1:10,560	1908	4
Yorkshire	1:10,560	1932	5
Yorkshire	1:10,560	1938	6
Yorkshire	1:10,560	1948	7
Ordnance Survey Plan	1:10,000	1955	8
Ordnance Survey Plan	1:10,000	1966 - 1967	9
Ordnance Survey Plan	1:10,000	1976	10
Ordnance Survey Plan	1:10,000	1984 - 1986	11
Ordnance Survey Plan	1:10,000	1991 - 1995	12
10K Raster Mapping	1:10,000	2000	13
Street View	Variable		14

Historical Map - Slice A



Order Details

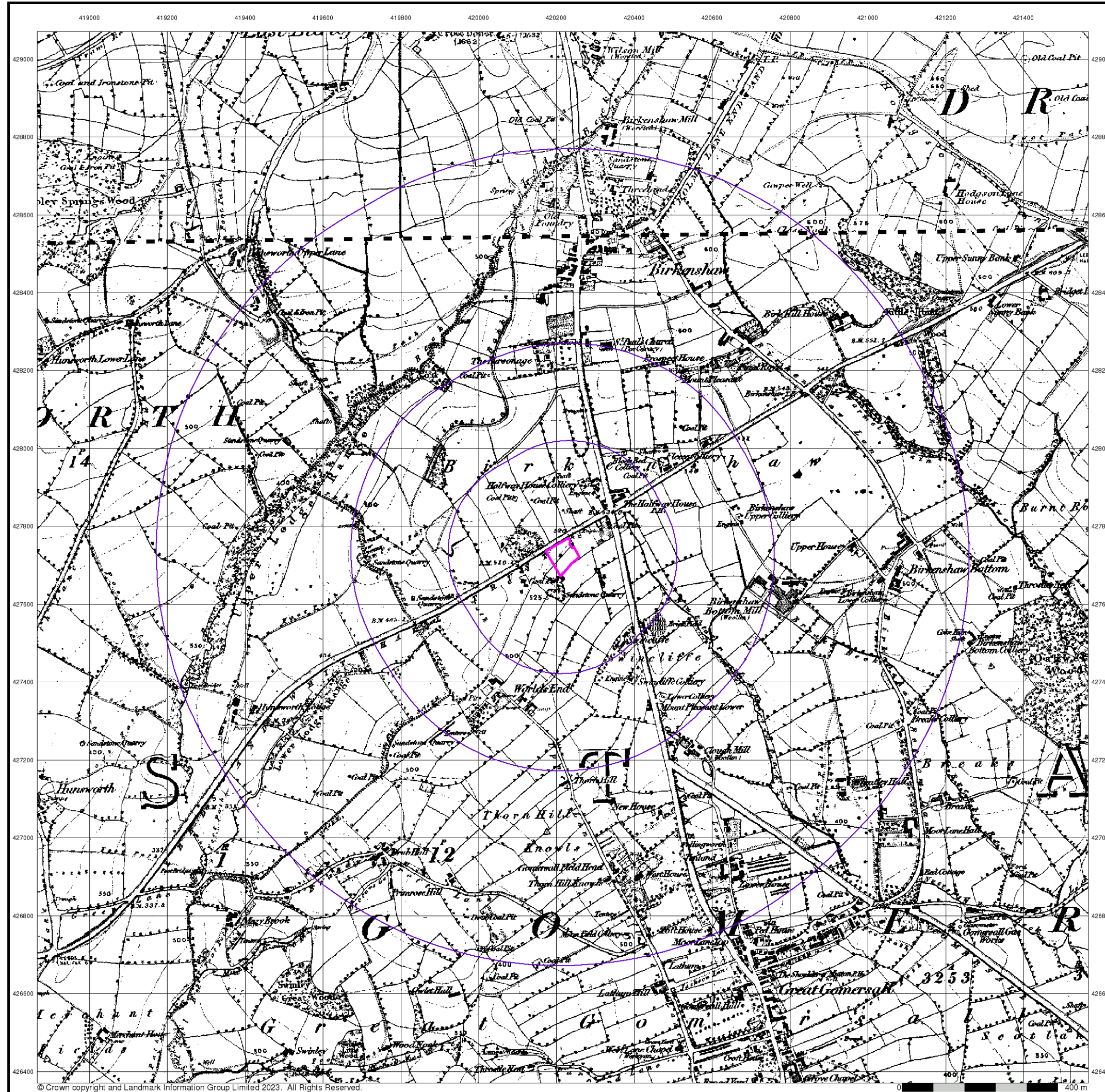
Order Number: 313377718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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



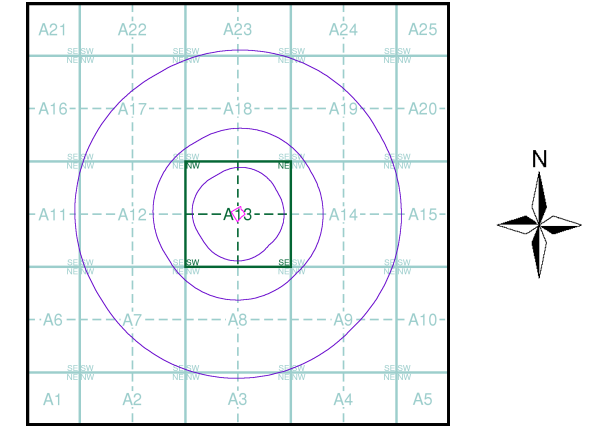
Yorkshire
Published 1852 - 1854
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

21700	1852	1:10,560
23200	1854	1:10,560

Historical Map - Slice A

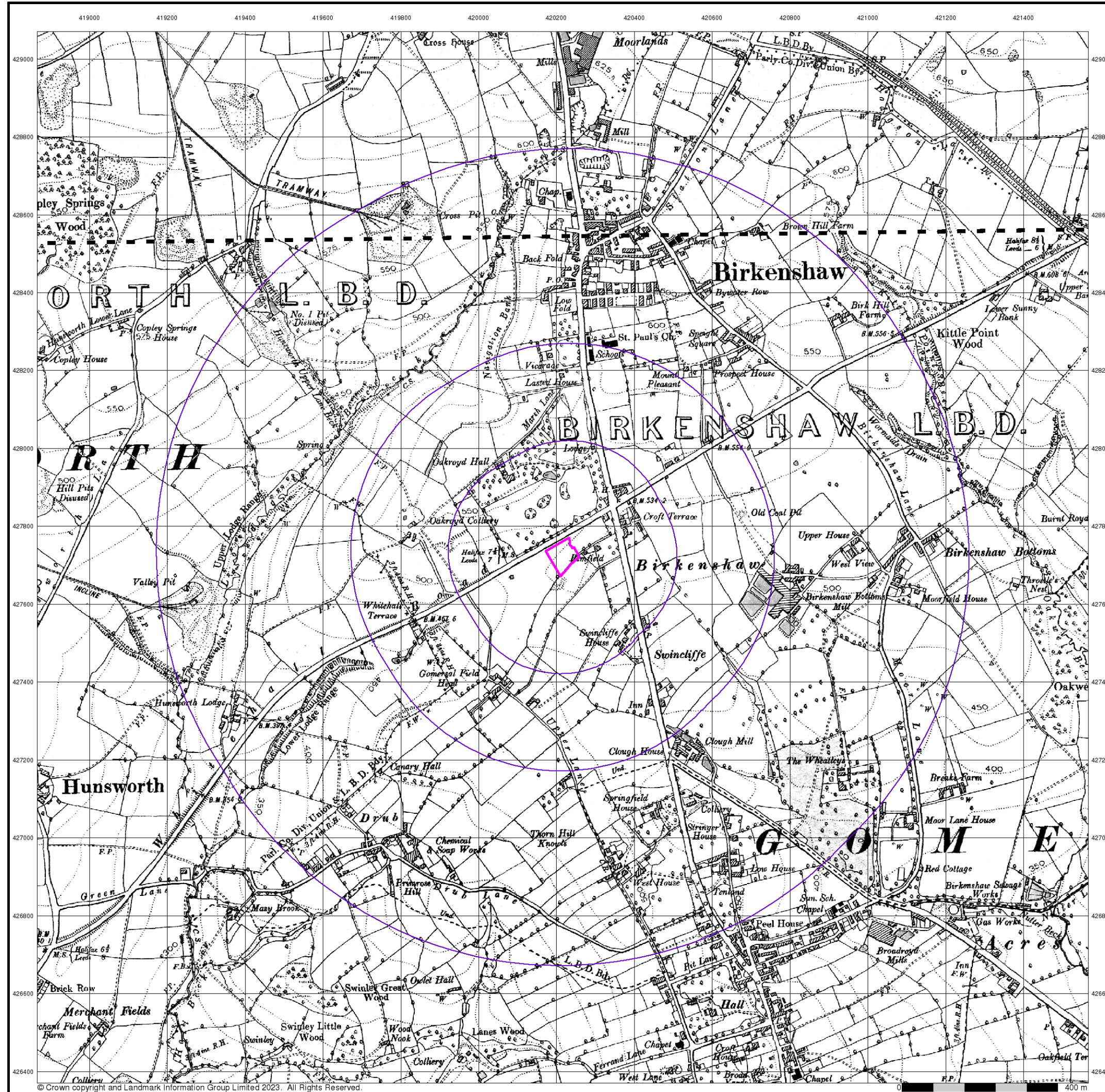


Order Details

Order Number: 313377718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
Slice: A
Site Area (Ha): 0.43
Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



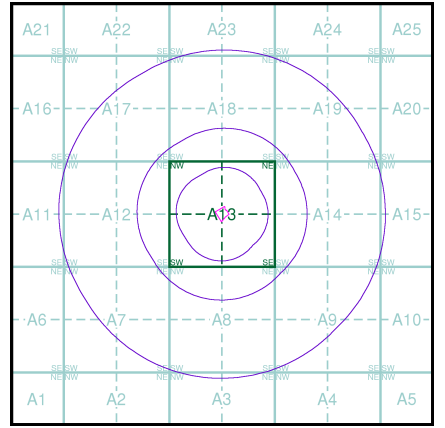
Yorkshire
Published 1894
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

217SW	1894	1:10,560
232NW	1894	1:10,560

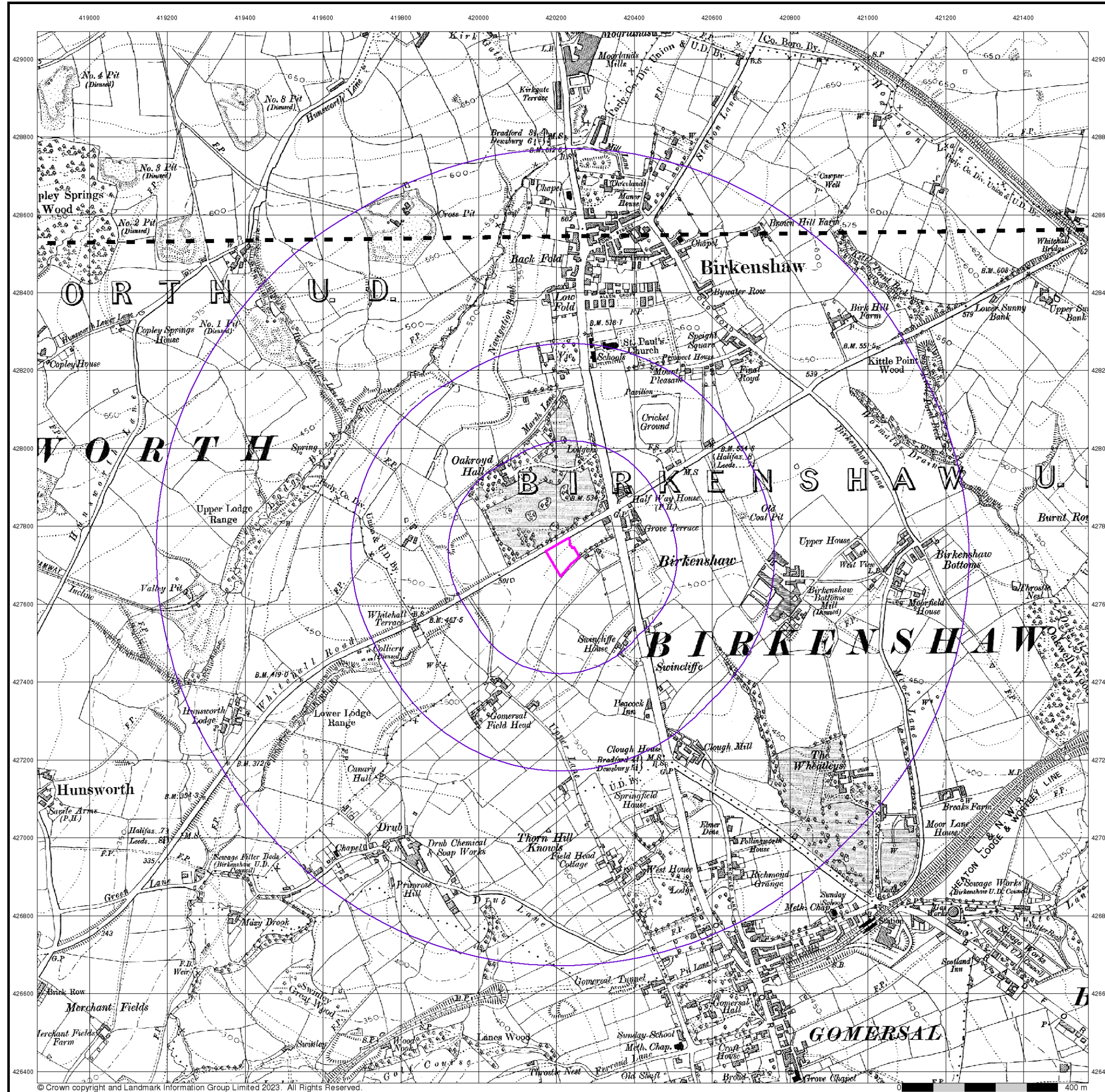
Historical Map - Slice A



Order Details

Order Number:	313377718_1_1
Customer Ref:	ORH/20
National Grid Reference:	420220, 427720
Slice:	A
Site Area (Ha):	0.43
Search Buffer (m):	1000

Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees



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ARP GEOTECHNICAL LTD

Yorkshire

Published 1908

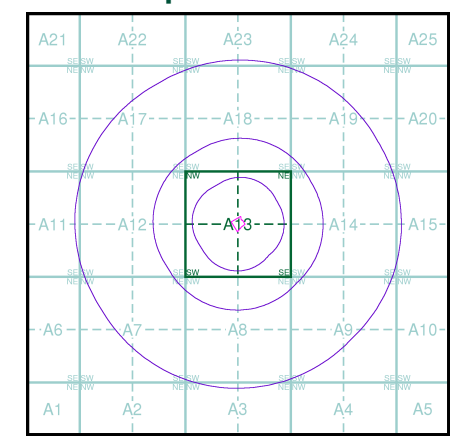
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

217SW	1908	1:10,560
232NW	1908	1:10,560

Historical Map - Slice A



Order Details

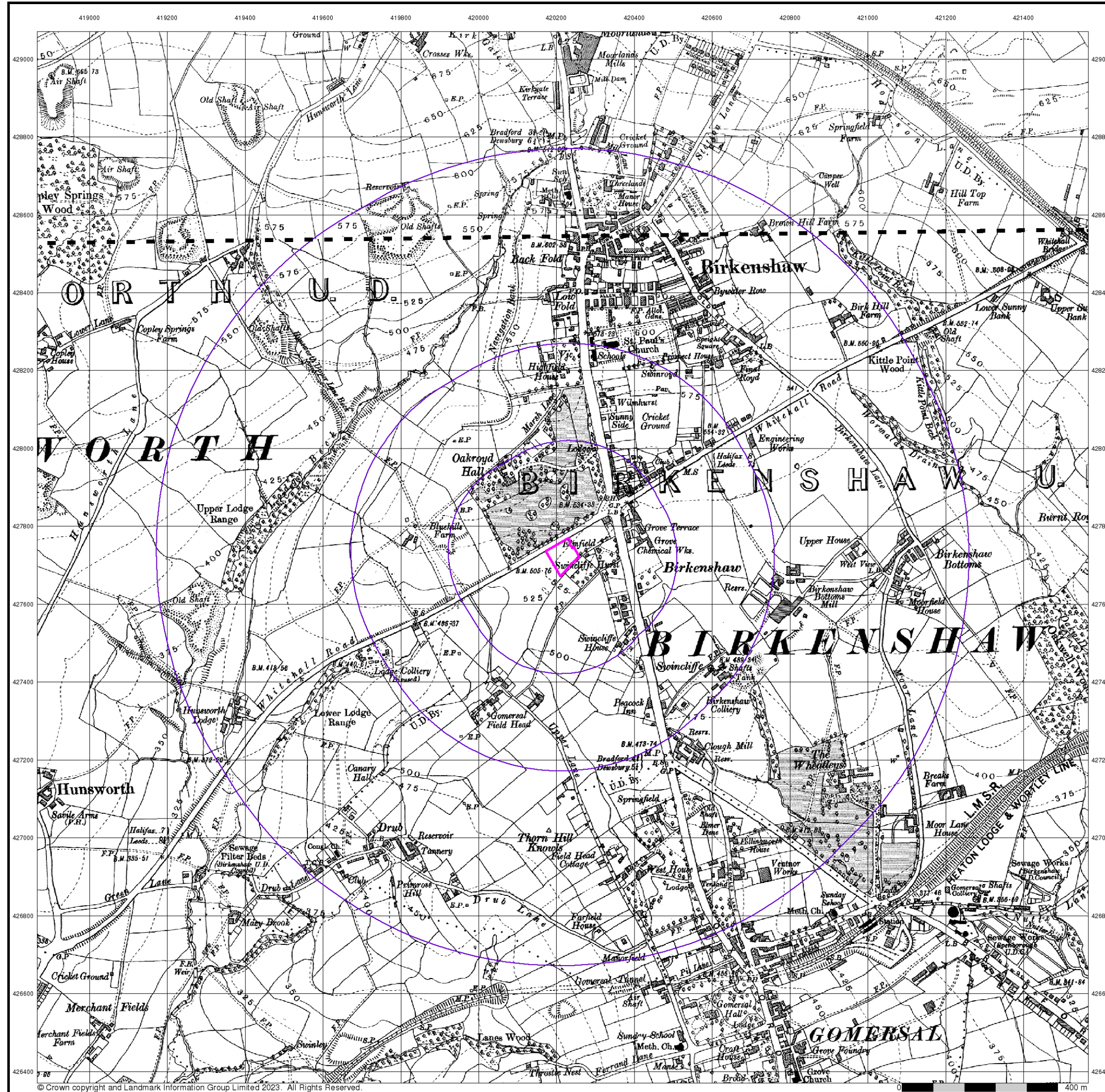
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Customer Ref:	ORH/20
National Grid Reference:	420220, 427720
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Site Area (Ha):	0.43
Search Buffer (m):	1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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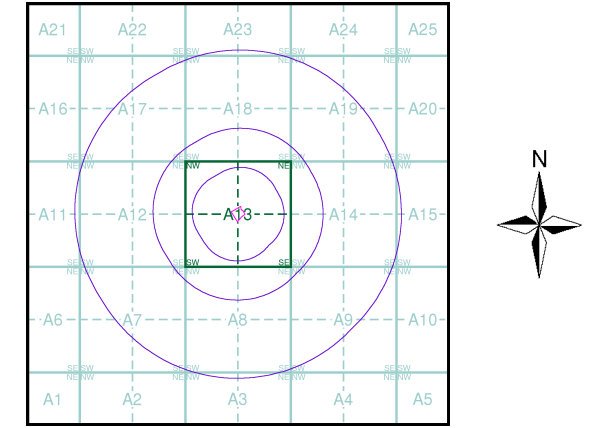
Yorkshire
Published 1932
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

217SW	1932	1:10,560
232NW	1932	1:10,560

Historical Map - Slice A



Order Details

Order Number: 31337718_1_1
Customer Ref: ORH/20
National Grid Reference: 420220, 427720
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Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



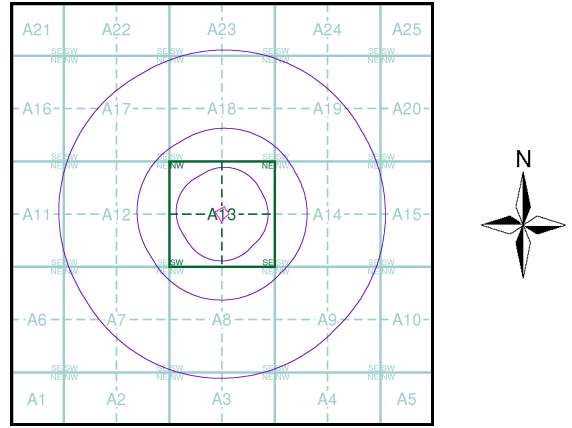
Yorkshire
Published 1938
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

217SW	1938	1:10,560
232NW	1938	1:10,560

Historical Map - Slice A

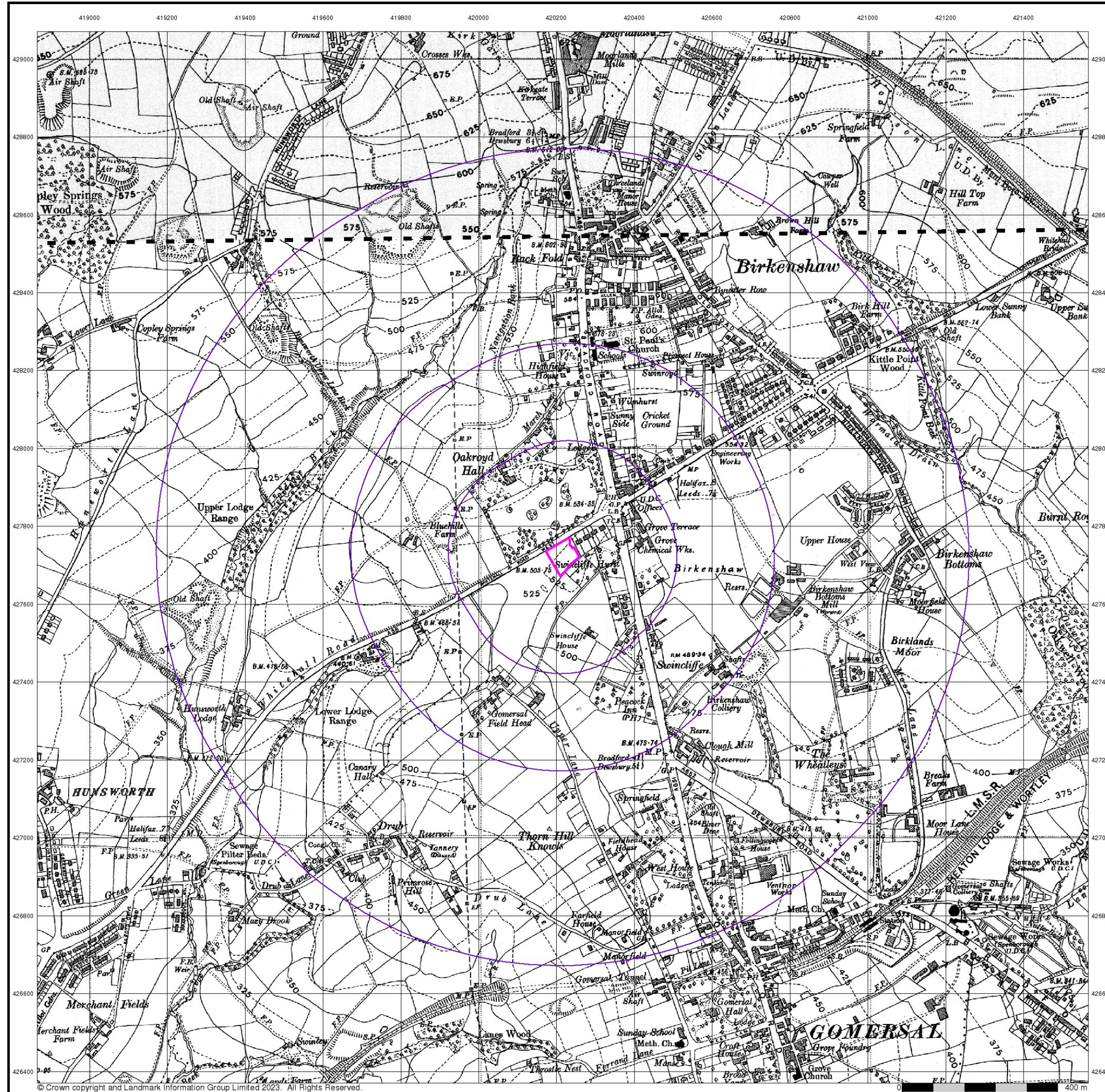


Order Details

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Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



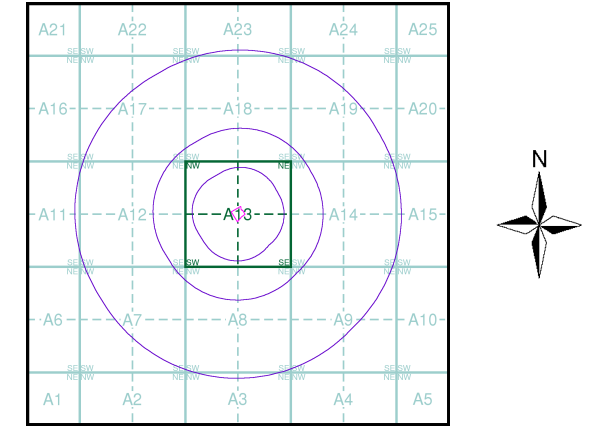
Yorkshire
Published 1948
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

217SW	1948	1:10,560
232NW	1948	1:10,560

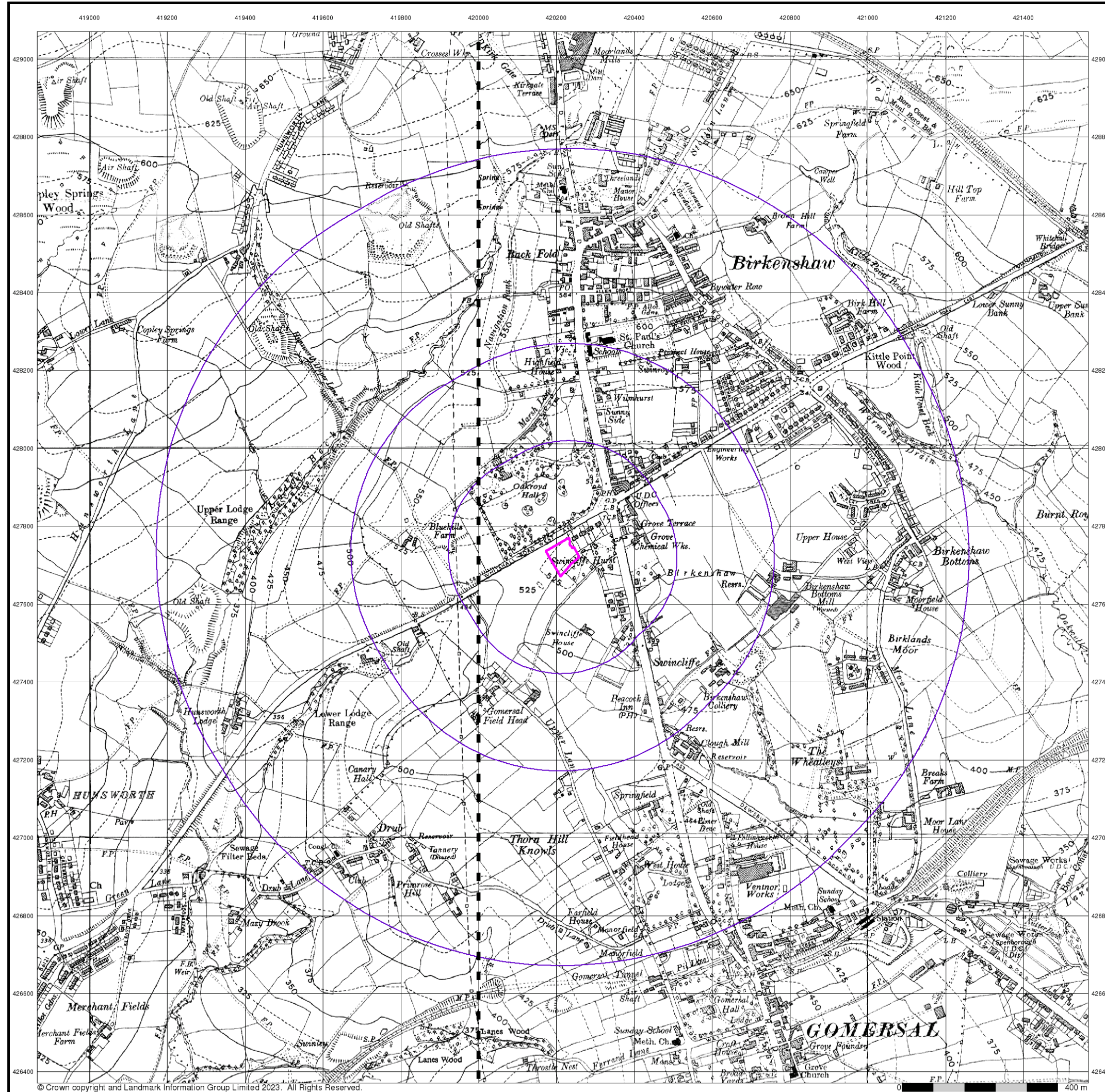
Historical Map - Slice A



Order Details

Order Number:	313377718_1_1
Customer Ref:	ORH/20
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Site Details
Site at, Whitehall Road West, Birkenshaw, Kirklees

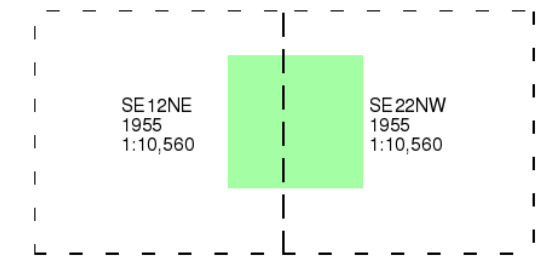


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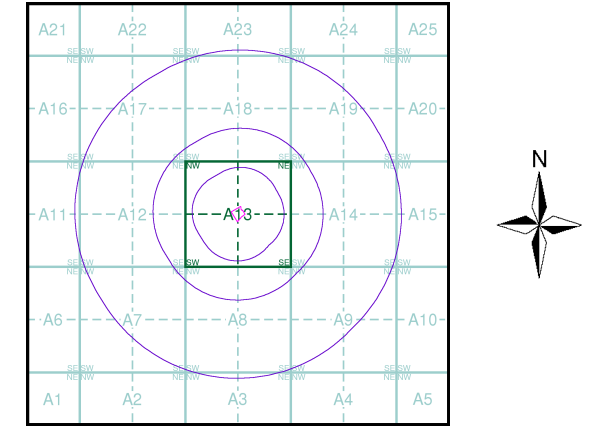
Ordnance Survey Plan
Published 1955
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

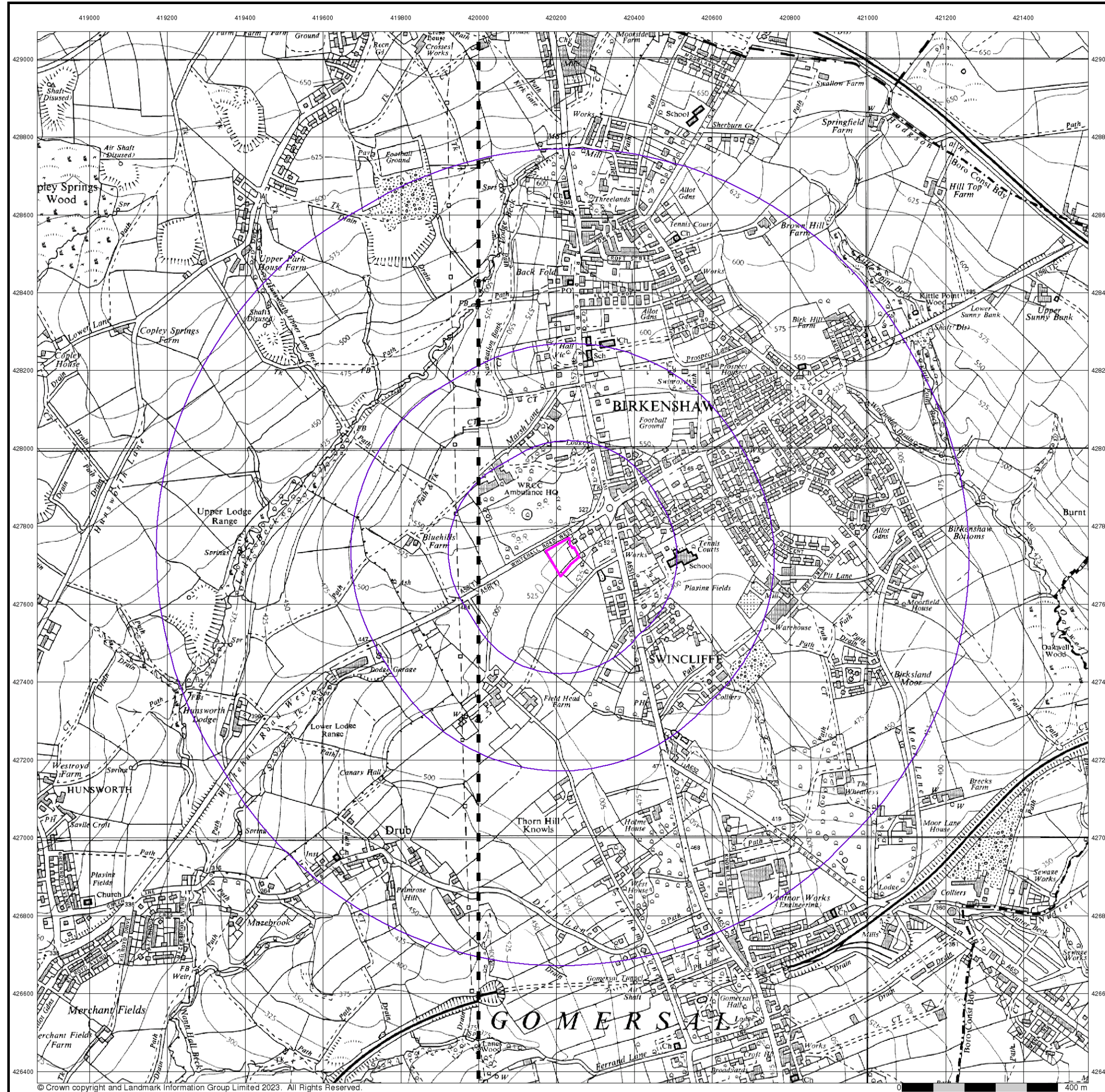


Historical Map - Slice A



Order Details
Order Number: 313377718_1_1
Customer Ref: ORH/20
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Search Buffer (m): 1000

Site Details
Site at, Whitehall Road West, Birkenshaw, Kirkstall



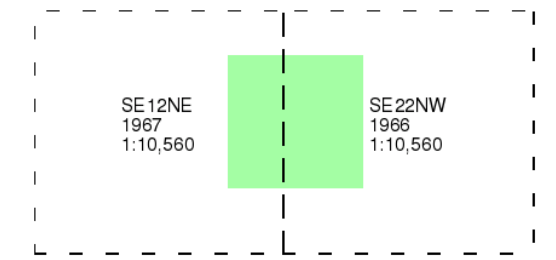
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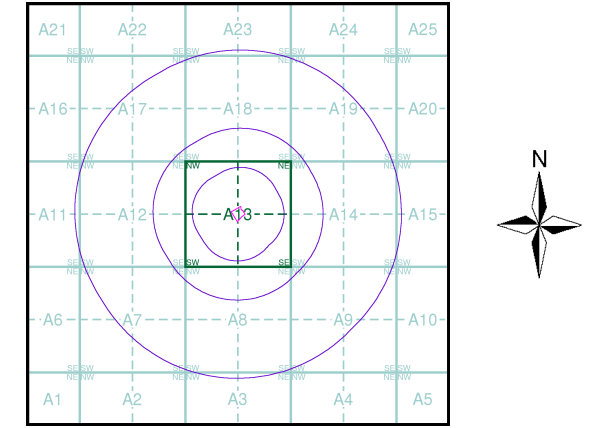
Ordnance Survey Plan
Published 1966 - 1967
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



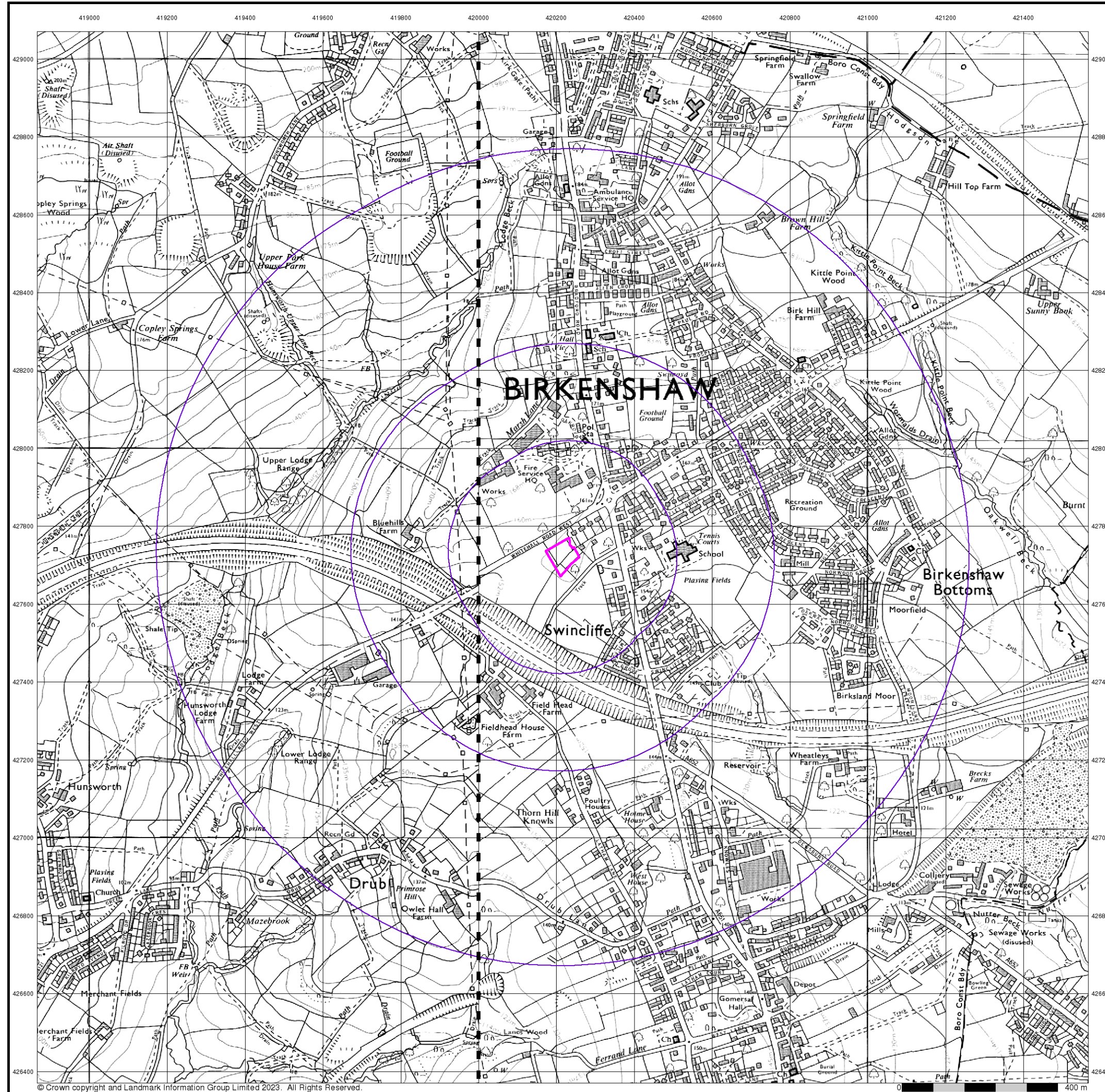
Historical Map - Slice A



Order Details
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Site Details
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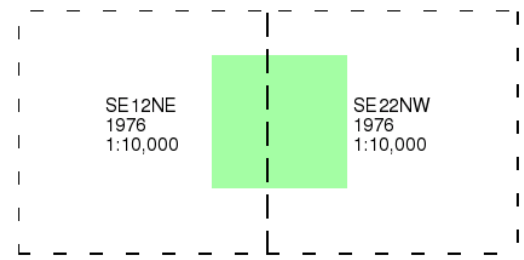
Ordnance Survey Plan

Published 1976

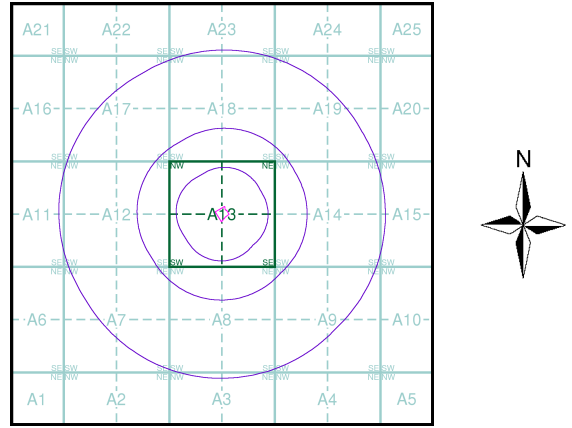
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

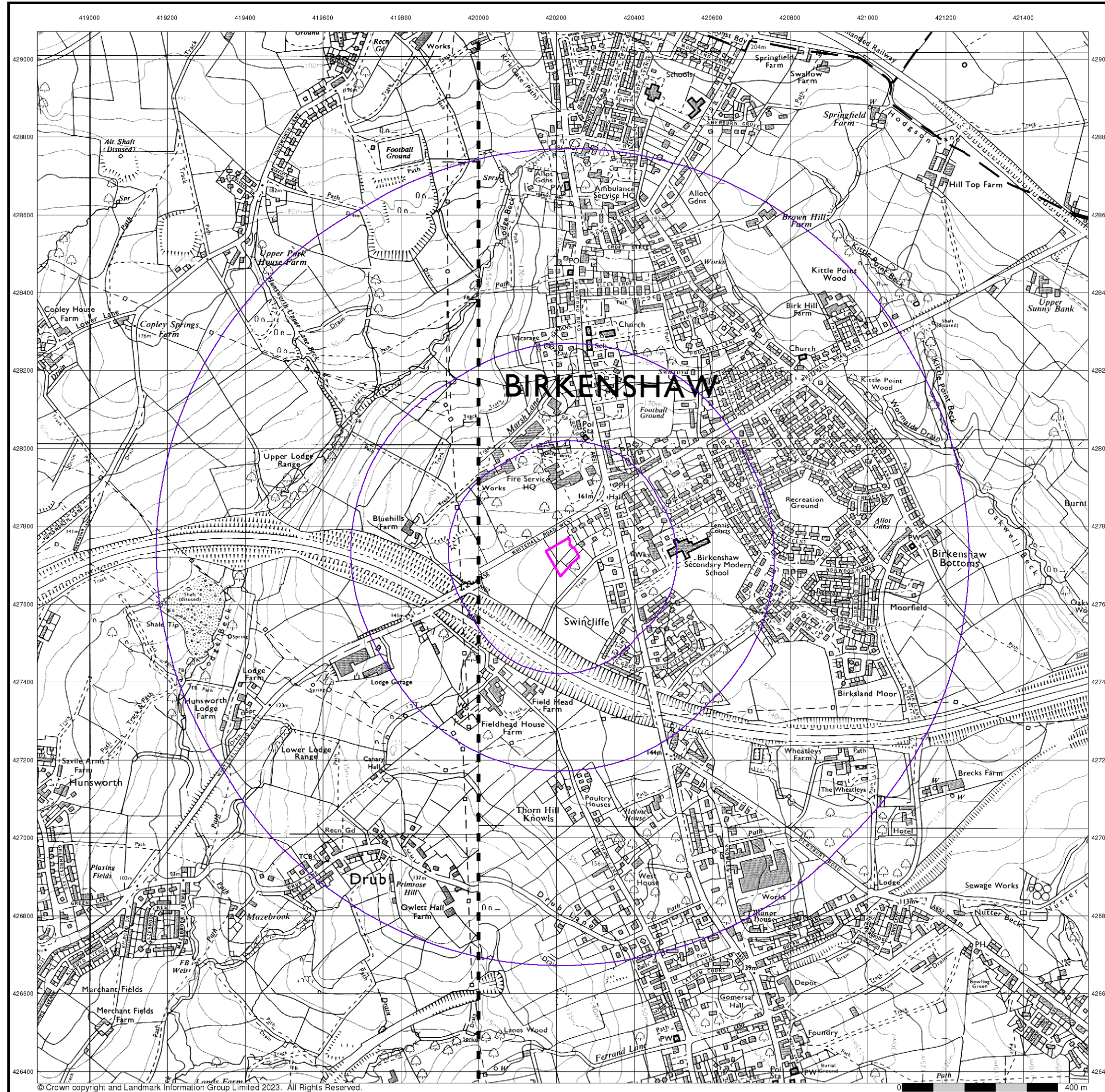
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 National Grid Reference: 420220, 427720
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Site Details

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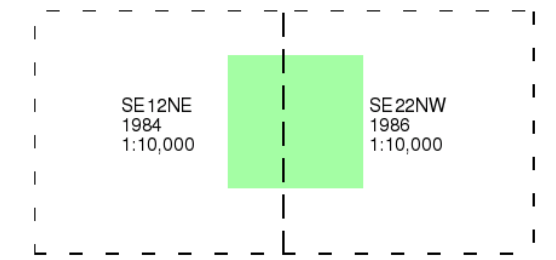
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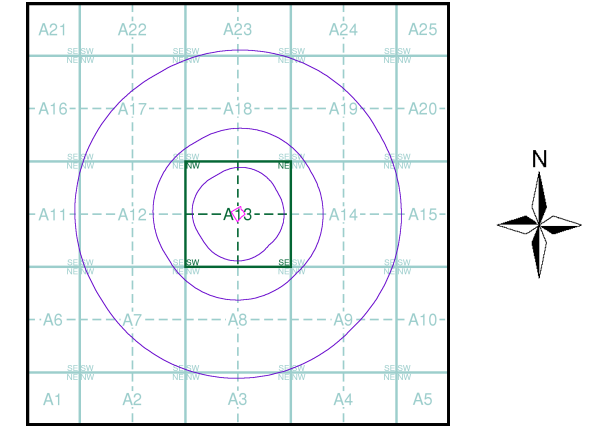
Ordnance Survey Plan
Published 1984 - 1986
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



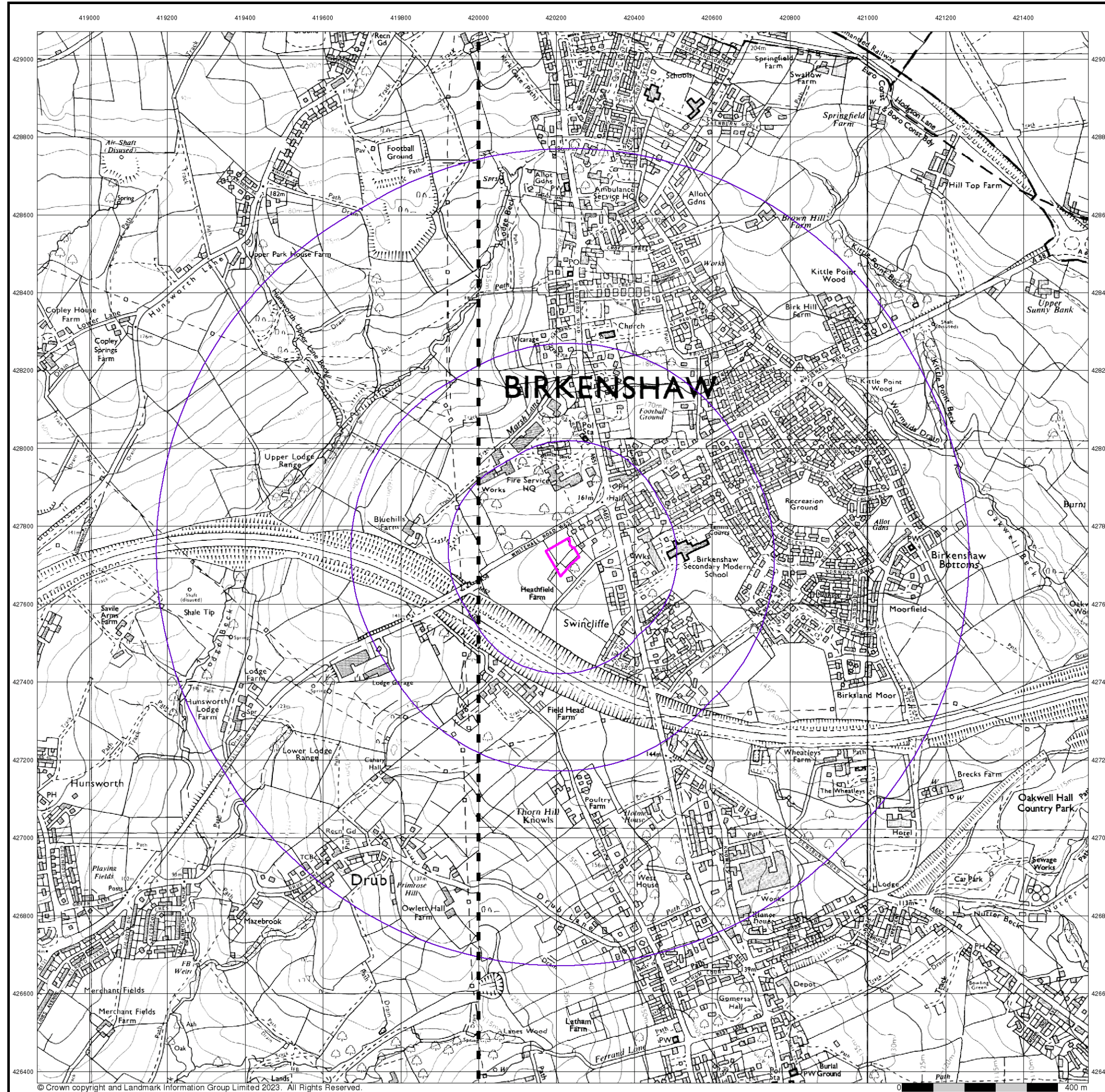
Historical Map - Slice A



Order Details
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Site Details
 Site at, Whitehall Road West, Birkenshaw, Kirklees

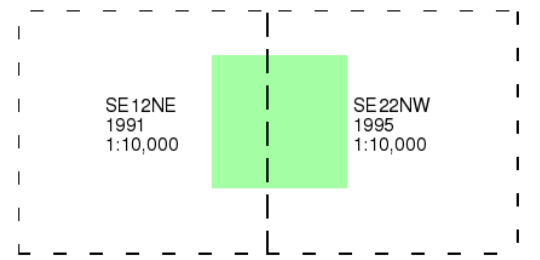




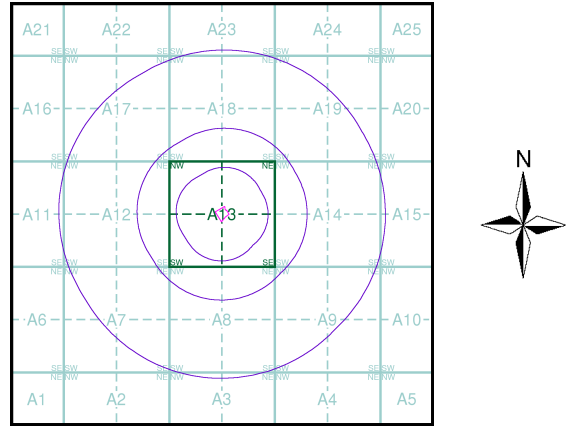
Ordnance Survey Plan
Published 1991 - 1995
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

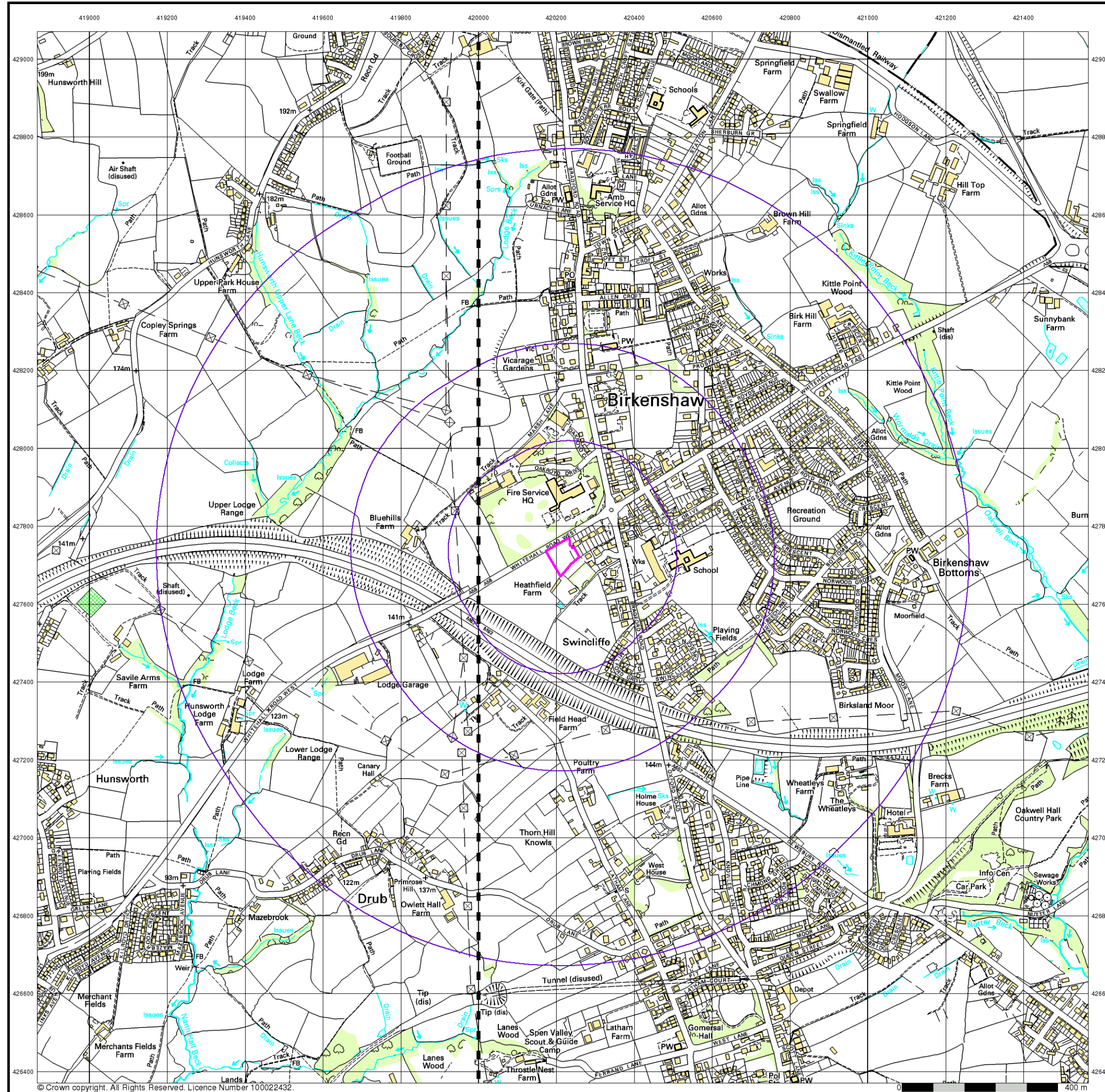


Historical Map - Slice A



Order Details
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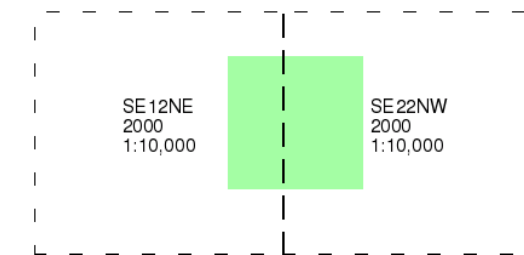
10k Raster Mapping

Published 2000

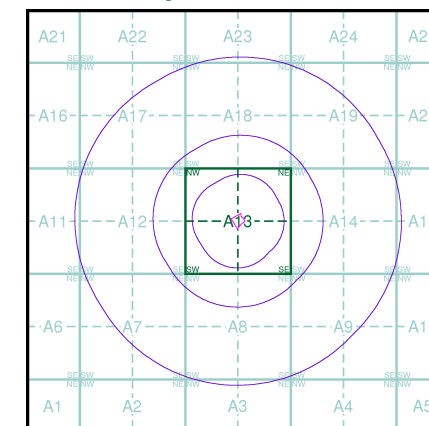
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

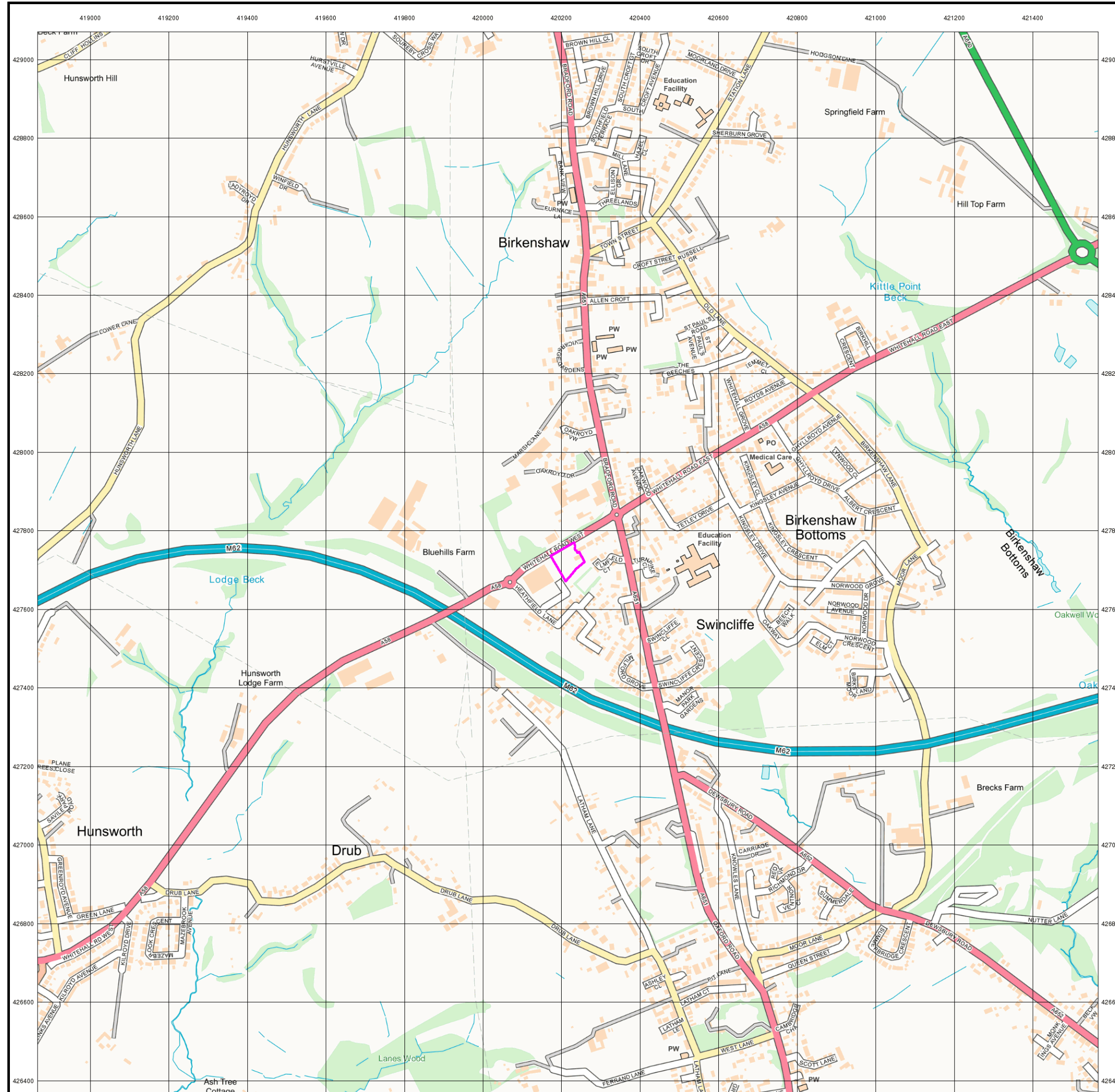
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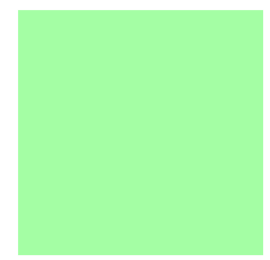
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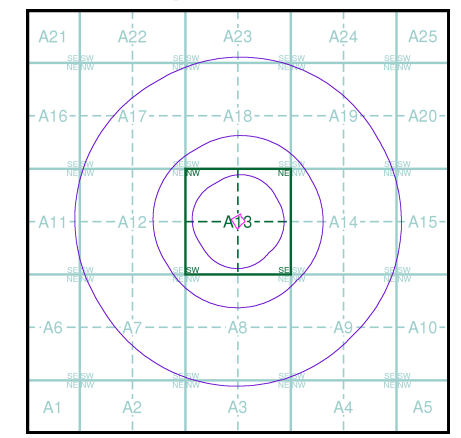
Street View
Published 2023
Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)



Street View Map - Slice A



Order Details
 Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details
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APPENDIX C



LANDMARK GEOLOGY MAPS

Geology 1:50,000 Maps Legends













Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PMCM	Pennine Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	TR	Thornhill Rock	Sandstone	Not Supplied - Westphalian
	PMCM	Pennine Middle Coal Measures Formation	Sandstone	Not Supplied - Westphalian
	LPE	Lepton Edge Rock	Sandstone	Not Supplied - Westphalian
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	PLCM	Pennine Lower Coal Measures Formation	Sandstone	Not Supplied - Westphalian
	FHR	Falhouse Rock	Sandstone	Not Supplied - Westphalian
	ER	Emley Rock	Sandstone	Not Supplied - Westphalian
	BRSR	Birstall Rock	Sandstone	Not Supplied - Westphalian
	CLRK	Clifton Rock	Sandstone	Not Supplied - Westphalian
		Faults		
		Rock Segments		

Geology 1:50,000 Maps

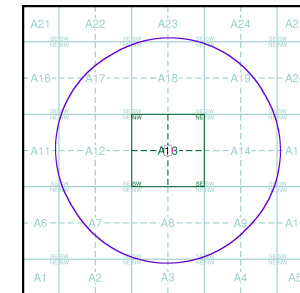
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	077
Map Name:	Huddersfield
Map Date:	2003
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A

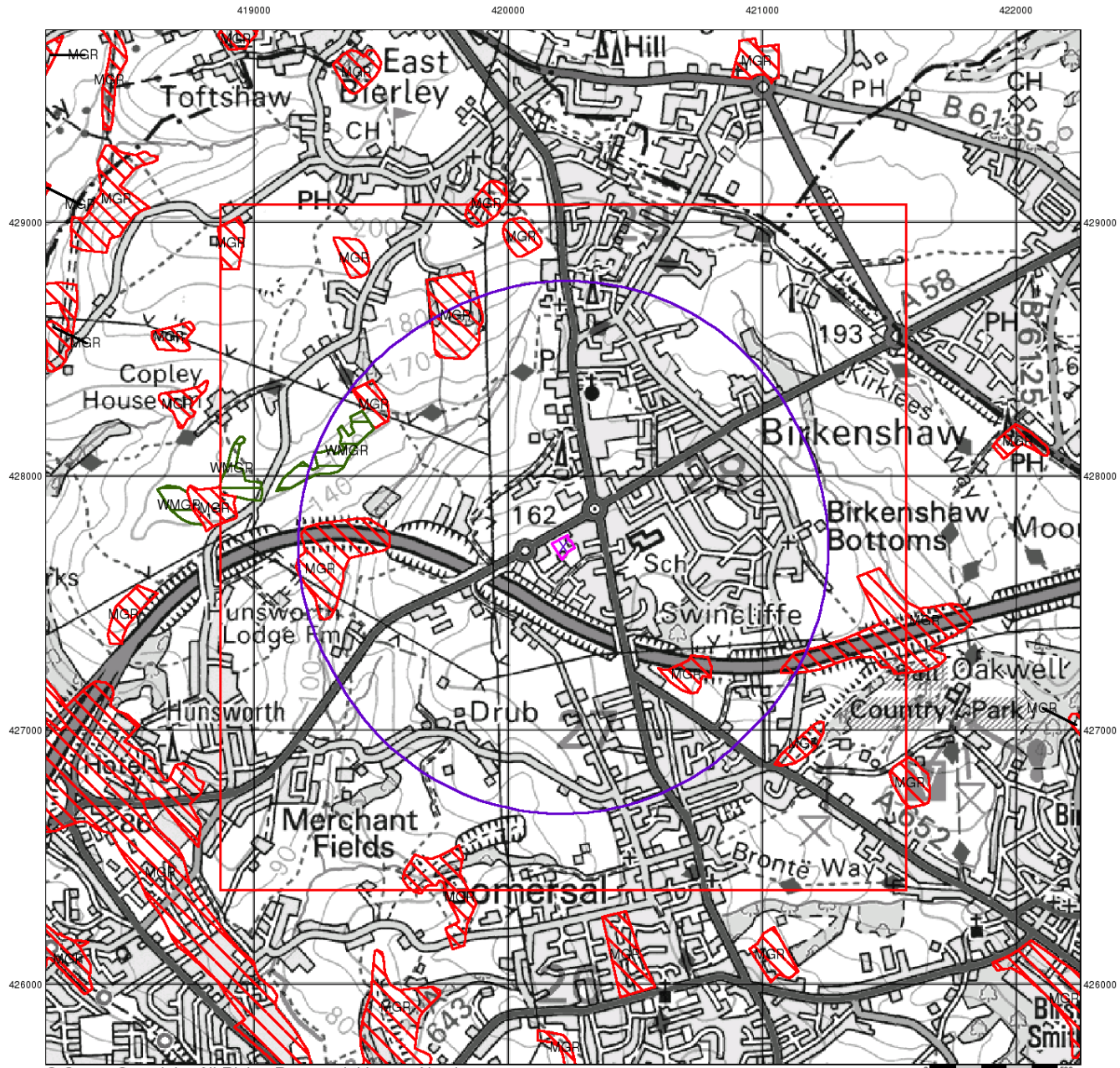


Order Details:

Order Number:	313377718_1_1
Customer Reference:	ORH/20
National Grid Reference:	420220, 427720
Slice:	A
Site Area (Ha):	0.43
Search Buffer (m):	1000

Site Details:

Site at, Whitehall Road West, Birkenshaw, Kirklees



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Artificial Ground and Landslip

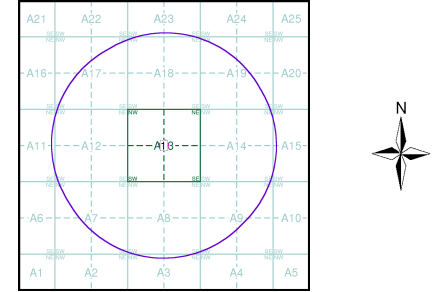
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

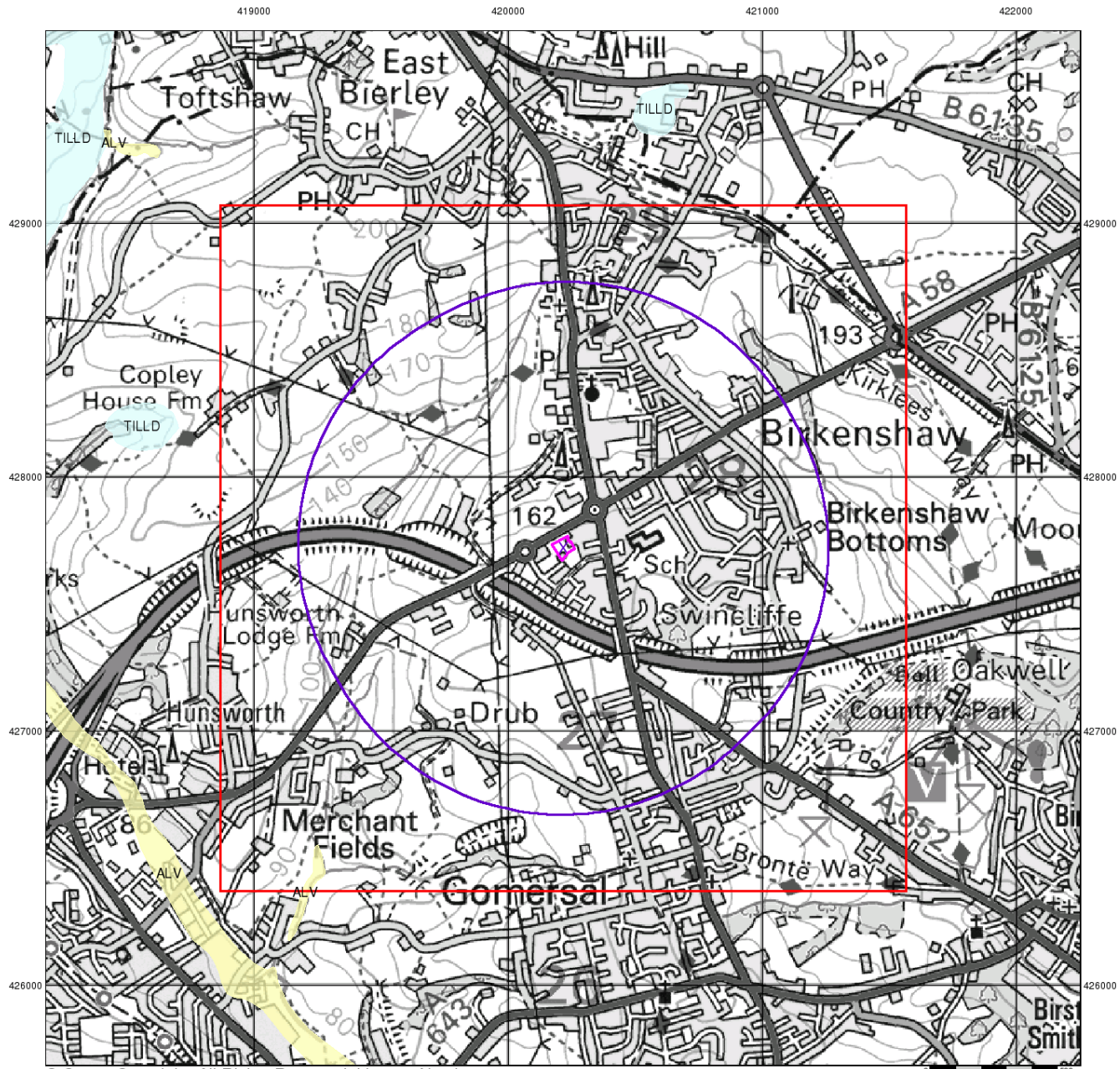
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Site Details:

Site at, Whitehall Road West, Birkenshaw, Kirklees



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 Fax: 0844 844 9951
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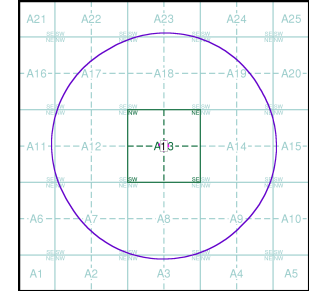
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

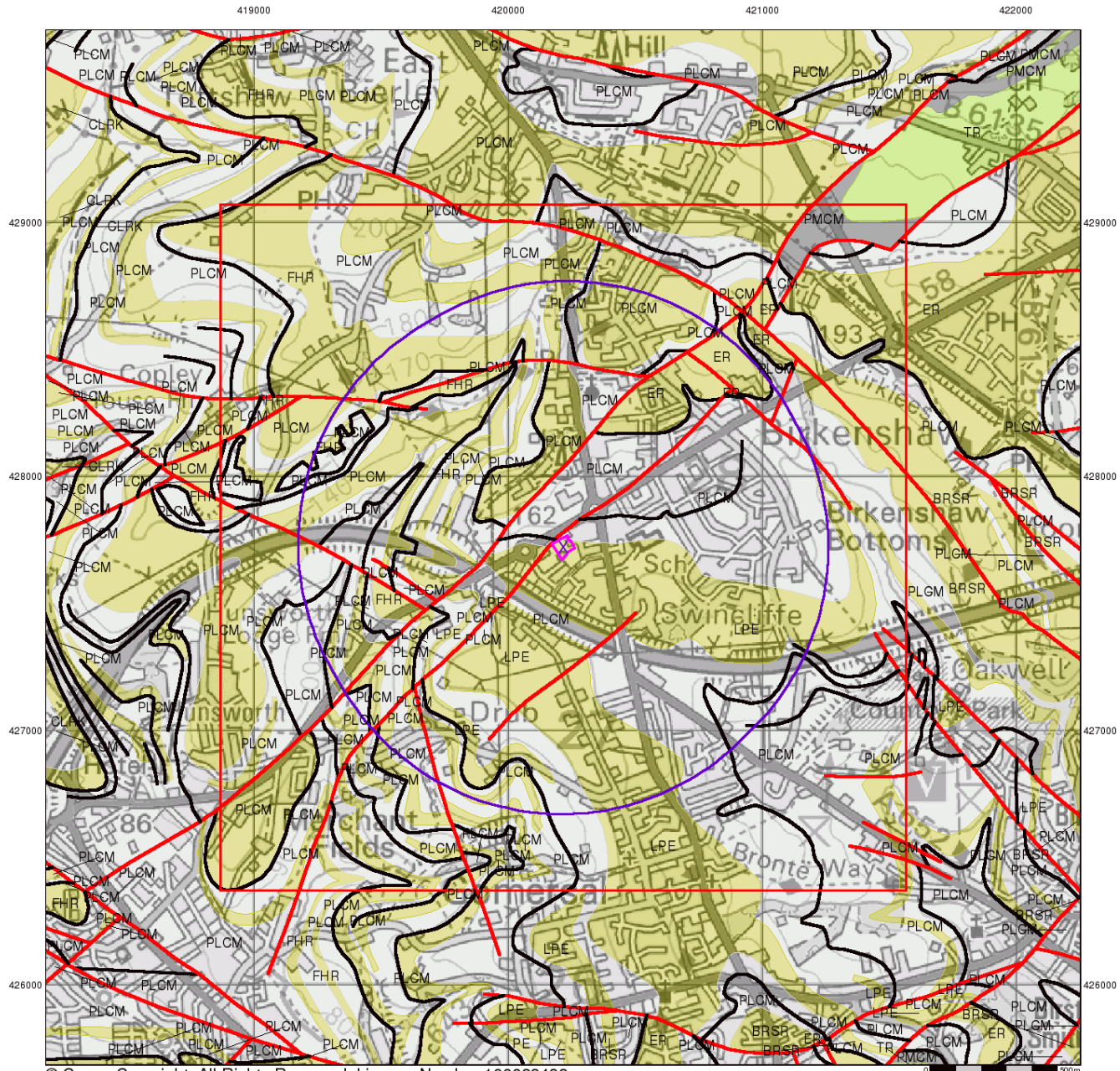
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Site Details:

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Bedrock and Faults

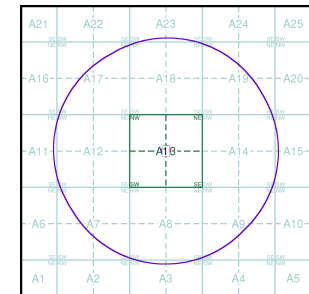
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

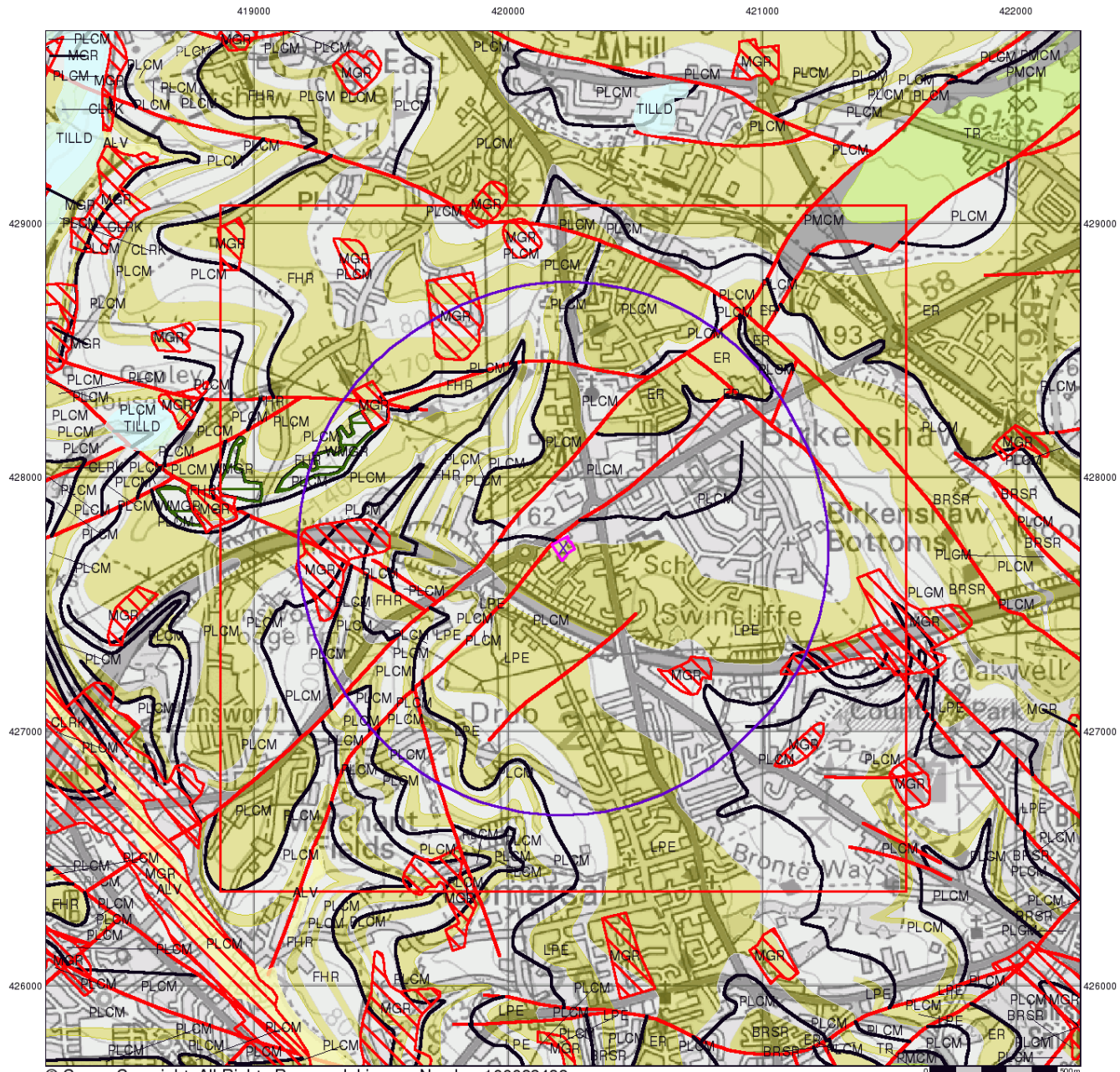
Order Number: 31337718_1_1
 Customer Reference: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details:

Site at, Whitehall Road West, Birkenshaw, Kirklees



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



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ARP GEOTECHNICAL LTD

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

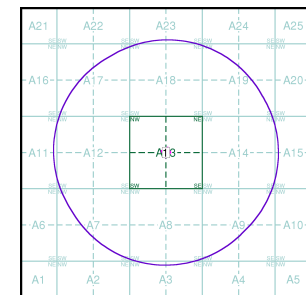
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

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APPENDIX D

COAL MINING REPORT

Overall Result:

PASSED

Expert Opinion:

Within the scope of this assessment, the Site is not considered to be susceptible to coal mining-related ground instability. Any identified coal mining features are considered unlikely to impact the value or security of the Site for normal lending purposes and there is no reason for them to impact upon the completion of this transaction.

Will coal mining activity impact the value of the property?

UNLIKELY TO IMPACT VALUE



Are there any adverse mine entries or surface hazards that should be brought to the lender's attention?

NO NEED TO NOTIFY LENDER



Are there mining hazards that should be brought to the purchaser's attention?

HAZARDS IDENTIFIED



Within Coal Mining Reporting Area

YES

Report Address:

15, Birkenshaw, West Yorkshire,

CON29M Questions

Assessment

CON29M Questions	Assessment	Icon
Q1. Past underground coal mining	YES ADVISORY	
Q2. Present underground coal mining	NO PASSED	
Q3. Future underground coal mining	NO PASSED	
Q4. Shafts and adits (mine entries)	NO PASSED	
Q5. Coal mining geology	YES PASSED	
Q6. Past opencast coal mining	NO PASSED	
Q7. Present opencast coal mining	NO PASSED	
Q8. Future opencast coal mining	NO PASSED	
Q9. Coal mining subsidence claims	NO PASSED	
Q10. Mine gas emissions	NO PASSED	
Q11. Emergency surface hazard call-out incidents	NO PASSED	
Q12. Withdrawal of support	NO PASSED	
Q13. Working facilities orders	NO PASSED	
Q14. Payments to owners of former copyhold Land	NO PASSED	
Non-Coal Mining	NO PASSED	

Report Details:

Report Reference:

TFC20230627151015L1-ORH20

Client Reference:

ORH/20

Date: 27/06/2023



User Key:

- Lender Attention
- Conveyancer Further Action
- Purchaser Advisory
- Passed - No Further Action

Official Coal Authority Licensed Data: V1_338_20230619_F | 23-06-2023

Please see below our expert opinion and next steps with regards to the property. These may be copied into your Report on Title. No physical site inspection has been carried out. This official CON29M report highlights only the information which we have determined should be drawn to your attention however, other risks may be present. Relevant prudent enquiries for the purchaser are highlighted within the Next Steps section.

Report Conclusions:

Mining features have been identified within the physical influence of the Site, resulting in a susceptibility to past, present and/or future ground movement. Below exist relevant interpreted conclusions based on the findings of this report (where applicable):

A coal seam has been identified within 20 metres of the Site and associated shallow unrecorded coal mine workings are suspected to have been historically worked beneath/within the immediate vicinity of the Site. Historical 'shaft-like' features, called 'Bell Pits', are also particularly common at/near coal outcrops, often occurring in clusters and being typically unrecorded in nature. Given the shallow depth of suspected coal mine workings (e.g., 'Bell Pits') beneath the Site, any movement within the worked coal seams may cause ground instability at the surface. Any previous movement in the ground should already be present in pre-existing structural defects; please see the report recommendations for further information.

Next Steps:

It is considered prudent that an appropriate commercial RICS Structural and/or Building Survey is acquired for any properties/structures present on the Site in question to assess, amongst other important considerations, their structural condition. This report will highlight any subsidence-related defects, which may relate to ground instability, while also noting any serious or dangerous issues that may require attention. This survey will also include advice on any defects, repairs or maintenance decisions. Should any future signs of subsidence or collapse be identified, then we recommend you seek further expert assistance, however currently, no further reporting on ground instability is required. Our team can be contacted using the information supplied on the front page of this report.

In the event subsidence has previously occurred or occurs in the future, it is recommended our team are contacted immediately for advice on practical and appropriate next steps, including how one can make a compensation claim to the Coal Authority. For detailed information on the statutory cover available in coal mining areas, please see the back of this report.

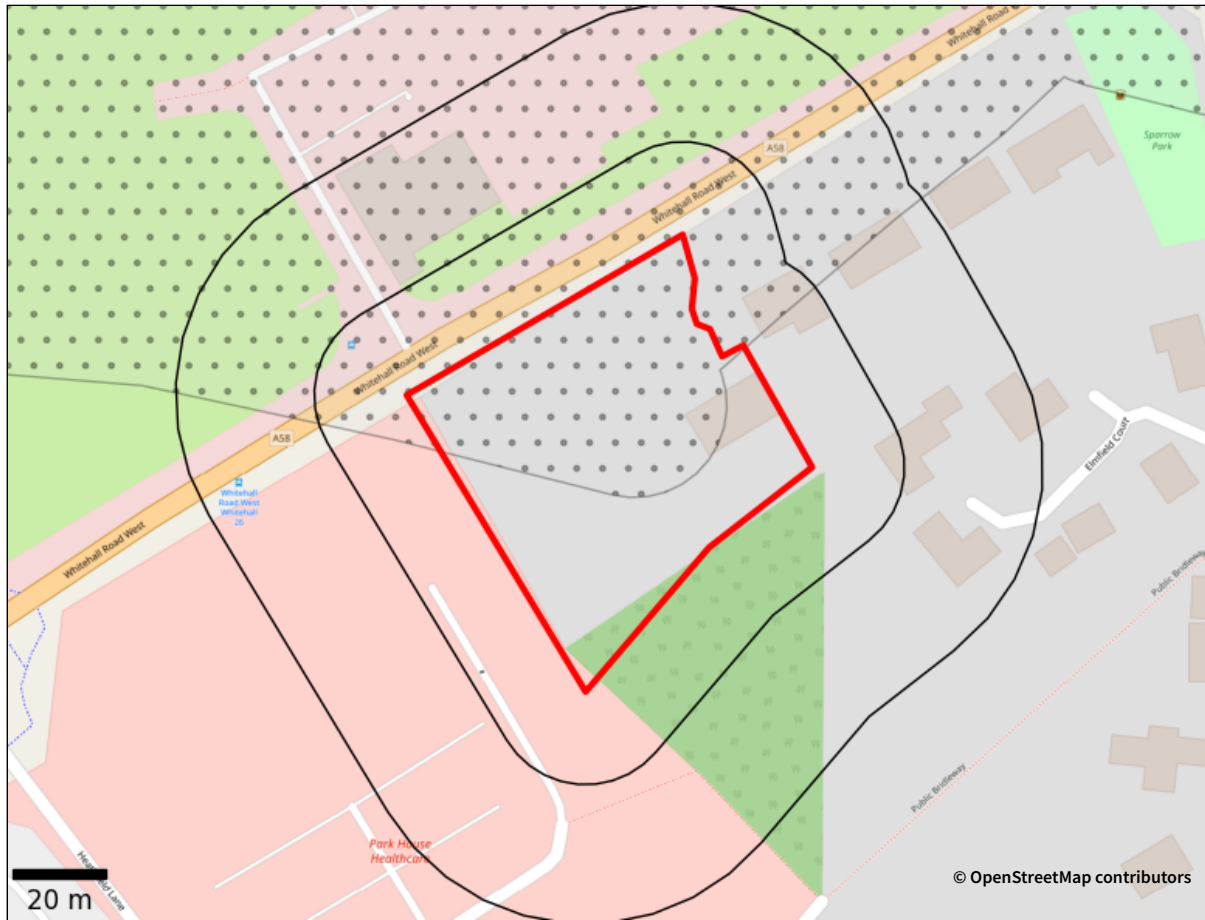
If you are planning on altering or developing the Site

The Site is likely located within a 'High Development Risk Zone', as defined by the Coal Authority. Due to the presence of recorded and/or unrecorded coal mining activity, any future development of the Site may trigger ground collapse and/or subsidence. It should be noted that prior to site works or future development, your local planning authority may require you to commission a full Coal Mining Risk Assessment (CMRA) or Site Investigation by a qualified mining geologist/engineer. In the event, you require further professional support, please contact our team directly to discuss the appropriate further steps.

Contact the report author by calling our team on: 0330 900 7500

This official CON29M Non-Residential Coal Mining Report is a site-specific interpretation of coal mining activity. These enquiries are The Law Society CON29M Coal Mining search enquiries and are used with permission of the Law Society. The Law Society CON29M Coal Mining search enquiries are protected by copyright owned by The Law Society of 113 Chancery Lane, London WC2A 1PL. Dye & Durham (UK) Limited's (formerly Terraforma IDC Limited)'s Terms and Conditions are applicable at the time the report was produced.

Mining Hazard Map



Site Address: 15 , Birkenshaw, West Yorkshire,


Coal Authority Data	Coal Authority Subsidence Claims	Other Data
Adit	01 – Awaiting Decision	Coal Affected Areas
Shaft	02 – Rejected	Site Boundary
Zone of Influence	03 – Admitted	20m 50m Scales
Zone of Influence, Factoring for Record Accuracy	05 - Settled	
	06 - Withdrawn	



The enquiries below are The Law Society CON29M Coal Mining search enquiries and are used with permission of The Law Society. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes and ScotForm 2006: Coal mining search in Scotland; under which all replies to these enquiries are made. These fourteen questions and their answers are relevant to a non-residential property and should not be relied upon in a residential transaction.

Detailed findings of coal mining activity:

1. Past underground coal mining

ADVISORY 

Q. Is the property within the zone of likely physical influence on the surface of past underground coal workings?


A:

The Site is recorded to be within the surface area of underground coal mine workings of 2 seams of coal. Coal has been mined at an approximate depth of 91 to 149 metres beneath the surface. The last known working date is recorded as 1969.

The Site is not within a surface area that could be affected by historic, known shallow underground coal mining.

The Site is recorded to be situated within 20 metres of a known coal seam outcrop. This coal is suspected to have been historically worked at depth of less than 30 metres beneath the surface, within the vicinity of the Site. Please see the report conclusions for further information.

2. Present underground coal mining


PASSED 

Q. Is the property within the zone of likely physical influence on the surface of present underground coal workings?

A:

The Site is not situated within an area which could be affected by currently active underground coal mining.

3. Future underground coal mining

PASSED 

Q. (a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove by underground methods?

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?


(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?

A:

The Site is not situated within an area which could be affected by any future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future.

The Site is not situated within the influence of a Section 46 Notice.

4. Shafts and adits (mine entries)


PASSED 

Q. Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

A:

There are no recorded mine entries within 20 metres of the Site.

5. Coal mining geology

PASSED 

Q. Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?



A:

Deep (over 30 metres) underground coal mine workings are recorded beneath the Site and there is a recorded fault within the influence of the Site. Please see the report conclusions for further information.

6. Past opencast coal mining

PASSED 

Q. Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

A:

The Site is not situated within any past licence areas for the opencast extraction of coal.

There are no unlicensed opencast pits or extraction sites beneath the Site.

7. Present opencast coal mining


PASSED 

Q. Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

A:

The Site is not situated within an area which could be affected by currently active opencast coal mining.

8. Future opencast coal mining

PASSED 


Q. (a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

A:

There are no plans by the Coal Authority to grant a licence to extract coal using opencast methods within 800 metres surrounding the Site.

9. Coal mining subsidence claims

PASSED 

Q. (a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 1st January 1994?

(b) Does any current 'Stop Notice' delaying the start of remedial works or repairs affect the property?


(c) Has any request been made under section 33 of the 1991 Act to execute preventive works before coal is worked?

A:

There is no record of any coal mining-related damage notices or subsidence claims for the Site or for any Site within 50 metres of the Site.

There is no record of a request that has been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas emissions

PASSED 

Q. Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?


A:

There are no records of any Mine Gas hazards within the influence of the Site and there is no record of any Mine Gas emissions requiring



action.

11. Emergency surface hazard call-out incidents


PASSED 

Q. Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

A:

The Site is not situated within the influence of a coal mining-related hazard.

12. Withdrawal of support


PASSED 

Q. (a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?
(b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?

A:

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

13. Working facilities orders


PASSED 

Q. Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?

A:

The property is not in an area for which any orders have been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold Land


PASSED 

Q. Has any relevant notice, which may affect the property, been given?

A:

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

Non-Coal Mining

PASSED 

Q. Is the property within the zone of likely physical influence on the surface of past non-coal workings?

A:

Based on Coal Authority data, the Site is not within a surface area that could be affected by historic, known underground non-coal mining.

Based on Coal Authority data, the Site is not within a surface area that could be affected by historic, known shallow underground non-coal mining.

Based on Coal Authority data, the Site is not within a surface area that could be affected by historical unrecorded shallow underground non-coal mining.



FURTHER INFORMATION

Key and Colour Information

The below key provides further guidance on the colours used throughout this report.

Lender Attention	This colour is applied when the report has identified mining hazards within the vicinity of the Site, including features (e.g., mine shafts/adits) that could affect the future value of the Site. A lender may want to be alerted to this adverse entry, due to requirements of UK Finance (formerly the Council of Mortgage Lenders), before deciding on whether to proceed with the transaction. The conveyancer is advised to follow the terms of the UK Finance Mortgage Lenders' Handbook and any additional instructions from the prospective lender in its consideration and determination of whether to refer any part of this report to the lender.
Conveyancer Further Action	This colour is applied when the report has concluded that further expert analysis of the Site is required. It is recommended that further actions are undertaken to quantify the risk of subsidence or collapse to the Site prior to purchase. It is recommended that the conveyancer liaises with all necessary parties regarding the report's findings.
Purchaser Advisory	This colour is applied when the purchaser's attention should be drawn to the prudent recommendations and advice outlined in the report. The report results should not hinder the transaction and Dye & Durham (UK) Limited's (formerly Terraforma IDC Limited) Terms & Conditions are valid for the Site. However, it is recommended that the purchaser(s) read this report carefully.
Passed No Further Action	This colour is applied when the report has not identified any mining features that influence the ongoing use or value of the Site. Our expert team does not believe that any further actions are required for this transaction and Dye & Durham (UK) Limited's (formerly Terraforma IDC Limited) Terms & Conditions are valid for the Site.

Additional Remarks

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Future Development

In scenarios where mining activity has been identified, a prudent developer would seek appropriate technical advice before any works are undertaken.

In these areas, if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority.

Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.



Notice of Statutory Cover

In the unlikely event of any future damage, the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994) may apply*, and the Coal Authority / Licensee has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land and/or property in connection with lawful coal-mining operations. Typically, these actions will not need to involve either your insurance company or mortgage lender and therefore the end user(s) should not incur any costs or liability.

*Note: this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

In addition to the above, it should also be noted that the Coal Authority offer a Public Safety and Subsidence Department that provides a 24-hour 7 day a week call out service (Tel: 01623 646 333) to take remedial action in respect of hazards associated with the movement or collapse of any coal mineshaft or entrances to coal mines and from other coal mining related surface hazards. Further information can be found on their website: <https://www.groundstability.com/>.

Limitations

This CON29M Coal Mining Report has been carried out with reference to all available official Coal Authority licensed data, an extensive collection of abandoned mine plans, maps, and records. From this material, we have endeavoured to provide as accurate a report as possible. Any and all analysis and interpretation of licensed Coal Authority data in this report is made by Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited).

Information provided by Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) in this report is compiled in response to The Law Society CON29M Coal Mining search enquiries and ScotForm 2006 coal mining search in Scotland. The scope of the assessment is concerned only with the interpretation of past, present and future extraction of coal minerals. This report does not consider the impact from non-coal mining hazards and/or natural ground stability hazards, such as subsidence, landslip or coastal erosion. For an expert opinion on all mining and ground hazards and in order to meet the requirements of Law Society Guidance Notes (2018) and best practice guidance in the 25th Edition Conveyancing Handbook (2018), you may choose to obtain a Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) Ground Report by contacting a member of the team.

This report is a 'remote' investigation and reviews only information provided by the client and from the databases of publicly available information that have been chosen to enable a desk based environmental assessment of the Site. The report does not include a Site Investigation, nor does Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) make specific information requests of the regulatory authorities for any relevant information they may hold.

This report is concerned solely with the Site searched and should not be used in connection with adjacent properties as only relevant known mining features have been mentioned and any known features that could potentially have a direct influence upon the target Site. Other features which may be present in the general area may have been omitted for clarity.

The report is based upon the Site boundaries as shown on the supplied location plan. This report is confidential to the client, the client's legal advisor and the client's Mortgage lender, as defined in the Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) & TerraSearch® terms & conditions, and as such may be used by them for conveyancing or related purposes. We have no liability toward any person or organisation not party to commissioning this report. This report or any part of it is not permitted to be reproduced, copied, altered or in any other way distributed by any other person or organisation.



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This report meets the principles and requirements of the Property Codes Compliance Board Compliance Note CN02J in respect of Coal Mining Searches.

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- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.



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- handle complaints speedily and fairly
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CONTACT OUR TEAM IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

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If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:

The Property Ombudsman scheme, Milford House, 43-55 Milford Street, Salisbury, Wiltshire SP1 2BP, Tel: 01722 333306, Fax: 01722 332296, Email: admin@tpos.co.uk, Web site: www.tpos.co.uk.

You can get more information about the PCCB from www.propertycodes.org.uk or from our website at <https://www.terrafirmidc.co.uk>.

Complaints Procedure

If you want to make a complaint directly to Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited), we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to: Senior Executive, Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) - Address: Imperium, Imperial Way, Reading, RG2 0TD; Email: insight-info@dyledurham.com; Telephone: 0330 900 7500.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk. We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

WE TRUST THIS REPORT PROVIDES THE INFORMATION YOU REQUIRE. PLEASE CONTACT US IF YOU HAVE ANY QUERIES OR IF WE CAN BE OF ANY FURTHER ASSISTANCE.






CON29M Coal Report Insurance Backed Guarantee

In the unlikely event that the coal data used by Dye & Durham (UK) Limited (formerly Terraforma IDC Limited) in order to compile their report is later found to be inaccurate, the purchaser of the report benefits from Loss of Value Protection of up to £100,000 and should the purchaser later suffer a financial loss, following their reliance on the report, are protected by Dye & Durham (UK) Limited (formerly Terraforma IDC Limited).

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Policy Number: GESI 0035553CV	
Insurer	Great Lakes Insurance SE, UK Branch Great Lakes Insurance SE is a German insurance company with its headquarters at Königinstrasse 107, 80802 Munich. Great Lakes Insurance SE, UK Branch, is authorised and regulated by Bundesanstalt für Finanzdienstleistungsaufsicht. Deemed authorised by the Prudential Regulation Authority. Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorisation, are available on the Financial Conduct Authority's website.
Insured	Dye & Durham (UK) Limited (formerly Terraforma IDC Limited)
Purchaser	The person who buys the Search Report from the Insured, and/or any of the following: <ol style="list-style-type: none"> 1. The person who asked for the Search Report in connection with the purchase of the Property (and their mortgagee). 2. The person who purchased the Property (and their mortgagee) if the person selling the Property has asked for a Search Report for the benefit of the Purchaser as part of a seller's pack or if the Property has been purchased by way of auction. 3. The owner of the Property (and their mortgagee) if they are re-mortgaging the Property or the owner of the Property who has chosen to obtain a Search Report. 4. Their estate and beneficiaries, to whom the benefit of the Policy will pass in the event of their death during the Period of Insurance.
Property	Any commercial property for which a Search Report is provided by the Insured for the benefit of the Purchaser during the Period of Insurance.
Search Report	The Dye & Durham (UK) Limited (formerly Terraforma IDC Limited) CON29M Coal Report (or relevant Coal assessment section of any attached Dye & Durham (UK) Limited (formerly Terraforma IDC Limited) report).
Limit of Indemnity	£100,000.00 in the aggregate in respect of any one Property
Effective Date	The date of the Search Report, provided by the Insured to the Purchaser being the date that cover will commence.
Period of Insurance	Cover for each individual Property will be from the Effective Date until the Purchaser of the Search Report either; <ol style="list-style-type: none"> 1. no longer has an interest in the Property, or, 2. until the date of a Subsequent Search Report is obtained by the Purchaser after the Effective Date, whichever is the sooner.
Insured Use	The continued use of the Property as a commercial property not exceeding 25 hectares as constructed and used at the Effective Date.
Cover	Subject to the terms and conditions of this Policy and provided the Property has been declared to the Insurer and the Premium inclusive of Insurance Premium Tax has been paid to the Administrator, the Insurer will indemnify the Insured during the Period of Insurance in respect of Loss arising from any claim by a Purchaser made against the Insured resulting from inaccurate data having been incorporated into such Search Report.
Market Value	The value of the Purchaser's interest in the title to the Property as determined by a surveyor appointed by agreement between the Insurer and the Insurer, but subject to General Condition 11.
Loss	<ol style="list-style-type: none"> 1. The loss in Market Value of the Property directly attributable to any changes in the information revealed in a subsequent Search Report obtained by the Purchaser, which was not revealed in the Search Report provided to the Purchaser, which was carried out on the Effective Date, such loss in Market Value to be calculated at the date of the subsequent Search Report, and 2. All other costs and expenses which have been agreed in advance by the Insurer.
Exclusions	The Insurer will not be liable to indemnify the Insured for: <ol style="list-style-type: none"> 1. Loss which is or would otherwise be recoverable under a building's insurance policy. 2. Loss arising wholly or partly because of the wilful act or neglect of the Insured. 3. Loss if at the date of a claim the Purchaser is not the legal or beneficial owner of the Property. 4. Loss in relation to loss of a transaction for the sale or for the purchase of the Property and any costs incurred by the Purchaser in relation to the loss of such transaction.

	<ol style="list-style-type: none"> 5. Loss in respect of structural or other physical damage caused to the Property by subsidence or flooding after the Effective Date. 6. Loss as a result of any change in information in response to sections 3 – Future underground coal mining and 8 – Future opencast coal mining of the Search Report carried out at the Effective Date. 7. Loss in respect of the information in any subsequent Search Report after the Effective Date if this information also appears on the Search Report issued to the Purchaser on that date. 8. Loss in relation to any change to the CON29M (2018) Search form and/or the Search Report made after the Effective Date which affects the Insurer’s responsibility under this Policy, if Insurers would not have been responsible for the Loss before such change. 9. Loss in relation to the contents of any brine data whatsoever contained within the standalone Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) CON29M Coal Report. 10. Loss in relation to any change in the interpretation of information upon which Search Report was produced provided such information remains unchanged. 11. Loss arising from claims made under this Policy by any party other than the Insured.
<p>Claims Conditions</p>	<ol style="list-style-type: none"> 1. It is a condition precedent of the Insurer’s liability under this Policy that the Policyholder and/or the Purchaser will give written notice to the Administrator at the address shown under “Making a Claim”, below, as soon as reasonably practicable, of any circumstances likely to give rise to a claim for which the Insurer may be liable under this Policy and provide the Administrator with such information and documentation as may reasonably be requested. 2. The Insurer will be entitled to decide how to defend or settle a claim. 3. The Insurer will be entitled to participate fully in any defence, negotiation or settlement of a claim or circumstance and in any such event the Policyholder and/or the Purchaser will (to the extent reasonably practicable in the circumstances, but without limitation): <ol style="list-style-type: none"> (i) not incur any cost or expense without first consulting with and receiving written consent from the Insurer. (ii) not make any admission of liability, offer, settlement, promise, payment or discharge without first consulting with and receiving written consent from the Insurer. (iii) give the Insurer access to and provide the Insurer with copies of all correspondence and documentation available to the Insured in relation to the claim or circumstance and afford the Insurer sufficient time in which to review and comment on such documentation. (iv) inform the Insurer of any proposed meeting with any third party in relation to a claim or circumstance and allow the Insurer to attend such meeting and, if the Insurer so requests, provide a detailed written account of the subject and outcome of any such meeting or discussion at which the Insurer was not present. (v) conduct all negotiations and proceedings in respect of any claim or circumstance with advisers of which the Insurer has approved in writing and take such action as the Insurer may reasonably require to contest, avoid, resist, compromise or otherwise defend any claim or circumstance. (vi) provide the Insurer with such other information and assistance in connection with any claim or circumstance as the Insurer may reasonably request. 4. The Insurer will be entitled to all rights and defences it may have in respect of a claim by a Purchaser against any successor to that Purchaser. 5. If at the time of any claim made under this Policy, there is any other insurance in place whether effected by the Purchaser or by any other person under which the Purchaser may be entitled to make a claim the Insurer will be liable to pay or contribute in respect of a claim under this Policy only rateably with such other insurance. 6. If the Purchaser makes any claim knowing it to be false or fraudulent as regards amount or otherwise, this Policy will become voidable and all claims under it may be forfeited. 7. In the event of any claim under this Policy from a Purchaser where the Policyholder has failed to make the required declaration and/or has failed to pay the Premium due to the Insurer via the Administrator but the Insurer is still required to deal with the claim from the Purchaser, the Insurer will be entitled to seek recovery from the Policyholder of all claims monies paid to the Purchaser together with the amount of the Insurer’s costs incurred in the handling of the claim.
<p>Additional Information</p>	<p>This is a summary of the policy and does not contain its full terms and conditions. A copy of the general conditions is available on request. In the event of a claim, please contact Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited) (the ‘Insured’) in the first instance. Dye & Durham (UK) Limited (formerly Terrafirma IDC Limited)’s terms and conditions (https://www.terrafirmidc.co.uk/terms_and_conditions) provide an assurance (section 3.8) that in the event of any successful claim, the award will be paid, in full, to the Customer/Purchaser.</p>
<p>Administrator</p>	<p>CLS Property Insight Limited, 26 Kings Hill Avenue, West Malling, Kent, ME19 4AE. CLS Property Insight Limited can be contacted by email at info@clspropertyinsight.co.uk or by telephone on 01732 753 910.</p>  <div style="text-align: right;">  R P Partington Director  Signed by CLS Property Insight Limited on behalf and with the authority of the Insurer </div>

APPENDIX E

LANDMARK ENVIROCHECK REPORT

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

313377718_1_1

Customer Reference:

ORH/20

National Grid Reference:

420220, 427720

Slice:

A

Site Area (Ha):

0.43

Search Buffer (m):

1000

Site Details:

Site at
Whitehall Road West
Birkenshaw
Kirklees

Client Details:

Mr J Race
ARP Geotechnical Ltd
Northwest House
5-6 Northwest Business Park
Servia Hill
Leeds
LS6 2QH

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	15
Hazardous Substances	-
Geological	16
Industrial Land Use	25
Sensitive Land Use	28
Data Currency	29
Data Suppliers	34
Useful Contacts	35

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				9
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4			1	1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4			Yes	
Pollution Incidents to Controlled Waters	pg 4		3	4	4
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
Substantiated Pollution Incident Register					
River Quality Chemistry Sampling Points					
Water Abstractions	pg 6				(*3)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 6	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 7	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 7			3	65

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 15				1
Historical Landfill Sites	pg 15				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 15	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 15				1
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 16	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 16		12	10	22
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 23	Yes	n/a	n/a	n/a
Mining Instability	pg 23	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 23	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 23	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 24	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 24	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 24	Yes	n/a	n/a	n/a

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 25		7	3	18
Fuel Station Entries	pg 27			1	
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 28		1		
Areas of Unadopted Green Belt	pg 28		1		
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 28	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	0	1	420217 427722
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	173	1	420000 427722
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	222	1	420217 427450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	272	1	420217 427400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	275	1	420250 427400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	291	1	420550 427700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	305	1	420350 427400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (S)	350	1	420350 427350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	401	1	420450 427350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (SE)	417	1	420400 427300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (SE)	432	1	420500 427350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	441	1	420700 427722
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (SE)	442	1	420450 427300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	467	1	420550 427350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	497	1	419900 428150
1	Discharge Consents Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Oxford Road Cso Oxford Road, Birkenshaw, Bradford, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Calder Reference: Ywuccd2/8 Permit Version: 1 Effective Date: 12th November 1997 Issued Date: 12th November 1997 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Of Nutter Beck Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A8SE (SE)	709	2	420528 427037

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Whitehall Road Sso, Birkenshaw, Nr Bradford, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Aire Reference: Ywuccd2/9 Permit Version: 1 Effective Date: 12th November 1997 Issued Date: 12th November 1997 Revocation Date: 25th April 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Wormalds Drain Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A19SW (NE)	753	2	420867 428173
2	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Old Lane No 2 Cso Whitehall Road East, Birkenshaw, Bradford, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Calder Reference: Wra8488 Permit Version: 1 Effective Date: 31st March 2005 Issued Date: 16th March 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Wormalds Drain Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A19SW (NE)	757	2	420880 428160
3	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Hunsworth - Drub Lane, Cleckheaton, Kirklees, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Wharfe Reference: Wra8669 Permit Version: 2 Effective Date: 3rd March 2010 Issued Date: 3rd March 2010 Revocation Date: 14th April 2022 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Tributary Of Nann Hall Beck Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A8SW (S)	828	2	420038 426862
3	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Hunsworth - Drub Lane, Cleckheaton, Kirklees, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Wharfe Reference: Wra8669 Permit Version: 1 Effective Date: 1st April 2005 Issued Date: 11th March 2005 Revocation Date: 2nd March 2010 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Tributary Of Nann Hall Beck Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A8SW (S)	828	2	420038 426862

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Hunsworth - Drub Lane, Cleckheaton, Kirklees, West Yorkshire Authority: Environment Agency, North East Region Catchment Area: Calder Reference: Ywuccd2/22 Permit Version: 1 Effective Date: 12th November 1997 Issued Date: 12th November 1997 Revocation Date: 2nd April 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Of River Spen Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A8SW (S)	844	2	420035 426847
4	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: East Bierley No2 Cso Bradford Road, Birkenshaw, Bradford, West Yorkshire, Bd11 2al Authority: Environment Agency, North East Region Catchment Area: Calder Reference: 1503 Permit Version: 3 Effective Date: 16th February 2022 Issued Date: 16th February 2022 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Lodge Beck Status: Varied under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A18NW (N)	955	2	420154 428721
4	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: East Bierley No2 Cso Bradford Road, Birkenshaw, Bradford, West Yorkshire, Bd11 2al Authority: Environment Agency, North East Region Catchment Area: Calder Reference: 1503 Permit Version: 2 Effective Date: 31st March 2004 Issued Date: 9th March 2004 Revocation Date: 15th February 2022 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Lodge Beck Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A18NW (N)	964	2	420150 428730
4	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: East Bierley No2 Cso Bradford Road, Birkenshaw, Bradford, West Yorkshire, Bd11 2al Authority: Environment Agency, North East Region Catchment Area: Calder Reference: 1503 Permit Version: 1 Effective Date: 2nd January 1963 Issued Date: 2nd January 1963 Revocation Date: 30th March 2004 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Lodge Beck Status: Transferred from Rivers (Prevention of Pollution) Act 1951-1961 Positional Accuracy: Located by supplier to within 10m</p>	A18NW (N)	964	2	420150 428730

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Whitehall Filling Station Location: Whitehall Road East, Birkenshaw, Bradford, West Yorkshire, BD11 2EJ Authority: Kirklees Metropolitan Borough Council, Environmental Health Department Permit Reference: PPC E 123 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	311	3	420506 427915
6	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Spensboro Motor Co Ltd Location: 601 Bradford Road, Birkenshaw, BRADFORD, West Yorksh Authority: Kirklees Metropolitan Borough Council, Environmental Health Department Permit Reference: Not Given Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input Status: Authorisation revoked Positional Accuracy: Manually positioned to the address or location</p>	A23SE (N)	990	3	420216 428759
	<p>Nearest Surface Water Feature</p>	A13SE (E)	273	-	420509 427611
7	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Abandoned mine Location: Tributary Of River Spen Authority: Environment Agency, North East Region Pollutant: Miscellaneous - Other Note: No Fish Killed Incident Date: 18th April 1996 Incident Reference: SL960421 Catchment Area: Calder Tributaries Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A13NW (N)	130	2	420200 427895
7	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Abandoned mine Location: Tributary Of River Spen Authority: Environment Agency, North East Region Pollutant: Miscellaneous - Other Note: Pollution Found; No Fish Killed Incident Date: 18th April 1996 Incident Reference: SL960421 Catchment Area: Calder Tributaries Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A13NW (N)	135	2	420200 427900
8	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Other General Premises Location: Todmorden/Source Calder Afu Authority: Environment Agency, North East Region Pollutant: Unknown Note: Not Supplied Incident Date: 18th August 1989 Incident Reference: 102606 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A13SE (E)	142	2	420400 427700
9	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Industrial Premises Location: Mouth/Scotia Beck Batley Beck Afu Authority: Environment Agency, North East Region Pollutant: Unknown Note: Not Supplied Incident Date: 9th August 1990 Incident Reference: 113567 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A13SE (SE)	255	2	420400 427500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	Pollution Incidents to Controlled Waters Property Type: Other General Premises Location: New Mill Road Authority: Environment Agency, North East Region Pollutant: Unknown Note: Not Supplied Incident Date: 22nd May 1989 Incident Reference: 9140 Catchment Area: Not Given Receiving Water: No Pollution Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	406	2	420600 427500
10	Pollution Incidents to Controlled Waters Property Type: Other General Premises Location: Bridge On A643, /Scotia Beck Batley Beck 09 Authority: Environment Agency, North East Region Pollutant: Oils - Diesel (Including Agricultural) Note: Not Supplied Incident Date: 22nd May 1989 Incident Reference: 9171 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	408	2	420600 427495
11	Pollution Incidents to Controlled Waters Property Type: Industrial Premises Location: Swincliffe Crescent Authority: Environment Agency, North East Region Pollutant: Oils - Diesel (Including Agricultural) Note: Not Supplied Incident Date: 23rd February 1989 Incident Reference: 8628 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	436	2	420300 428200
12	Pollution Incidents to Controlled Waters Property Type: Other General Premises Location: Swincliffe Crescent Authority: Environment Agency, North East Region Pollutant: Oils - Diesel (Including Agricultural) Note: Not Supplied Incident Date: 24th April 1989 Incident Reference: 8956 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	609	2	420700 427300
13	Pollution Incidents to Controlled Waters Property Type: Water Company Sewage: Foul Sewer Location: Scotia Beck/Source Batley Beck Afu Authority: Environment Agency, North East Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 26th March 1990 Incident Reference: 109074 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	779	2	420500 428500
14	Pollution Incidents to Controlled Waters Property Type: Other General Premises Location: Nam Hall Beck, HUNSWORTH Authority: Environment Agency, North East Region Pollutant: Not Given Note: Fish Killed: No Information Incident Date: 1st April 1997 Incident Reference: SL970393 Catchment Area: Calder Tributaries Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SW (W)	834	2	419350 427600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	Pollution Incidents to Controlled Waters Property Type: Fire Water Location: Spen Beck, CLECKHEATON Authority: Environment Agency, North East Region Pollutant: Oils - Diesel (Including Agricultural) Note: No Fish Killed Incident Date: 14th February 1997 Incident Reference: SL970173 Catchment Area: Calder Tributaries Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	999	2	420700 426800
	Water Abstractions Operator: Gomersal Mills Ltd Licence Number: 2/27/13/001 Permit Version: 101 Location: Boreholes X 2 - Coal Measures Authority: Environment Agency, North East Region Abstraction: Textiles And Leather: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Gomersal Mills, Nr. Leeds Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3SE (S)	1598	2	420500 426100
	Water Abstractions Operator: Gomersal Mills Ltd Licence Number: 2/27/13/001 Permit Version: 100 Location: Boreholes X 2 Authority: Environment Agency, North East Region Abstraction: Textiles And Leather: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 1364 Yearly Rate (m3): 350000 Details: Gomersal Mills, Nr. Leeds Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th February 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3SE (S)	1598	2	420500 426100
	Water Abstractions Operator: Kirklees Metropolitan Council Licence Number: 2/27/13/153 Permit Version: 100 Location: Nova Beck Authority: Environment Agency, North East Region Abstraction: Holiday Sites, Camp Sites & Tourist Attractions: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 36 Yearly Rate (m3): 9500 Details: Oakwell Hall, Country Park, Birstall, Near Batley Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th April 1982 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(E)	1792	2	421980 427220
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial: <90% Patchiness: <3m Superficial Thickness: No Data Superficial Recharge:	A13NE (NE)	0	4	420217 427722

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	4	420217 427722
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A14SW (SE)	356	5	420565 427537
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 24.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A14SW (SE)	383	5	420586 427520
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 323.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A14SW (SE)	407	5	420604 427503
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 292.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A17SE (NW)	553	5	419859 428191
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 109.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A8NE (S)	576	5	420373 427119
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A17SE (NW)	591	5	419731 428127

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 246.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A17SE (NW)	591	5	419731 428127
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.3 Watercourse Level: Underground Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A18SW (NW)	591	5	419920 428271
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 265.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A8NE (S)	592	5	420441 427126
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 42.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A18SW (NW)	598	5	419922 428281
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 106.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12NE (NW)	601	5	419648 428027
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12NE (W)	606	5	419605 427947
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 535.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Hunsworth Upper Lane Beck Catchment Name: Aire and Calder Primacy: 1	A12NE (NW)	607	5	419646 428036
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 159.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A18SW (NW)	611	5	419939 428305
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 95.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18SW (NW)	611	5	419939 428305

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 106.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12NE (W)	622	5	419595 427964
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12SE (SW)	648	5	419612 427410
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 30.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12NE (W)	658	5	419541 427919
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 136.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12NW (W)	667	5	419525 427895
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 158.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12SE (SW)	668	5	419600 427392
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 108.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	681	5	420016 428415
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 12.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	681	5	420016 428415
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 213.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	690	5	420005 428421
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 17.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	701	5	420730 427200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 36.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	701	5	420730 427200
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	702	5	420742 427210
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 103.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18SW (NW)	706	5	419885 428385
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	714	5	420746 427198
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	716	5	420748 427197
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12NW (W)	717	5	419462 427828
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 132.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12NW (W)	717	5	419462 427828
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 258.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A19SW (NE)	721	5	420735 428285
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 176.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A19SW (NE)	721	5	420735 428285

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 169.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12NW (W)	721	5	419457 427820
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	722	5	420705 427144
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	726	5	420709 427143
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	732	5	420079 428485
53	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 33.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	738	5	420753 427170
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 156.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	746	5	420061 428495
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 2	A9NW (SE)	753	5	420742 427138
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	753	5	420742 427138
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	760	5	420752 427138

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 138.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9NW (SE)	766	5	420753 427130
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 101.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A17SE (NW)	767	5	419716 428352
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 170.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A17SE (NW)	767	5	419716 428352
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 173.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	802	5	419376 427647
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 119.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A19SE (NE)	811	5	420951 428144
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 366.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A7NW (SW)	815	5	419504 427265
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 74.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A17NE (NW)	845	5	419718 428447
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 37.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	849	5	419356 427503
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.1 Watercourse Level: Underground Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A19SE (NE)	853	5	421036 428072

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 201.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A19SE (NE)	869	5	421054 428071
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	870	5	419329 427525
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 86.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	882	5	420084 428639
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 255.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	882	5	420084 428639
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	883	5	419321 427502
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	886	5	419317 427502
73	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 133.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A9SW (SE)	886	5	420837 427045
74	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 209.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A17NE (NW)	911	5	419712 428521
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	942	5	420128 428706

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A18NW (N)	942	5	420128 428706
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 150.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Lodge Beck Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	973	5	419262 427393
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 158.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A12SW (W)	973	5	419262 427393
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 318.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kittle Point Beck Catchment Name: Aire and Calder Primacy: 1	A14NE (E)	974	5	421195 427988
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 28.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A14NE (E)	976	5	421201 427977
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A14NE (E)	988	5	421224 427932
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Aire and Calder Primacy: 1	A3NW (S)	998	5	420186 426674
83	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 133.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Wormalds Drain Catchment Name: Aire and Calder Primacy: 1	A15NW (E)	999	5	421239 427917

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	BGS Recorded Landfill Sites Site Name: off Hunsworth Lane East Location: Bierly, BRADFORD, West Yorkshire Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good	A17SW (NW)	795	-	419540 428216
85	Historical Landfill Sites Licence Holder: C T Light and Sons Location: Bierly, Bradford, West Yorkshire Name: Off Hunsworth Lane Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04156 First Input Date: 31st December 1967 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial and Commercial Waste, and Liquid Sludge EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 2989 Other Ref: 4700/1009, 4700/0090	A17SE (NW)	796	2	419542 428221
86	Historical Landfill Sites Licence Holder: J W Crowther and Son Location: Hunsworth Lane, Hunsworth, Cleckheaton Name: Land off Hunsworth Lane Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD35064 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: Not Supplied	A12SW (W)	831	2	419351 427607
	Local Authority Landfill Coverage Name: Kirklees Metropolitan Borough Council - Has not been able to supply Landfill data		0	6	420217 427722
87	Registered Waste Treatment or Disposal Sites Licence Holder: Johns Radio Licence Reference: 1108 Site Location: 84 Whitehall Road East, Birkenshaw, BRADFORD, West Yorkshire, BD11 2ER Operator Location: As Site Address Authority: Environment Agency - North East Region, Ridings Area Site Category: Scrapyard Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st February 1993 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Electronic Scrap Max.Storage In Licence Prohibited Waste: Poisonous, Noxious, Polluting Wastes	A14NW (NE)	531	2	420700 428020

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Lower Coal Measures Formation And South Wales Lower Coal Measures Formation (Undifferentiated)	A13NE (NE)	0	1	420217 427722
88	BGS Recorded Mineral Sites Site Name: Halfway House Mine Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256343 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	23	1	420264 427758
89	BGS Recorded Mineral Sites Site Name: Swincliffe Quarry Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72756 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lepton Edge Rock Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A13SW (S)	49	1	420211 427623
90	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256341 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (N)	70	1	420218 427838
91	BGS Recorded Mineral Sites Site Name: Swincliffe Coal Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72757 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	86	1	420123 427651
92	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73696 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	100	1	420337 427786

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73692 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	131	1	420138 427866
93	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73693 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	158	1	420090 427870
94	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256340 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (N)	140	1	420277 427902
94	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256339 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (N)	156	1	420269 427921
95	BGS Recorded Mineral Sites Site Name: Halfway House Colliery Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256342 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NW (N)	155	1	420193 427919
96	BGS Recorded Mineral Sites Site Name: Block Bed Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256338 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	244	1	420362 427975

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
97	BGS Recorded Mineral Sites Site Name: Oakroyd Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73779 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NW (W)	250	1	419926 427773
98	BGS Recorded Mineral Sites Site Name: Swincliffe Brick Field Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256346 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A13SE (SE)	273	1	420468 427544
99	BGS Recorded Mineral Sites Site Name: Block Bed Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73695 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	275	1	420439 427950
99	BGS Recorded Mineral Sites Site Name: Fleece Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256337 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	324	1	420471 427988
100	BGS Recorded Mineral Sites Site Name: Swincliffe Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256344 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13SE (SE)	304	1	420382 427420
101	BGS Recorded Mineral Sites Site Name: Bluehills Farm Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73691 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SE (W)	363	1	419833 427607

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	BGS Recorded Mineral Sites Site Name: Fleece Colliery Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73697 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	410	1	420527 428054
103	BGS Recorded Mineral Sites Site Name: Swincliffe Lower Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256345 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	411	1	420480 427361
104	BGS Recorded Mineral Sites Site Name: Birkenshaw Upper Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73780 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A14NW (E)	432	1	420680 427818
105	BGS Recorded Mineral Sites Site Name: The Parsonage Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73694 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A18SW (N)	460	1	420030 428182
106	BGS Recorded Mineral Sites Site Name: Upper Lodge Range Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73690 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SE (W)	480	1	419694 427698
107	BGS Recorded Mineral Sites Site Name: Primrose Hill Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72759 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lepton Edge Rock Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	619	1	419768 427240

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
107	BGS Recorded Mineral Sites Site Name: Primrose Hill Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72760 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	637	1	419778 427205
108	BGS Recorded Mineral Sites Site Name: Birkensahw Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256336 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	635	1	420790 428071
109	BGS Recorded Mineral Sites Site Name: New House Location: Wheatleys Farm, Leeds, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73715 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	659	1	420530 427095
110	BGS Recorded Mineral Sites Site Name: Birkenshaw Lower Colliery Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 256347 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A14SE (E)	689	1	420941 427621
111	BGS Recorded Mineral Sites Site Name: Upper Lodge Range Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73687 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	716	1	419513 428013
112	BGS Recorded Mineral Sites Site Name: Primrose Hill Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73708 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	751	1	419669 427152

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	BGS Recorded Mineral Sites Site Name: Upper Lodge Range Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73688 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12NW (W)	780	1	419432 427979
114	BGS Recorded Mineral Sites Site Name: Upper Lodge Range Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73689 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12NW (W)	793	1	419381 427786
115	BGS Recorded Mineral Sites Site Name: Birkenshaw Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 49325 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	800	1	420176 428567
116	BGS Recorded Mineral Sites Site Name: Wheatley Hall Location: Gomersal, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73713 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	804	1	420799 427124
117	BGS Recorded Mineral Sites Site Name: Upper Lodge Range Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73686 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	805	1	419459 428107
118	BGS Recorded Mineral Sites Site Name: Primrose Hill Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73709 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	843	1	419582 427111

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
119	BGS Recorded Mineral Sites Site Name: Drub Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73710 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8SW (S)	916	1	419965 426790
120	BGS Recorded Mineral Sites Site Name: Hunsworth Upper Lane Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72532 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	919	1	419475 428333
120	BGS Recorded Mineral Sites Site Name: Hunsworth Upper Lane Pit Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 72532 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	919	1	419475 428333
121	BGS Recorded Mineral Sites Site Name: Wheatley Hall Location: Gomersal, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73712 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	936	1	421086 427282
121	BGS Recorded Mineral Sites Site Name: Breaks Location: Oakwell, Leeds, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73716 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	951	1	421119 427313
122	BGS Recorded Mineral Sites Site Name: Cross Pit Location: East Bierley, Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 49100 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	956	1	419811 428627

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
122	BGS Recorded Mineral Sites Site Name: Cross Pit Location: East Bierley, Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 49100 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	956	1	419811 428627
123	BGS Recorded Mineral Sites Site Name: Thredland Location: Birkenshaw, Bradford, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 49134 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A23SE (N)	972	1	420265 428741
124	BGS Recorded Mineral Sites Site Name: Primrose Hill Location: Drub, Cleckheaton, West Yorkshire Source: British Geological Survey, National Geoscience Information Service Reference: 73711 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Coal Measures Group Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A3NW (S)	985	1	420011 426708
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (NE)	0	7	420217 427722
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (NE)	0	-	420217 427722
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	116	1	420108 427833
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	177	1	420000 427772
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	189	1	420099 427519
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	201	1	420000 427837
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	201	1	420077 427523
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	225	1	420120 427466
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	241	1	419986 427578
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	247	1	419965 427603
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	420223 427752
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	173	1	420000 427722
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	174	1	420000 427716
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	177	1	420060 427873
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	189	1	420099 427519
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	203	1	420000 427842
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	420217 427722

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	Contemporary Trade Directory Entries Name: Crownham Ltd Location: 15, Whitehall Road West, Birkenshaw, Bradford, West Yorkshire, BD11 2LS Classification: Carpets & Rugs - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (NE)	10	-	420249 427755
126	Contemporary Trade Directory Entries Name: West Yorkshire Mini Mix Location: Heathfield Farm, Fieldhead Lane, Birkenshaw, Bradford, West Yorkshire, BD11 2LZ Classification: Concrete & Mortar Ready Mixed Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (S)	48	-	420244 427636
127	Contemporary Trade Directory Entries Name: R A Lawrence Location: 12, Grove Terrace, Birkenshaw, Bradford, West Yorkshire, BD11 2LY Classification: Asphalt & Coated Macadam Laying Contractors Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (E)	173	-	420422 427780
127	Contemporary Trade Directory Entries Name: R A Lawrence Location: 15a, Turnpike Close, Birkenshaw, Bradford, West Yorkshire, BD11 2LW Classification: Asphalt & Coated Macadam Laying Contractors Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (E)	189	-	420440 427775
128	Contemporary Trade Directory Entries Name: A B Blinds & Curtains Location: Churchill Hall, Whitehall Road East, Birkenshaw, BRADFORD, West Yorkshire, BD11 2NA Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (NE)	175	-	420387 427850
128	Contemporary Trade Directory Entries Name: Carlton Garage Service Location: 3 Whitehall Rd East, Birkenshaw, Bradford, West Yorkshire, BD11 2EQ Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	183	-	420374 427884
129	Contemporary Trade Directory Entries Name: Wymas Fleet Care Location: 21 Oakroyd Dr, Birkenshaw, Bradford, West Yorkshire, BD11 2ED Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A13NW (N)	189	-	420194 427954
130	Contemporary Trade Directory Entries Name: Whitehall Service Station Location: Whitehall Road East, Birkenshaw, BRADFORD, West Yorkshire, BD11 2EJ Classification: Petrol Filling Stations Status: Active Positional Accuracy: Automatically positioned to the address	A13NE (NE)	312	-	420513 427905
130	Contemporary Trade Directory Entries Name: T F Tinting Location: KING STREET MOTORS, WHITEHALL ROAD EAST, BIRKENSRAW, BRADFORD, BD11 2EJ Classification: Window Tinting Status: Active Positional Accuracy: Automatically positioned to the address	A13NE (NE)	331	-	420538 427901
130	Contemporary Trade Directory Entries Name: King Street Motors Location: Bradford, BD11 2EJ Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A13NE (NE)	331	-	420538 427901
131	Contemporary Trade Directory Entries Name: M L Logistics Location: 2, SWINROYD CLOSE, BIRKENSRAW, BRADFORD, BD11 2LX Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address	A18SE (NE)	511	-	420515 428195

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
132	Contemporary Trade Directory Entries Name: Living Essence Location: 1, Whitehall Grove, Birkenshaw, Bradford, West Yorkshire, BD11 2LE Classification: Candle Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address	A19SW (NE)	516	-	420645 428079
133	Contemporary Trade Directory Entries Name: S M K Textiles Location: 7, Dewsbury Road, Gomersal, Cleckheaton, West Yorkshire, BD19 4AX Classification: Textile Manufacturing Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (SE)	534	-	420515 427232
134	Contemporary Trade Directory Entries Name: B C G Facilities Location: 40, Kingsley Crescent, Birkenshaw, BRADFORD, West Yorkshire, BD11 2NL Classification: Electrical Engineers Status: Active Positional Accuracy: Automatically positioned to the address	A14NW (E)	535	-	420794 427723
135	Contemporary Trade Directory Entries Name: Arriva Bus & Coach Location: Lodge Garage, Whitehall Road West, Gomersal, Cleckheaton, West Yorkshire, BD19 4BJ Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (SW)	577	-	419674 427444
136	Contemporary Trade Directory Entries Name: G & B Fletcher Haulage Ltd Location: 33, Elm Court, Birkenshaw, Bradford, BD11 2PF Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	623	-	420839 427493
137	Contemporary Trade Directory Entries Name: Kemp-Craft Location: 525, Bradford Road, Birkenshaw, Bradford, West Yorkshire, BD11 2AQ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	672	-	420216 428441
137	Contemporary Trade Directory Entries Name: Discount Motors Location: 527 Bradford Rd, Birkenshaw, Bradford, West Yorkshire, BD11 2AQ Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	690	-	420229 428459
137	Contemporary Trade Directory Entries Name: Discount Motors Location: 527 Bradford Rd, Birkenshaw, Bradford, West Yorkshire, BD11 2AQ Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	690	-	420229 428459
138	Contemporary Trade Directory Entries Name: M Wood Location: 64, Old Lane, Birkenshaw, Bradford, West Yorkshire, BD11 2JX Classification: Dairies Status: Inactive Positional Accuracy: Automatically positioned to the address	A19SW (NE)	692	-	420693 428285
139	Contemporary Trade Directory Entries Name: Cleancare Hygiene Ltd Location: 27A, BIRKSLAND MOOR, BIRKENSRAW, BRADFORD, BD11 2PA Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address	A14SE (E)	712	-	420930 427481
139	Contemporary Trade Directory Entries Name: Xtract Location: 29, Birksland Moor, Birkenshaw, Bradford, West Yorkshire, BD11 2PA Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SE (E)	744	-	420955 427457

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
140	Contemporary Trade Directory Entries Name: Mayfair Artist Location: 8, Town Street, Birkenshaw, Bradford, West Yorkshire, BD11 2HX Classification: Toys, Games & Sporting Goods - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	752	-	420315 428516
141	Contemporary Trade Directory Entries Name: Regency Cleaning Service Nationwide Ltd Location: 167, Drub Lane, Cleckheaton, West Yorkshire, BD19 4BZ Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address	A7SE (SW)	832	-	419717 427003
142	Contemporary Trade Directory Entries Name: R M Clough Agri Services Location: 180, Drub Lane, Cleckheaton, West Yorkshire, BD19 4BU Classification: Agricultural Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SW (S)	861	-	419939 426855
142	Contemporary Trade Directory Entries Name: Andrew Clough Location: 180, Drub Lane, Cleckheaton, West Yorkshire, BD19 4BU Classification: Dairies Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SW (S)	861	-	419939 426855
143	Contemporary Trade Directory Entries Name: Jack Hughes Vehicle Holdings Ltd Location: Whitehall Road West, Gomersal, Cleckheaton, West Yorkshire, BD19 4BL Classification: Commercial Vehicle Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NW (SW)	893	-	419378 427327
144	Contemporary Trade Directory Entries Name: N J Cleaning Services Location: 5, Bank View, Birkenshaw, Bradford, West Yorkshire, BD11 2AG Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address	A18NE (N)	934	-	420222 428703
145	Fuel Station Entries Name: Whitehall Service Station Location: Whitehall Road East, Birkenshaw, Bradford, West Yorkshire, BD11 2EJ Brand: Unbranded Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	311	-	420513 427904

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
146	Areas of Adopted Green Belt Authority: Kirklees Metropolitan Borough Council Plan Name: Kirklees Unitary Development Plan Status: Adopted Plan Date: 1st March 1999	A13SW (W)	107	9	420078 427685
147	Areas of Unadopted Green Belt Authority: Kirklees Metropolitan Borough Council Plan Name: Kirklees Local Plan Status: Submission Draft Plan Date: 25th April 2017	A13SW (SW)	167	9	420095 427550
148	Nitrate Vulnerable Zones Name: Spen Beck From Source To River Calder Nvz Description: Surface Water Source: Environment Agency, Head Office	A13NE (NE)	0	4	420217 427722

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Bradford Metropolitan City Council - Environmental Health Environment Agency - Head Office Calderdale Metropolitan Borough Council - Environmental Health Kirklees Metropolitan Borough Council - Planning Services Leeds City Council - Planning and Development	January 2020 June 2020 October 2017 October 2017 October 2017	Annual Rolling Update Annually Annual Rolling Update Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - North East Region	April 2023	Quarterly
Enforcement and Prohibition Notices Environment Agency - North East Region	March 2013	
Integrated Pollution Controls Environment Agency - North East Region	January 2009	
Integrated Pollution Prevention And Control Environment Agency - North East Region	January 2023	Quarterly
Local Authority Integrated Pollution Prevention And Control Kirklees Metropolitan Borough Council - Environmental Health Department Leeds City Council - Neighbourhoods Department Bradford Metropolitan City Council - Environmental Health Calderdale Metropolitan Borough Council - Environmental Health	April 2014 November 2012 October 2014 October 2014	Variable Variable Variable Variable
Local Authority Pollution Prevention and Controls Kirklees Metropolitan Borough Council - Environmental Health Department Leeds City Council - Neighbourhoods Department Bradford Metropolitan City Council - Environmental Health Calderdale Metropolitan Borough Council - Environmental Health	April 2014 November 2012 October 2014 October 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Kirklees Metropolitan Borough Council - Environmental Health Department Leeds City Council - Neighbourhoods Department Bradford Metropolitan City Council - Environmental Health Calderdale Metropolitan Borough Council - Environmental Health	April 2014 November 2012 October 2014 October 2014	Variable Variable Variable Variable
Nearest Surface Water Feature Ordnance Survey	April 2023	
Pollution Incidents to Controlled Waters Environment Agency - North East Region	December 1998	
Prosecutions Relating to Authorised Processes Environment Agency - North East Region	July 2015	
Prosecutions Relating to Controlled Waters Environment Agency - North East Region	March 2013	
Registered Radioactive Substances Environment Agency - North East Region	June 2016	As notified
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	April 2012	
River Quality Chemistry Sampling Points Environment Agency - Head Office	April 2012	
Substantiated Pollution Incident Register Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	April 2023 April 2023	Quarterly Quarterly
Water Abstractions Environment Agency - North East Region	April 2023	Quarterly
Water Industry Act Referrals Environment Agency - North East Region	October 2017	

Agency & Hydrological	Version	Update Cycle
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	September 2022	Bi-Annually
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2023	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2023	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2023	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	February 2023	Quarterly
Flood Defences Environment Agency - Head Office	August 2022	Quarterly
OS Water Network Lines Ordnance Survey	April 2023	Quarterly
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites Environment Agency - Head Office	March 2023	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - North East Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	January 2023 January 2023	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	January 2023 January 2023	Quarterly Quarterly
Local Authority Landfill Coverage Bradford Metropolitan City Council - Planning Department Calderdale Metropolitan Borough Council - Environmental Health Kirklees Metropolitan Borough Council - Planning Services Leeds City Council - Planning and Development	February 2003 February 2003 February 2003 February 2003	Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Bradford Metropolitan City Council - Planning Department Calderdale Metropolitan Borough Council - Environmental Health Kirklees Metropolitan Borough Council - Planning Services Leeds City Council - Planning and Development	October 2018 October 2018 October 2018 October 2018	
Registered Landfill Sites Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	March 2006 March 2006	Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	April 2018 April 2018	
Registered Waste Treatment or Disposal Sites Environment Agency - North East Region - Ridings Area Environment Agency - North East Region - Yorkshire Area	June 2015 June 2015	
Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	March 2023	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements Kirklees Metropolitan Borough Council - Planning Services Bradford Metropolitan City Council - Planning Department Calderdale Metropolitan Borough Council Leeds City Council - Planning and Development	August 2015 February 2016 February 2016 February 2016	Variable Variable Variable Variable
Planning Hazardous Substance Consents Kirklees Metropolitan Borough Council - Planning Services Bradford Metropolitan City Council - Planning Department Calderdale Metropolitan Borough Council Leeds City Council - Planning and Development	August 2015 February 2016 February 2016 February 2016	Variable Variable Variable Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	June 2023	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	September 2022	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	September 2022	Annually
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	April 2023	Quarterly
Fuel Station Entries Catalist Ltd - Experian	June 2023	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Underground Electrical Cables National Grid	February 2023	Bi-Annually

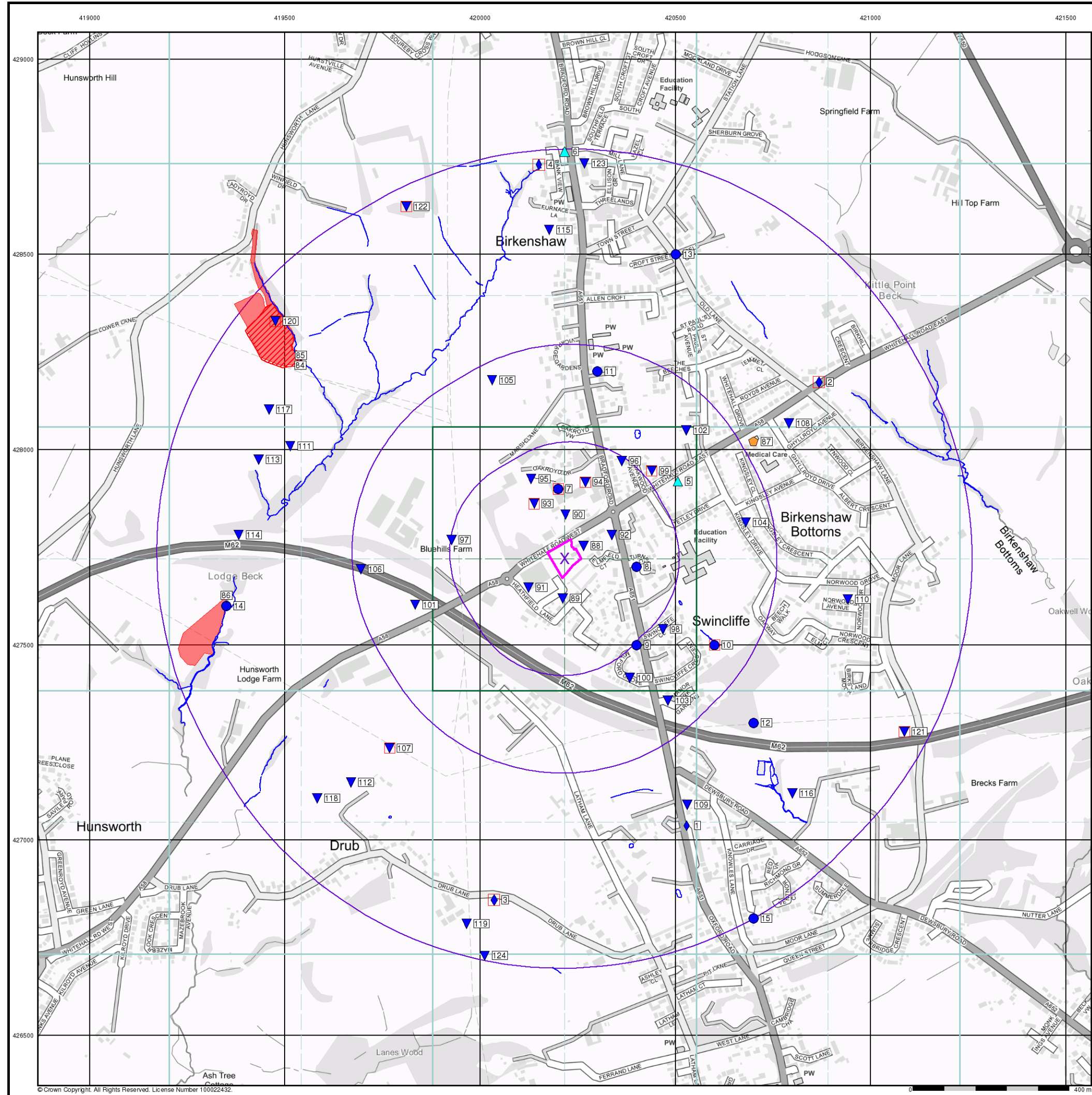
Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	April 2023	Bi-Annually
Areas of Adopted Green Belt Bradford Metropolitan City Council Calderdale Metropolitan Borough Council Kirklees Metropolitan Borough Council Leeds City Council	July 2022 July 2022 July 2022 July 2022	Quarterly Quarterly Quarterly Quarterly
Areas of Unadopted Green Belt Bradford Metropolitan City Council Calderdale Metropolitan Borough Council Kirklees Metropolitan Borough Council Leeds City Council	July 2022 July 2022 July 2022 July 2022	Quarterly Quarterly Quarterly Quarterly
Areas of Outstanding Natural Beauty Natural England	April 2023	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	May 2023	Not Applicable
Local Nature Reserves Natural England	March 2023	Bi-Annually
Marine Nature Reserves Natural England	April 2023	Bi-Annually
National Nature Reserves Natural England	February 2023	Bi-Annually
National Parks Natural England	February 2018	Bi-Annually
Nitrate Sensitive Areas Natural England	April 2023	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA) Environment Agency - Head Office	April 2016 March 2023	Bi-Annually
Ramsar Sites Natural England	March 2023	Bi-Annually
Sites of Special Scientific Interest Natural England	March 2023	Bi-Annually
Special Areas of Conservation Natural England	April 2023	Bi-Annually
Special Protection Areas Natural England	April 2023	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

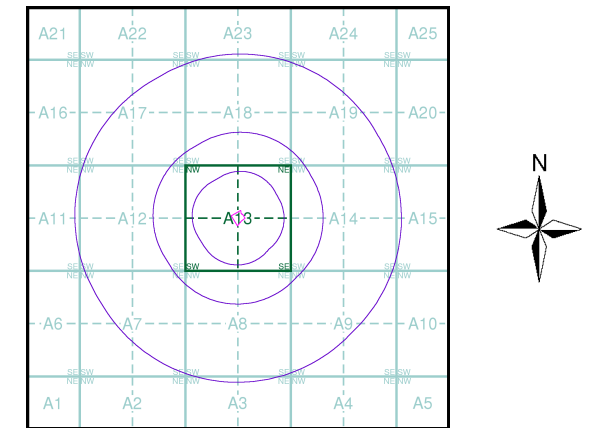
Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	Kirklees Metropolitan Borough Council - Environmental Health Department West Riding House, 9 Manchester Road, Huddersfield, West Yorkshire, HD1 3HH	Telephone: 01484 221000 Email: customer.relations@kirklees.gov.uk Website: www.kirklees.gov.uk
4	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	Kirklees Metropolitan Borough Council - Planning Services PO BOX B93, Civic Centre III, Off Market Street, Huddersfield, West Yorkshire, HD1 2JR	Telephone: 01484 221000 Fax: 01484 221613 Website: www.kirklees.gov.uk
7	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
9	Kirklees Metropolitan Borough Council Town Hall, Civic Centre, Huddersfield, West Yorkshire, HD1 2TA	Telephone: 01484 221000 Fax: 01484 442768 Website: www.kirklees.gov.uk
10	Leeds City Council Civic Hall, Leeds, West Yorkshire, LS1 1UR	Telephone: 0113 234 8080 Fax: 0113 242 1321 Website: www.leeds.gov.uk
11	Bradford Metropolitan City Council City Hall, Bradford, West Yorkshire, BD1 1HY	Telephone: 01274 432111 Fax: 01274 752045 Website: www.bradford.gov.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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

Site Sensitivity Map - Slice A



Order Details

Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details
 Site at, Whitehall Road West, Birkenshaw, Kirklees



ARP GEOTECHNICAL LTD

Industrial Land Use Map

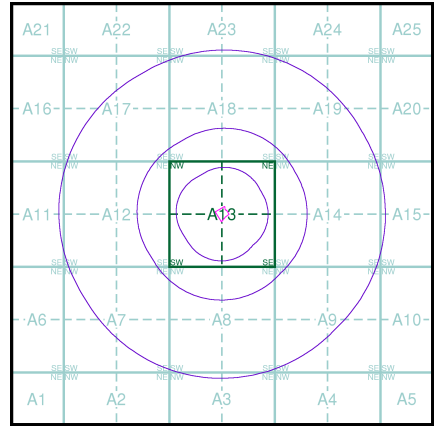
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

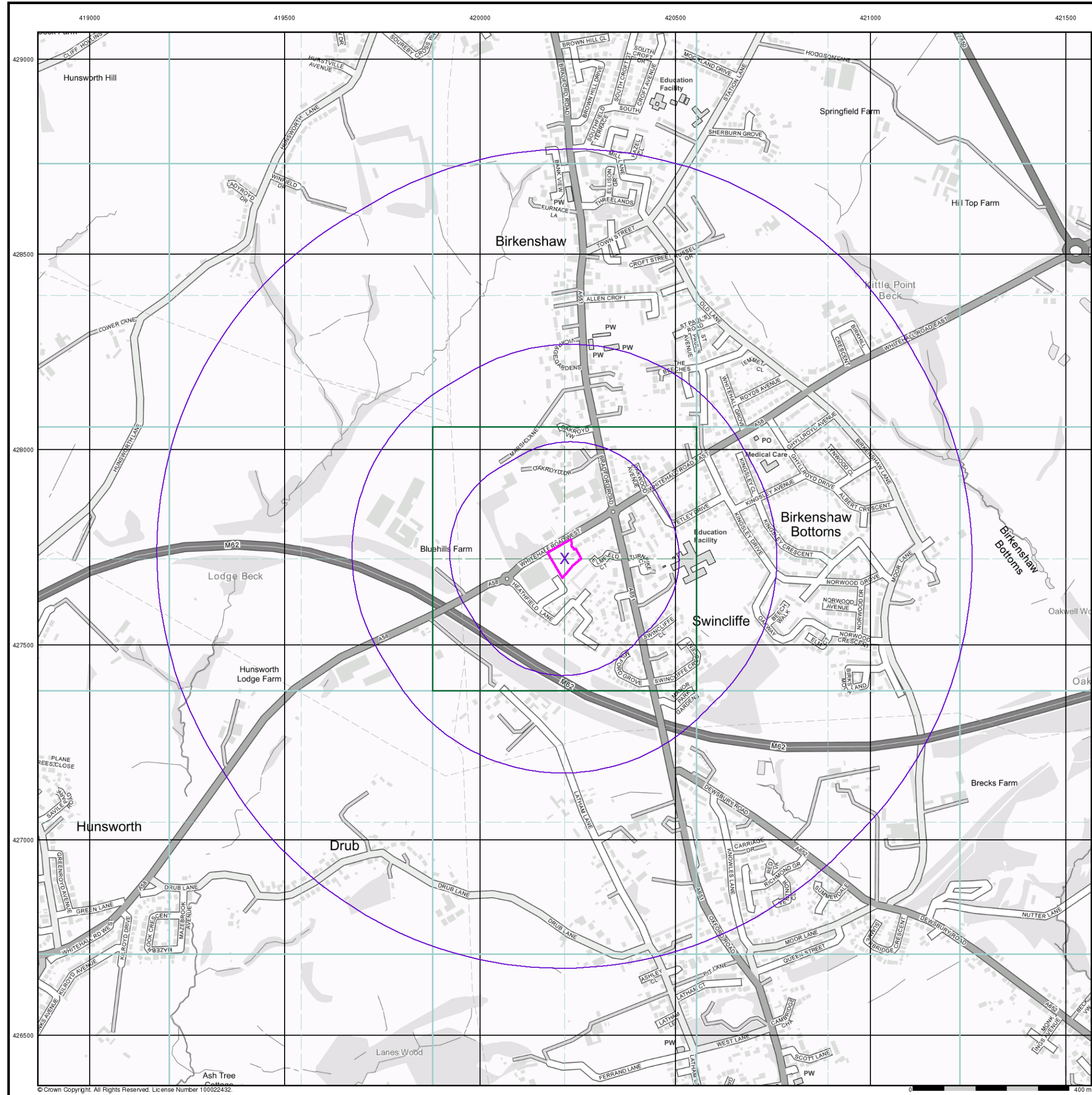
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Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



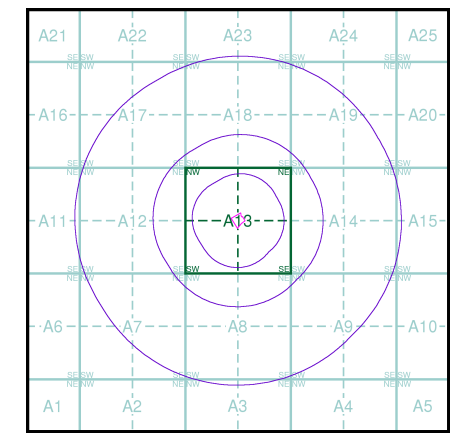
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



- General**
- Specified Site
 - Specified Buffer(s)
 - X Bearing Reference Point

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

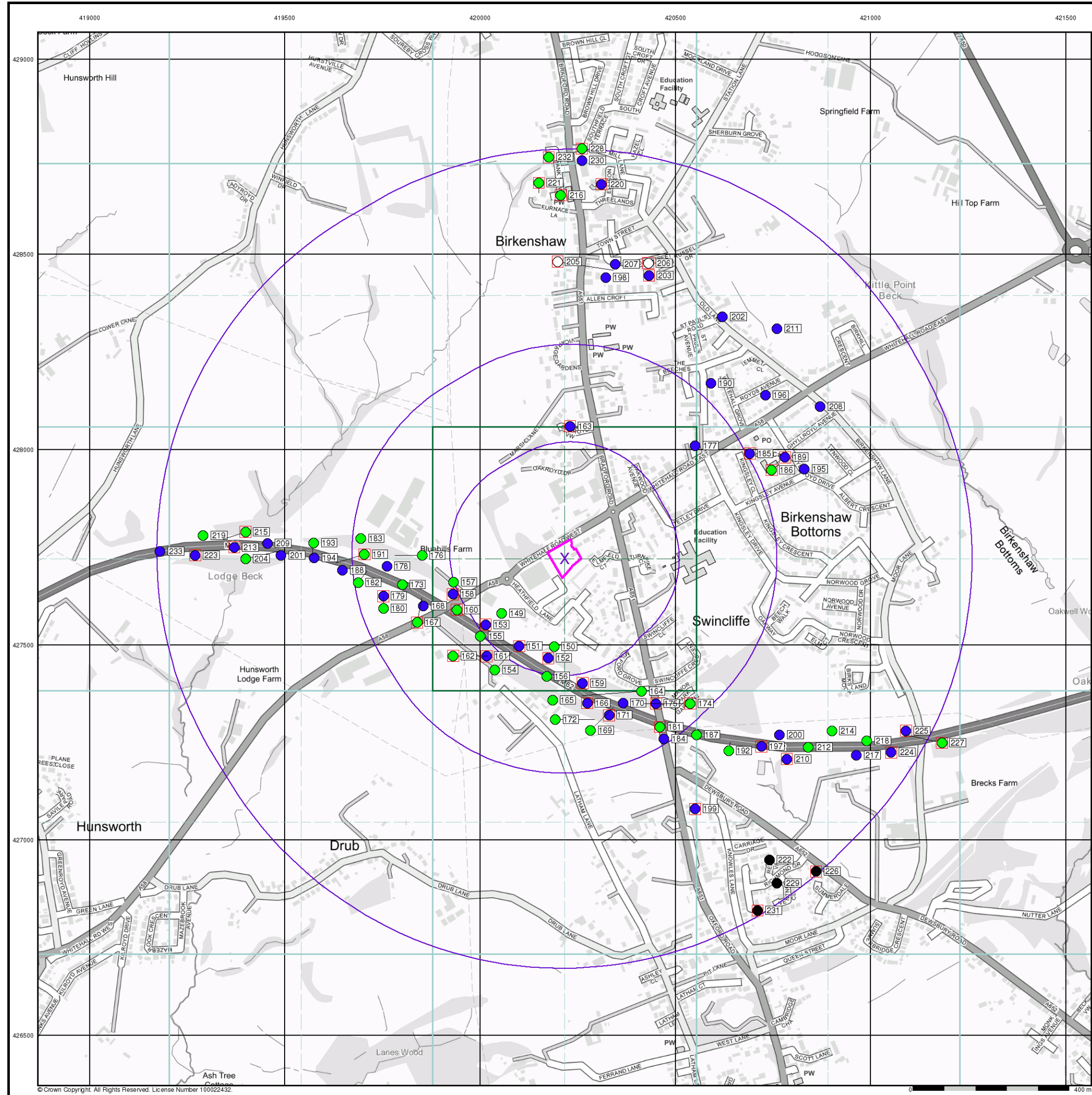
Flood Map - Slice A



Order Details

Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details
 Site at, Whitehall Road West, Birkenshaw, Kirklees



General

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

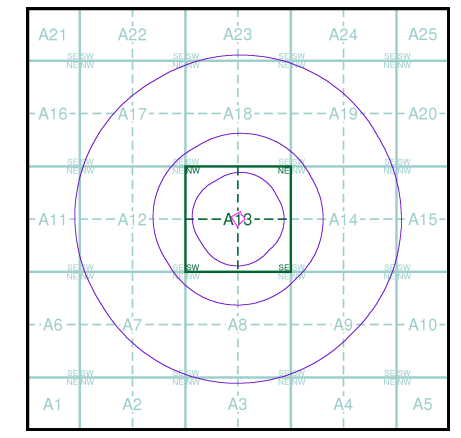
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

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

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A

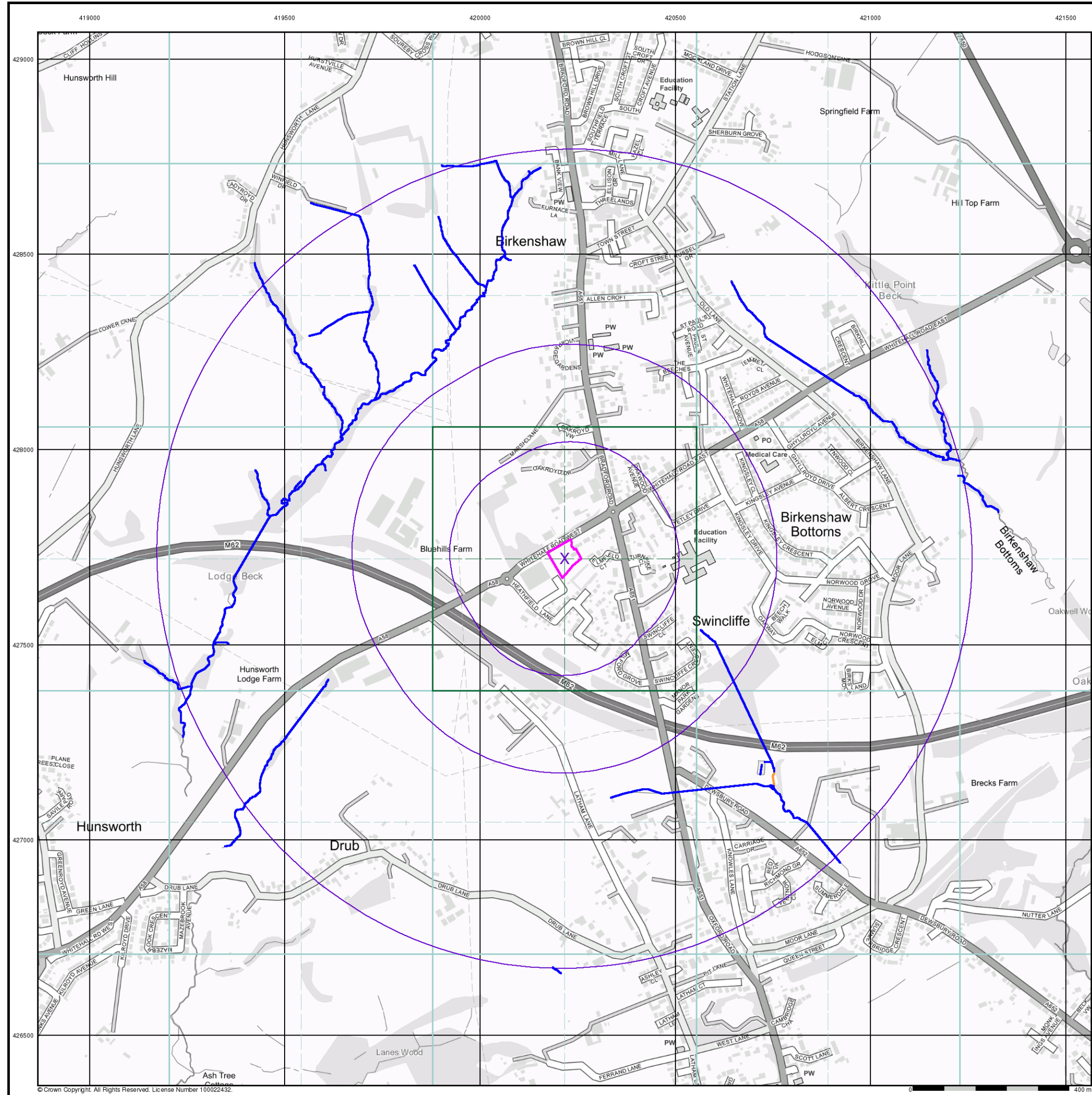


Order Details

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 Customer Ref: ORH/20
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 Slice: A
 Site Area (Ha): 0.43
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Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



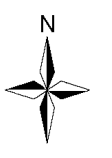
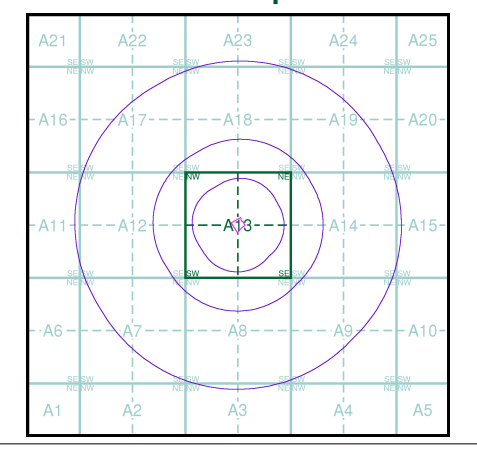
General

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

OS Water Network Data

- Canal
- Drain
- Foreshore
- Marsh
- Tidal River
- Inland River
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

OS Water Network Map - Slice A



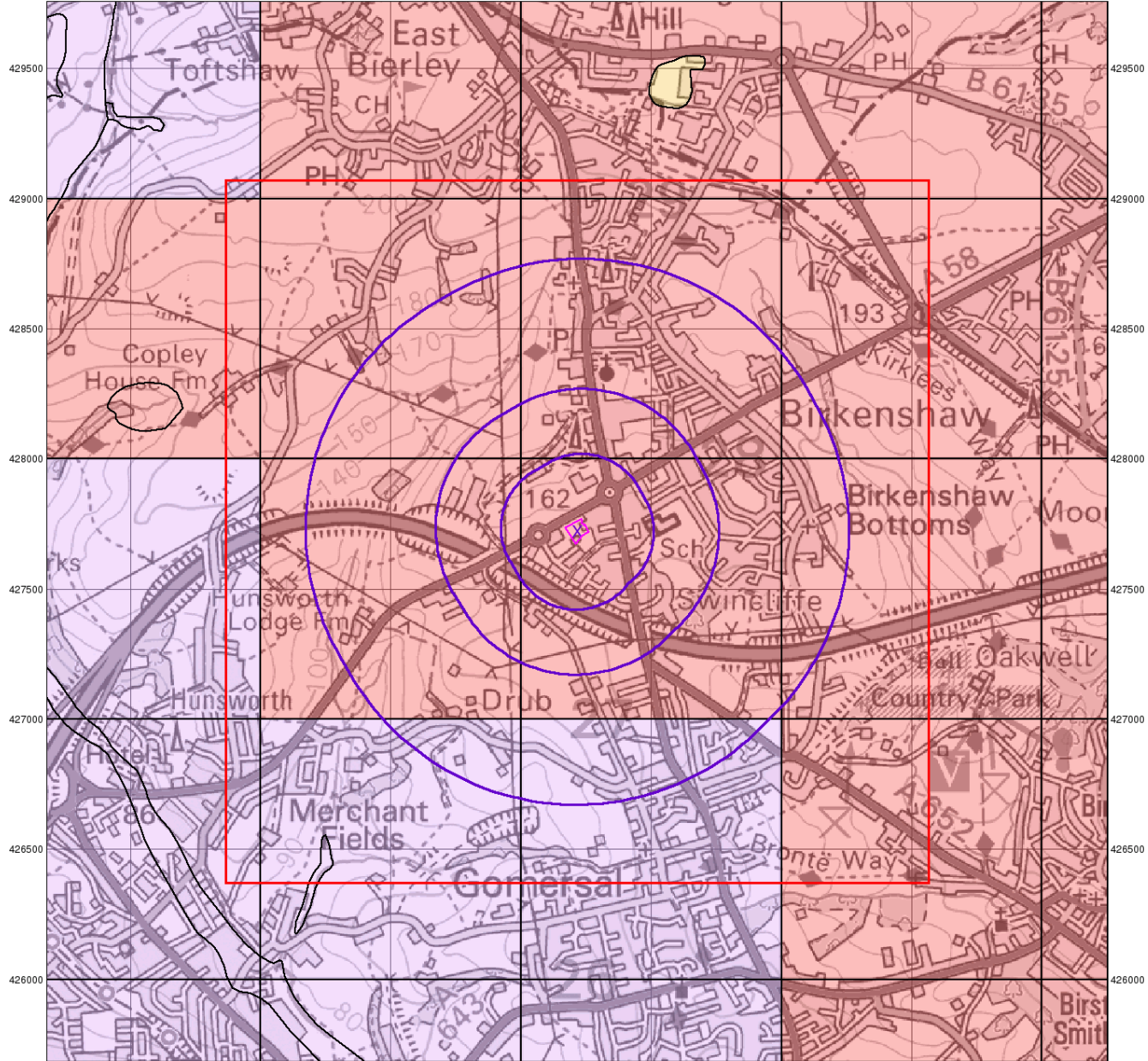
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 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees

418500 419000 419500 420000 420500 421000 421500 422000



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0 1 km



Groundwater Vulnerability

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

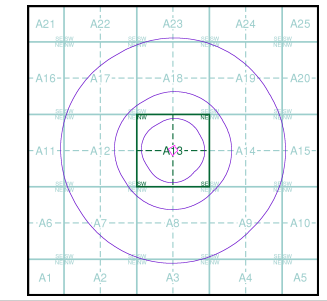
Bedrock Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer
- Unproductive Aquifer
- Soluble Rock

Superficial Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

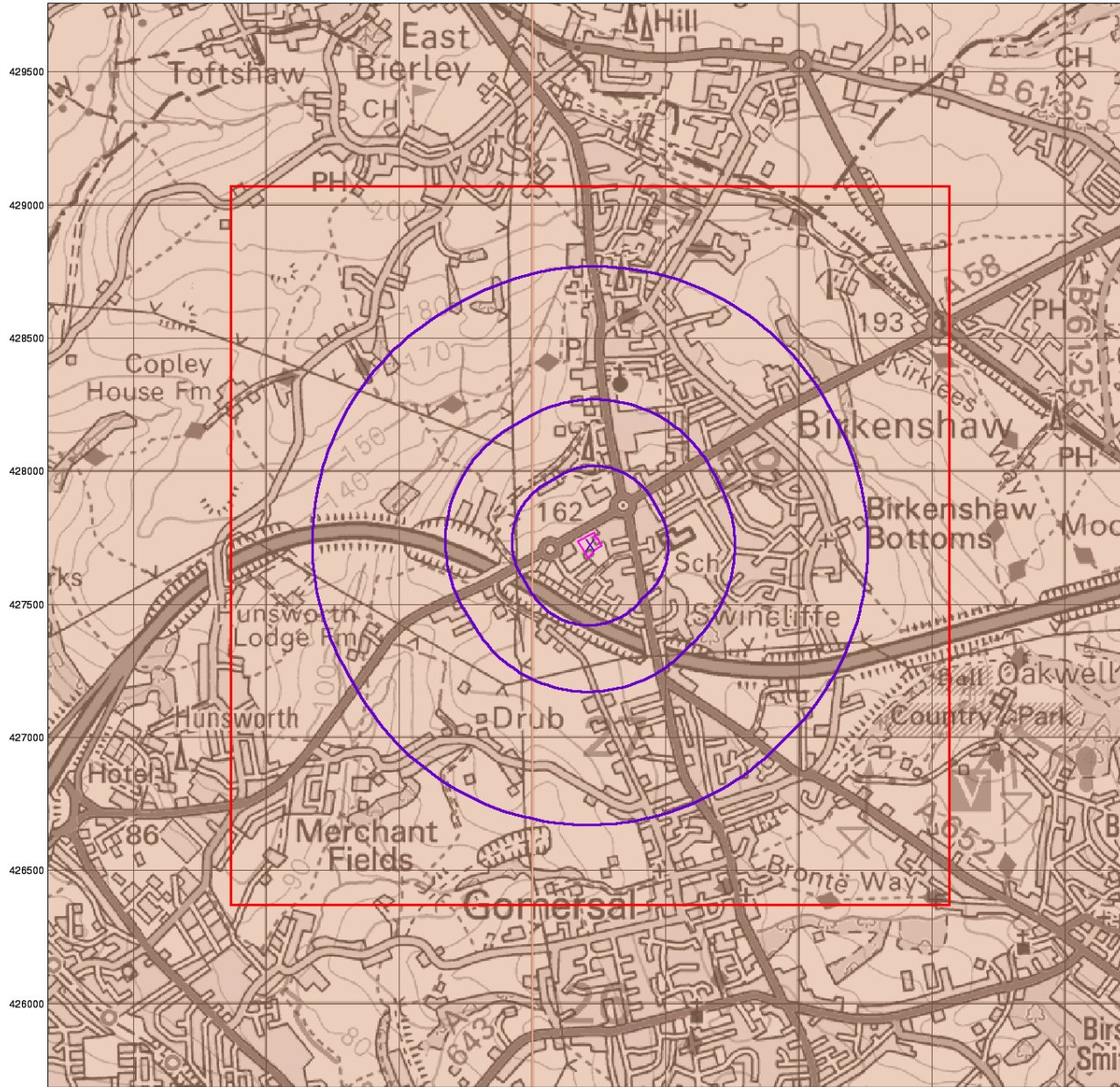
Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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 Web: www.envirocheck.co.uk

418500 419000 419500 420000 420500 421000 421500 422000



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0 1 km



Bedrock Aquifer Designation

General

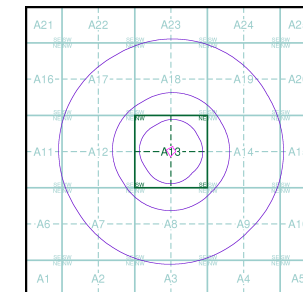
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

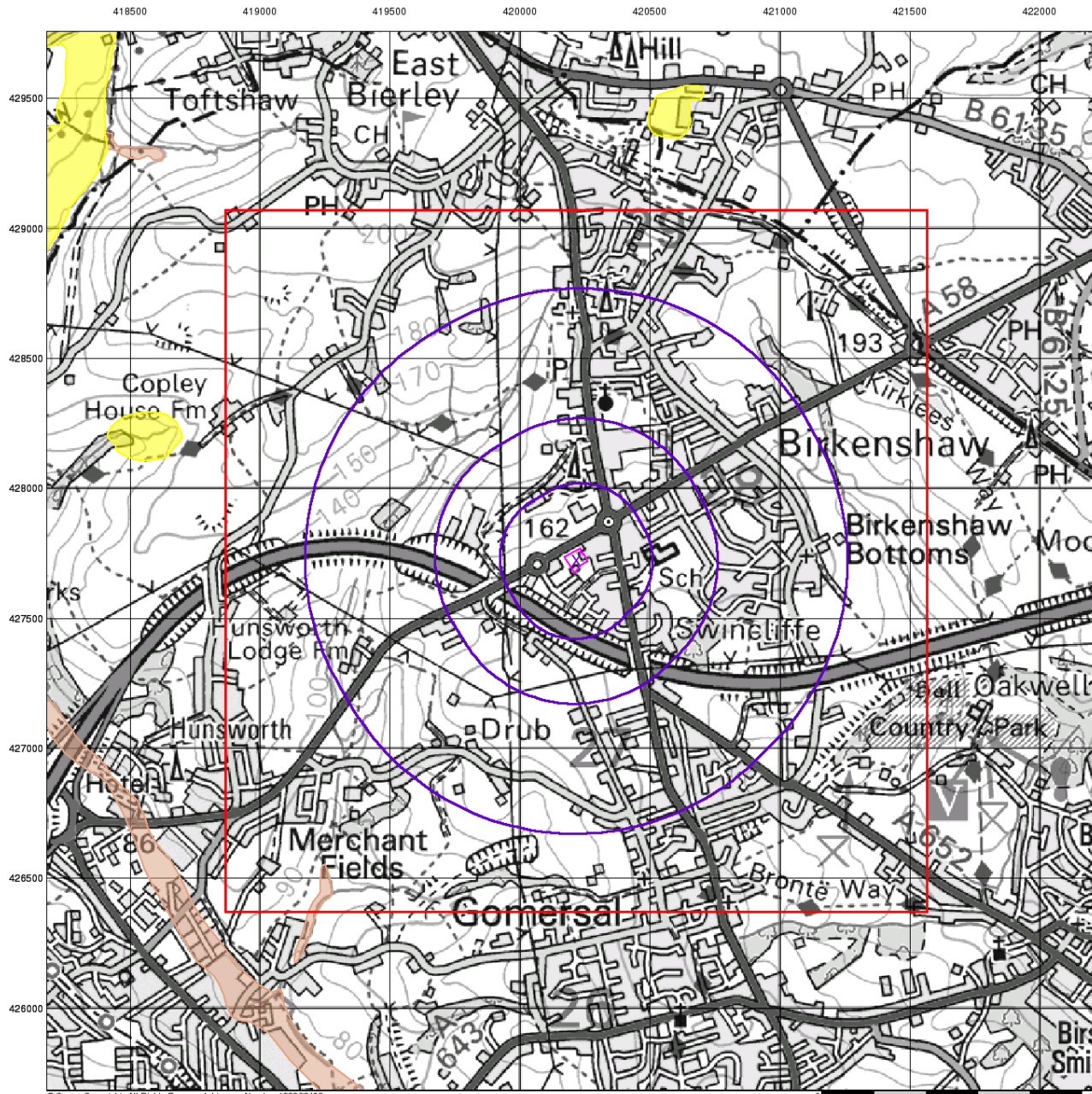
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 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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



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Superficial Aquifer Designation

General

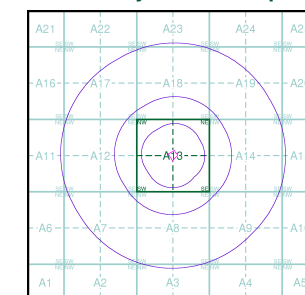
- ◆ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- B Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

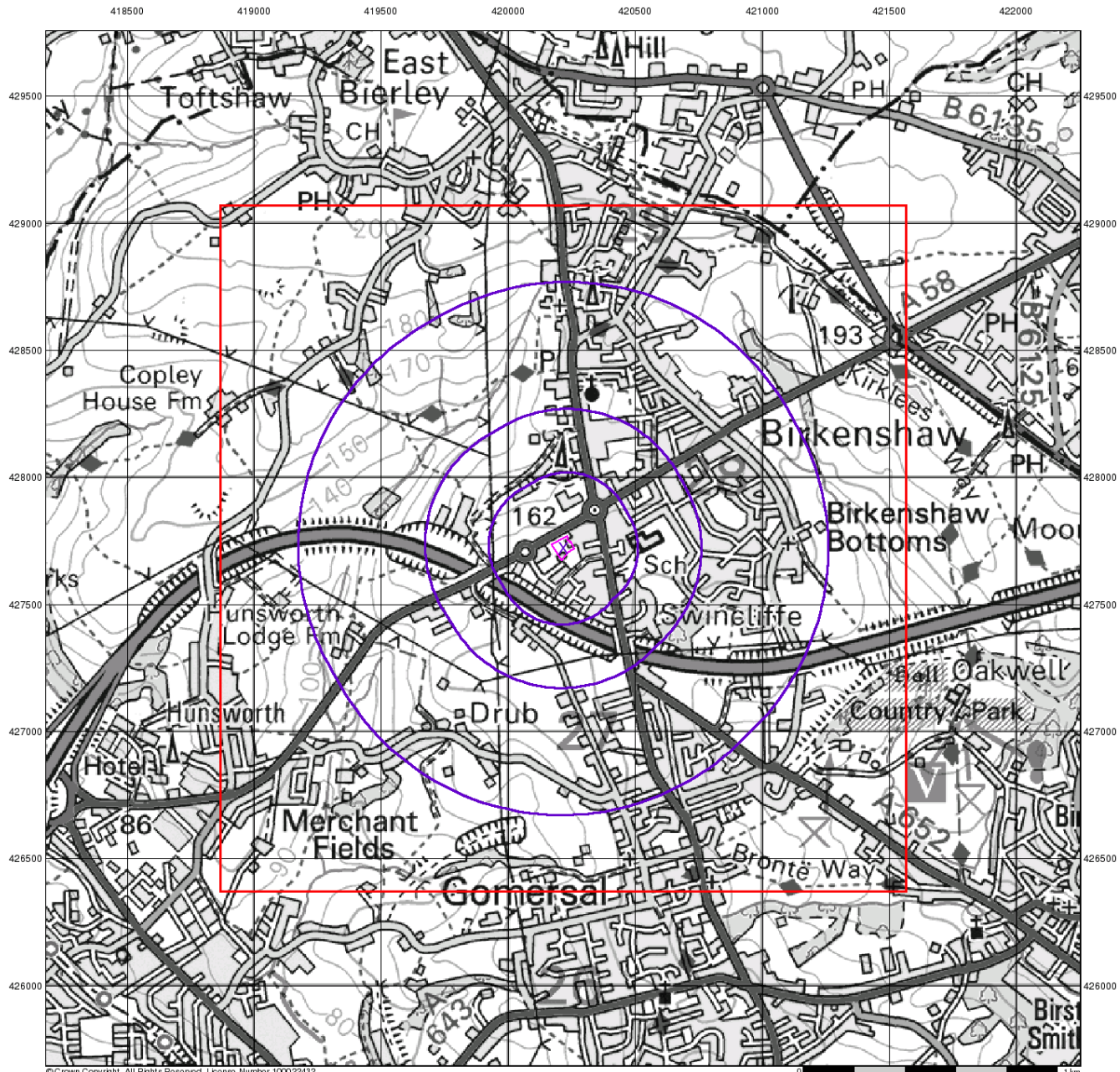
Order Number: 313377718_1_1
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 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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



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Source Protection Zones

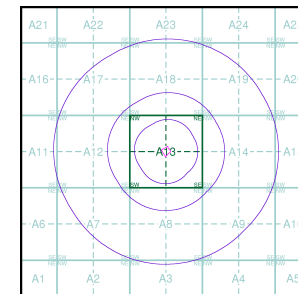
General

- ◆ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



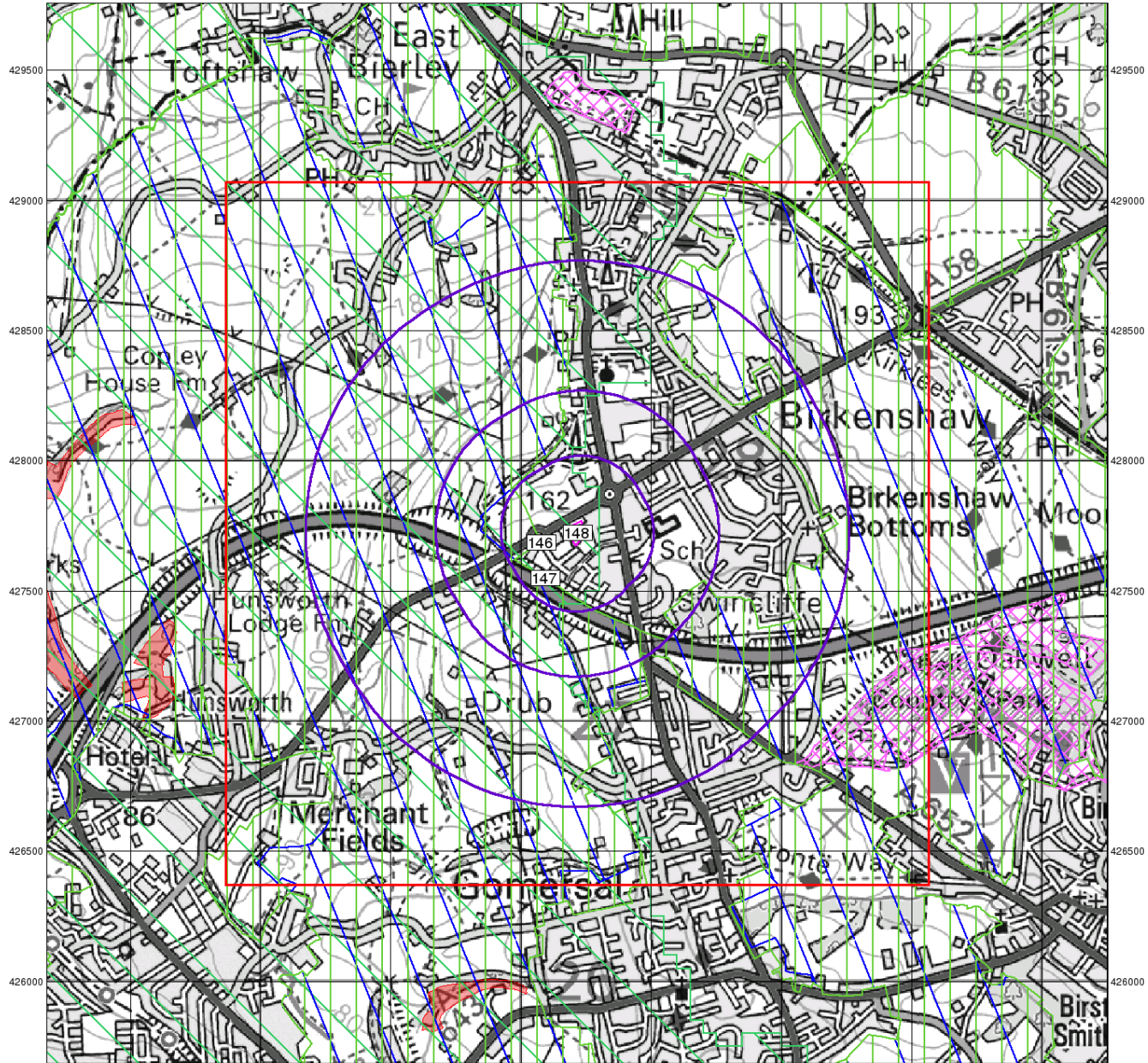
Order Details

Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees

418500 419000 419500 420000 420500 421000 421500 422000



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Sensitive Land Uses

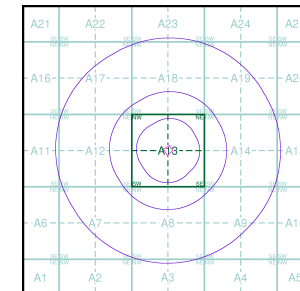
General

- ◇ Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- | | |
|--|--|
| Ancient Woodland | National Park |
| Area of Adopted Green Belt | Nitrate Sensitive Area |
| Area of Unadopted Green Belt | Nitrate Vulnerable Zone |
| Area of Outstanding Natural Beauty | Ramsar Site |
| Environmentally Sensitive Area | Site of Special Scientific Interest |
| Forest Park | Special Area of Conservation |
| Local Nature Reserve | Special Protection Area |
| Marine Nature Reserve | World Heritage Sites |
| National Nature Reserve | |

Site Sensitivity Context Map - Slice A

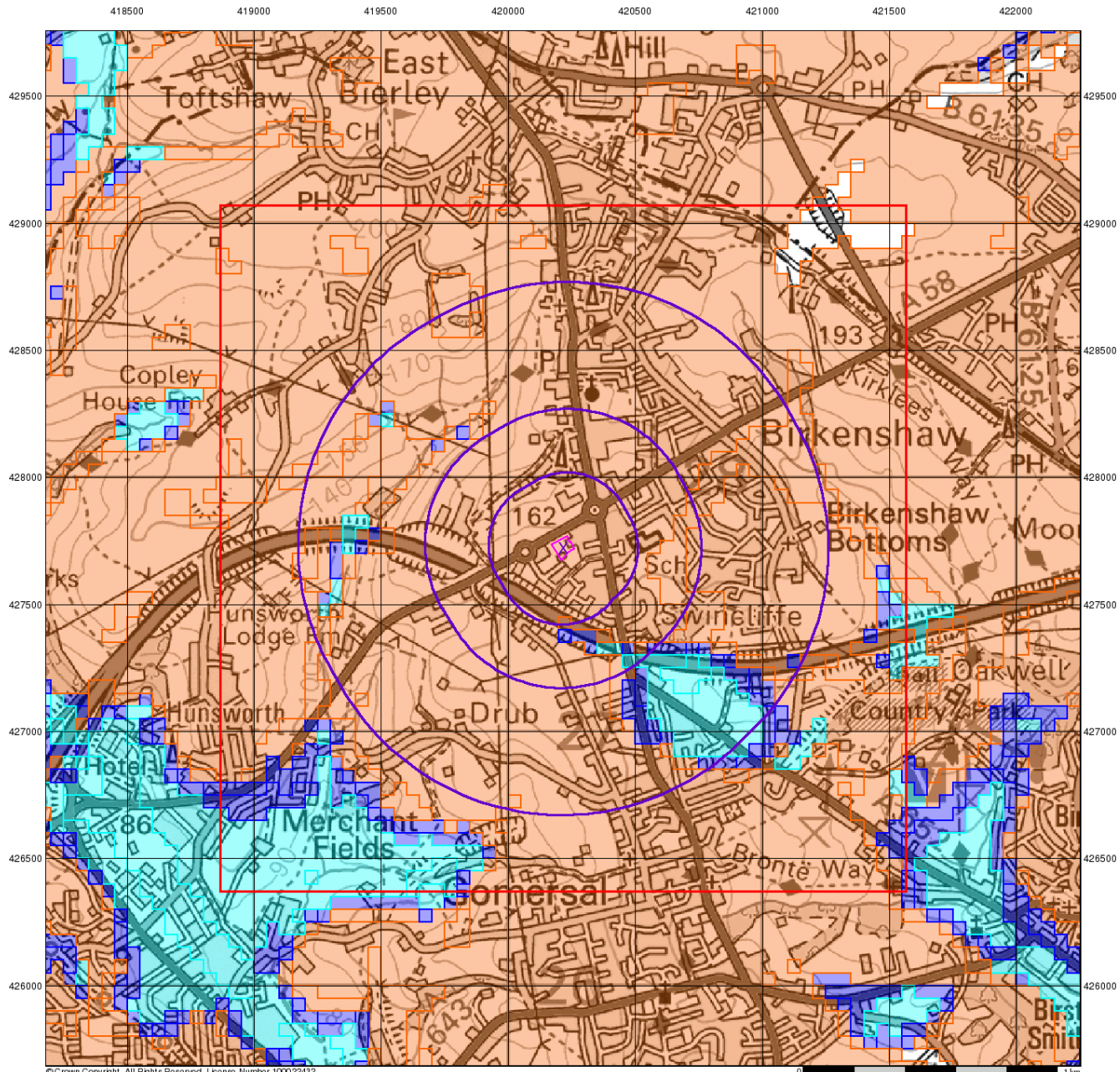


Order Details

Order Number: 313377718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees



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BGS Flood GFS Data

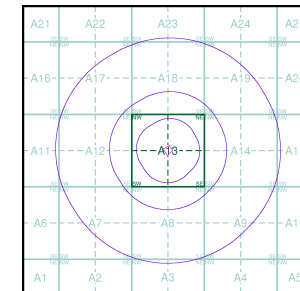
General

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

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 31337718_1_1
 Customer Ref: ORH/20
 National Grid Reference: 420220, 427720
 Slice: A
 Site Area (Ha): 0.43
 Search Buffer (m): 1000

Site Details

Site at, Whitehall Road West, Birkenshaw, Kirklees

APPENDIX F

RISK CATEGORISATION TABLES

Severity of Consequence

Severe	Short term (acute) risks to human health, likely to result in significant harm. Major pollution of (watercourses or groundwater)
Medium	Long-term (Chronic) damage (significant harm) to human health. Pollution of sensitive water resources.
Mild	Pollution of non-sensitive water resources.
Minor	Non-permanent health effects easily prevented by use of personal protective equipment during site works.

Probability of Risk Event Occurring

High Likelihood	There is a pollutant linkage and an event that either appears very likely in the short term, almost inevitable in the long term, or there is evidence of harm or pollution at the receptor.
Likely	There is a pollution linkage and all the elements are present and in the right place, so that a risk event is possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which a risk event could occur. However, it is not certain that such an event would take place even over a longer period, and even less likely in the short term.
unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.

Comparison of Probability Against Severity of Consequence

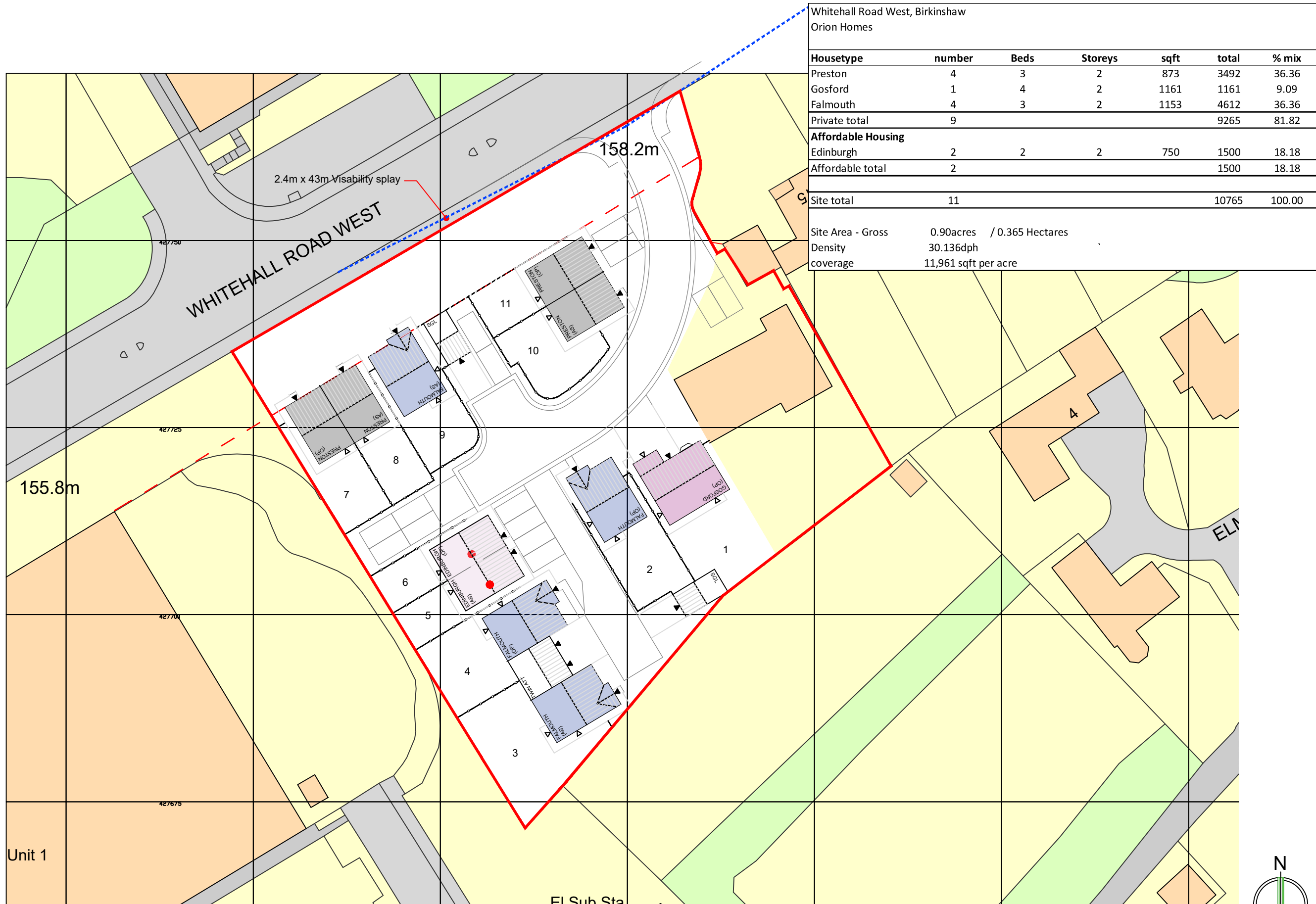
		Severity of Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/ Low Risk
	Likely	High Risk	Moderate Risk	Moderate/ Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/ Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/ Low Risk	Low Risk	Very Low Risk	Very Low Risk

Risk Categories - Definitions

Very High Risk	High probability that severe harm could arise to a receptor, or there is evidence that severe harm is already occurring. Urgent investigation is required and urgent remediation is likely to be required.
High Risk	Harm is likely to arise to a receptor. Urgent investigation is required and remediation may be necessary in the short term and likely over the longer term.
Moderate Risk	Possible that harm could arise to a receptor, but low likelihood that such harm would be severe. Harm is likely to be mild. Investigation normally required to clarify risk. Some remedial works may be required in the long-term.
Moderate/ Low Risk	Possible that harm could arise to a receptor, but where a combination of likelihood and consequence results in a risk that is above low, but is not of sufficient concern to be classified as mild. Limited further investigation may be required to clarify the risk. If necessary, remediation works are likely to be limited in extent.
Low Risk	Possible that harm could arise to a receptor. Such harm, at worst, would normally be mild.
Very Low Risk	Low possibility that harm could arise to a receptor. Such harm is unlikely to be any worse than mild.

APPENDIX G

INDICATIVE PROPOSED SITE LAYOUT



Whitehall Road West, Birkinshaw Orion Homes						
House type	number	Beds	Storeys	sqft	total	% mix
Preston	4	3	2	873	3492	36.36
Gosford	1	4	2	1161	1161	9.09
Falmouth	4	3	2	1153	4612	36.36
Private total	9				9265	81.82
Affordable Housing						
Edinburgh	2	2	2	750	1500	18.18
Affordable total	2				1500	18.18
Site total	11				10765	100.00
Site Area - Gross	0.90 acres / 0.365 Hectares					
Density	30.136dph					
coverage	11,961 sqft per acre					

Rev:	Date:	Notes:
A	27.02.20	Amended to suit revised title - CD
B	27.02.20	Re-designed - CD
C	12.04.23	Re-designed & amended red line boundary - CD
D	24.04.23	Parking added to existing property - CD

Rev:	Date:	Notes:
--	--	--

Rev:	Date:	Notes:
--	--	--

Date:	26.02.20
Scale @ A3:	1:500
Drawn By:	CD
Project:	Whitehall Road West, Birkinshaw
Drawing Number:	SK001
Revision:	D

OrionHomes
SO GOOD TO COME HOME TO
Unit 5, Benton Office Park, Bennett Avenue,
Horbury, Wakefield, WF4 5RA, Tel: 01924 831030

APPENDIX H

TRIAL PIT LOCATION PLAN AND LOGS



0m 20m
Approximate Scale

KEY

Trial Pit Location

ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS

Northwest House · 5-6 Northwest Business Park · Servia Hill · Leeds LS6 2QH
Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project **WHITEHALL ROAD WEST
BIRKENSRAW**

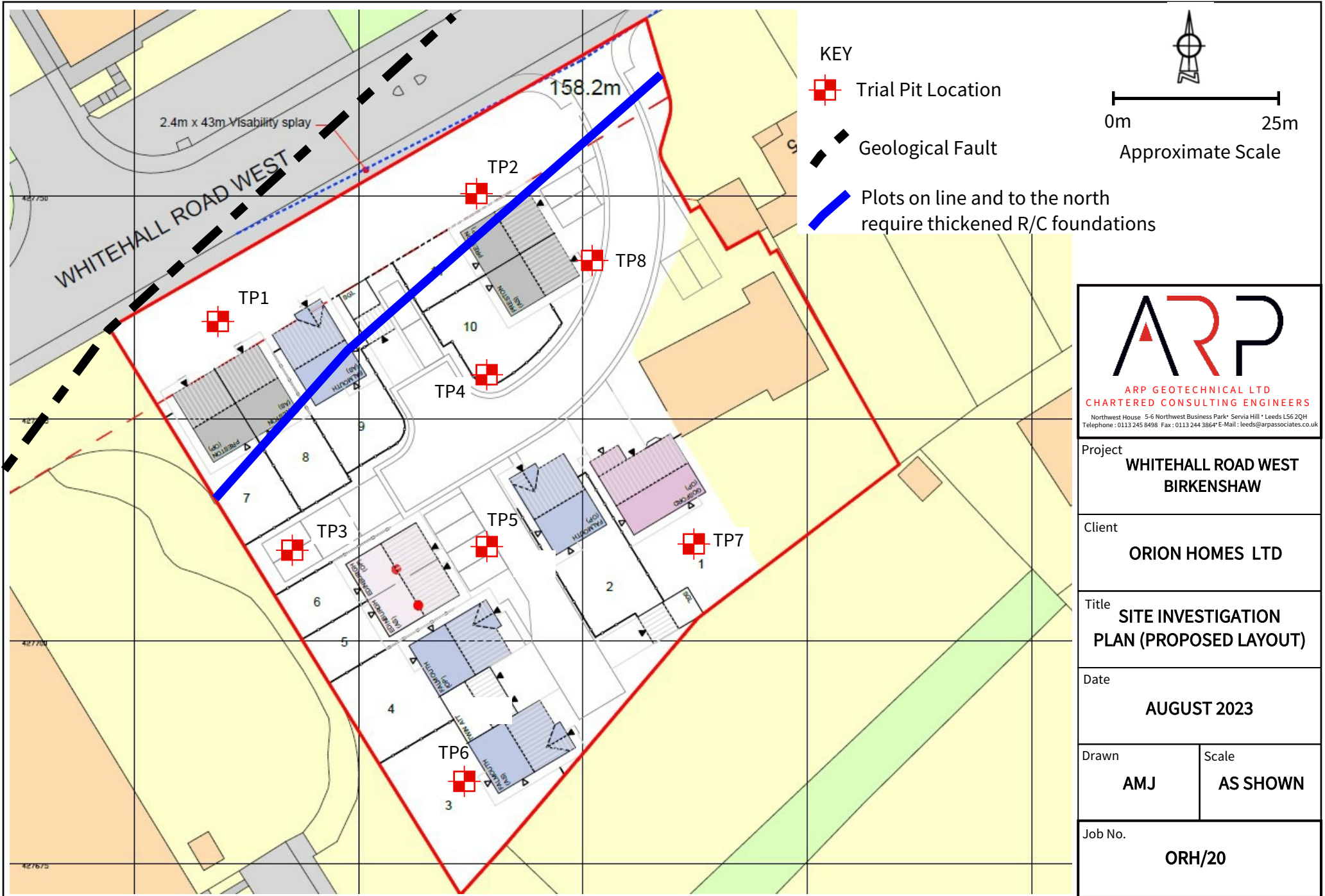
Client **ORION HOMES LTD**

Title **SITE INVESTIGATION
PLAN**

Date **AUGUST 2023**

Drawn AMJ	Scale AS SHOWN
---------------------	--------------------------

Job No. **ORH/20**



ARP
 ARP GEOTECHNICAL LTD
 CHARTERED CONSULTING ENGINEERS
 North West House 5-6 Northwest Business Park Servia Hill Leeds LS6 2QH
 Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project
**WHITEHALL ROAD WEST
 BIRKENSRAW**

Client
ORION HOMES LTD

Title
**SITE INVESTIGATION
 PLAN (PROPOSED LAYOUT)**











Date
AUGUST 2023

Drawn
AMJ

Scale
AS SHOWN



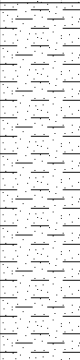
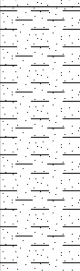


Job No.
ORH/20

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420182.54 - 427737.49 Level:	Date 29/06/2023
Location: Birkenshaw	Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 2.80 m	Machine Type: JCB 3CX	Scale 1:25
Client: Orion Homes Ltd			Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
Depth	Type	Results					
0.20 - 0.45	ES		0.20			Dark brown slightly sandy clayey TOPSOIL.	
			0.45			POSSIBLE MADE GROUND. Soft to firm dark brown slightly sandy silty CLAY (reworked natural ground).	
0.80		HSV=110				High strength (stiff) light brown slightly sandy silty CLAY.	
1.00		HSV=120	1.00			High strength (stiff) dull yellow/buff slightly sandy silty CLAY.	1
1.20	D						
			1.80			Weathered Coal Seam.	2
			2.10			Medium strength (firm to stiff) dull grey slightly sandy silty CLAY.	
2.50		HSV=70					
			2.70			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).	
			2.80			End of Pit at 2.800m Bedrock encountered. Difficult to excavate any further.	3
							4
							5


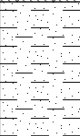

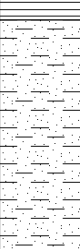

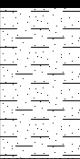

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420209.54 - 427752.79 Level:	Date 29/06/2023
Location: Birkenshaw	Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 3.60 m	Machine Type: JCB 3CX	Scale 1:25
Client: Orion Homes Ltd			Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
Depth	Type	Results					
0.00 - 0.30	ES					Dark brown slightly sandy clayey TOPSOIL.	
			0.30			Soft to firm light brown slightly sandy silty CLAY.	
0.60		HSV=70	0.60			Medium strength (stiff) dull yellow/buff slightly sandy silty CLAY.	1
			1.80			Medium strength (firm to stiff) dull grey slightly sandy silty CLAY.	2
			2.70			Weathered Coal Seam.	
			3.00			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).	3
			3.60			End of Pit at 3.600m Bedrock encountered. Difficult to excavate any further.	4
							5


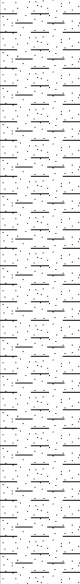
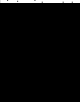
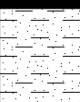

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420187.38 - 427721.98 Level:	Date 29/06/2023
Location: Birkenshaw	Client: Orion Homes Ltd	Pit Dimensions (m) Length: 1.70 m Width: 0.70 m Depth: 2.90 m	Machine Type: JCB 3CX
		Scale 1:25	Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
Depth	Type	Results					
0.00 - 0.30	ES					Dark brown slightly sandy clayey TOPSOIL.	
			0.30			High strength (firm to stiff) dull yellow/buff slightly sandy silty CLAY.	
0.80		HSV=76	1.00			Mudstone band.	1
			1.10			High strength (stiff) dull yellow/buff slightly sandy silty CLAY.	
1.40		HSV=130	1.90			Weathered Coal Seam.	2
			2.10			Stiff dull grey slightly sandy silty CLAY.	
			2.60			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).	
			2.90			End of Pit at 2.900m Bedrock encountered. Difficult to excavate any further.	3
							4
							5

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None


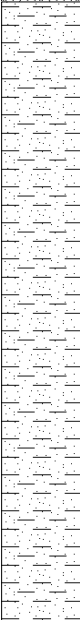





Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420209.78 - 427737.43 Level:	Date 29/06/2023
Location: Birkenshaw	Pit Dimensions (m) Length: 1.90 m Width: 0.70 m Depth: 3.10 m	Machine Type: JCB 3CX	Scale 1:25
Client: Orion Homes Ltd			Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
0.00 - 0.20	ES		0.20			Dark brown slightly sandy clayey TOPSOIL.
0.80		HSV=76				High strength (stiff) dull yellow/buff slightly sandy silty CLAY.
1.30		HSV=106				
			2.20			Weathered Coal Seam.
2.70	D		2.55			Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).
			2.90			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).
			3.10			End of Pit at 3.100m Bedrock encountered. Difficult to excavate any further.

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None

RrTP_v1.053


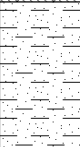
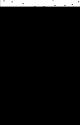
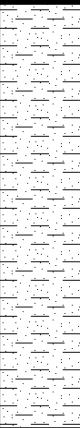

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420206.32 - 427719.42 Level:	Date 29/06/2023
Location: Birkenshaw	Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 3.10 m	Machine Type: JCB 3CX	Scale 1:25
Client: Orion Homes Ltd			Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
0.30	ES		0.25			Dark brown slightly sandy clayey TOPSOIL.
0.70		HSV=120				High strength (stiff) dull yellow/buff slightly sandy silty CLAY.
1.20		HSV=124				
			2.30			Weathered Coal Seam.
			2.60			Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).
			2.90			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).
			3.10			End of Pit at 3.100m Bedrock encountered. Difficult to excavate any further.

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None

RrTP_v1.053

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420206.09 - 427690.48 Level: 160.50	Date 29/06/2023
Location: Birkenshaw	Client: Orion Homes Ltd	Pit Dimensions (m) Length: 1.80 m Width: 0.70 m Depth: 2.80 m	Machine Type: JCB 3CX
			Scale 1:25 Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
0.00 - 0.30	ES	HSV=130	0.30	160.20		Dark brown slightly sandy clayey TOPSOIL.
0.70			0.80	159.70		High strength (stiff) dull yellow/buff slightly sandy silty CLAY.
			1.20	159.30		Weathered Coal Seam.
2.20 - 2.50	D		2.60	157.90		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).
			2.80	157.70		Extremely weak MUDSTONE (recovered as cobble and gravel sized pieces).
						End of Pit at 2.800m Bedrock encountered. Difficult to excavate any further.

Groundwater: None Encountered.


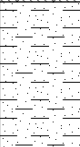
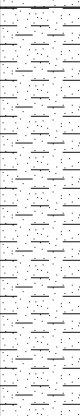

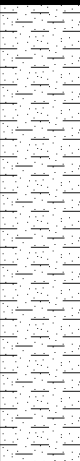

Backfill: Backfilled with arisings upon completion.

Stability: Stable throughout.

Remarks: None

RrTP_v1.053

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420227.05 - 427710.68 Level: 160.70	Date 29/06/2023
Location: Birkenshaw	Pit Dimensions (m) Length: 1.90 m Width: 0.60 m Depth: 4.30 m	Machine Type: JCB 3CX	Scale 1:25
Client: Orion Homes Ltd			Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
0.00 - 0.20	ES					Dark brown slightly sandy clayey TOPSOIL.
			0.30	160.40		Stiff dull yellow/buff slightly sandy silty CLAY.
			0.80	159.90		High strength (stiff) dull yellow/buff and grey slightly sandy silty CLAY.
1.30		HSV=130				
			2.20	158.50		Weathered Coal Seam.
			2.50	158.20		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).
			4.10	156.60		Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).
			4.30	156.40		End of Pit at 4.30m Bedrock encountered. Difficult to excavate any further.

Groundwater: None Encountered.


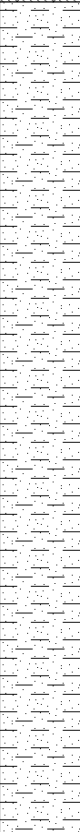




Backfill: Backfilled with arisings upon completion.

Stability: Stable throughout.

Remarks: None

RrTP_v1.053

Project Name: Whitehall Road West, Birkenshaw	Project No. ORH/20	Co-ords: 420226.55 - 427745.45 Level: 159.50	Date 29/06/2023
Location: Birkenshaw	Client: Orion Homes Ltd	Pit Dimensions (m) Length: 1.90 m Width: 0.70 m Depth: 3.90 m	Machine Type: JCB 3CX
		Scale 1:25	Logged: AMJ

Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
0.00 - 0.30	ES		0.30	159.20		Dark brown slightly sandy clayey TOPSOIL.
1.20 1.20	D	HSV=80				High strength (stiff) dull yellow/buff slightly sandy silty CLAY.
1.50		HSV=130				
			3.10	156.40		Weathered Coal Seam.
			3.40	156.10		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).
			3.70	155.80		Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).
			3.90	155.60		End of Pit at 3.900m Bedrock encountered. Difficult to excavate any further.

Groundwater: None Encountered.
 Backfill: Backfilled with arisings upon completion.
 Stability: Stable throughout.
 Remarks: None

RrTP_v1.053

APPENDIX J

LABORATORY TEST CERTIFICATES AND SCREENING VALUES



ARP GEOTECHNICAL LIMITED
SOIL CONTAMINANT SCREENING VALUES
RESIDENTIAL WITH HOME-GROWN PRODUCE

Determinand	S4UL (mg/kg)			C4SL (mg/kg)		
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Arsenic	37			37		
Cadmium	11			22		
Chromium (trivalent)	910					
Chromium (hexavalent)	6			21		
Copper	2400					
Lead				200		
Inorganic Mercury	40					
Nickel	180					
Selenium	250					
Zinc	3700					
Acidity (pH)	*Should be Greater Than 5			*Should be Greater Than 5		
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13			
Acenaphthylene	170	420	920			
Acenaphthene	210	510	1,100			
Fluorene	170	400	860			
Phenanthrene	95	220	440			
Anthracene	2,400	5,400	11,000			
Fluoranthene	280	560	890			
Pyrene	620	1,200	2,000			
Benzo(a)anthracene	7.2	11	13			
Chrysene	15	22	27			
Benzo(b)fluoranthene	2.6	3.3	3.7			
Benzo(k)fluoranthene	77	93	100			
Benzo(a)pyrene	2.2	2.7	3			5
Indeno(1,2,3-cd)pyrene	27	36	41			
Dibenzo(a,h)anthracene	0.24	0.28	0.30			
Benzo(g,h,i)perylene	320	340	350			
Phenols	120	200	380			
Total TPH	*Above 500, speciate and compare with values below:					
C5 to C6 Aliphatic	42	78	160			
C6 to C8 Aliphatic	100	230	530			
C8 to C10 Aliphatic	27	65	150			
C10 to C12 Aliphatic	130	330	760			
C12 to C16 Aliphatic	1100	2,400	4,300			
C16 to C35 Aliphatic	65,000	92,000	110,000			
C35 TO C44 Aliphatic	65,000	92,000	110,000			
C5 to C7 Aromatic (Benzene)	70	140	300			
C7 to C8 Aromatic (Toluene)	130	290	660			
C8 to C10 Aromatic	34	83	190			
C10 to C12 Aromatic	74	180	380			
C12 to C16 Aromatic	140	330	660			
C16 to C21 Aromatic	260	540	930			
C21 TO C35 Aromatic	1100	1,500	1,700			
C35 TO C44 Aromatic	1100	1,500	1,700			
Asbestos	*Should be None Detected			*Should be None Detected		

* In House Value/Approach S4UL = Suitable 4 Use Level, CIEH/LQM 2014 C4SL = Cat 4 Screening Level, DEFRA, 2014

Blank cell indicates no published value or in-house value. Some values presented are above saturation limits.

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Amended Report

Report No.: 23-22564-2

Initial Date of Issue: 10-Jul-2023 **Date of Re-Issue:** 24-Jul-2023

Re-Issue Details: This report has been revised and directly supersedes 23-22564-1 in its entirety

Client: ARP Geotechnical Ltd

Client Address: 5/6 Northwest Business Park
Servia Hill
Leeds
Yorkshire
LS6 2QH

Contact(s): Andy Jones

Project: ORH/20

Quotation No.: Q20-21438 **Date Received:** 03-Jul-2023

Order No.: ORH/20 **Date Instructed:** 03-Jul-2023

No. of Samples: 12

Turnaround (Wkdays): 5 **Results Due:** 07-Jul-2023

Date Approved: 24-Jul-2023

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: ORH/20

Client: ARP Geotechnical Ltd		Chemtest Job No.:		23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564
Quotation No.: Q20-21438		Chemtest Sample ID.:		1668255	1668256	1668257	1668258	1668259	1668260	1668261	1668262	1668263	1668263
Sample Location:		TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP7	TP8	TP1	TP1
Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Top Depth (m):		0.2	0	0	0	0.3	0	0	0	0	0	1.2	1.2
Bottom Depth (m):		0.45	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	1.2	1.2
Date Sampled:		29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023
Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	17	43	24	21	16	21	16	16	16
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	None	Stones and Roots	Stones and Roots	Stones and Roots	Roots
Soil Texture	N	2040		N/A	Loam	Loam	Loam	Loam	Clay	Loam	Loam	Loam	Clay
pH	M	2010		4.0	6.4	7.2	6.4	6.9	7.6	6.5	6.9	7.0	7.8
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Sulphate (Total)	U	2430	mg/kg	100	1100	950	690	680	500	1100	870	920	
Arsenic	M	2455	mg/kg	0.5	29	15	11	14	6.7	33	27	31	
Cadmium	M	2455	mg/kg	0.10	0.50	0.23	0.11	0.26	< 0.10	0.30	0.15	0.25	
Chromium	M	2455	mg/kg	0.5	23	16	13	14	20	21	20	18	
Copper	M	2455	mg/kg	0.50	49	32	21	28	15	40	41	54	
Mercury	M	2455	mg/kg	0.05	0.29	0.16	0.11	0.14	0.05	0.40	0.41	0.14	
Nickel	M	2455	mg/kg	0.50	23	14	9.7	13	12	21	19	20	
Lead	M	2455	mg/kg	0.50	120	62	40	57	15	88	65	83	
Selenium	M	2455	mg/kg	0.25	1.1	0.74	0.46	0.52	0.47	1.2	1.0	0.68	
Zinc	M	2455	mg/kg	0.50	130	78	58	75	54	98	86	100	
Chromium (Trivalent)	N	2490	mg/kg	1.0	23	16	13	14	20	21	20	18	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40	10	8.8	7.8	8.2	0.80	9.5	7.0	11	
Total TPH >C6-C40	M	2670	mg/kg	10	100	180	130	110	< 10	220	130	130	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	0.26	0.39	0.44	1.2	0.48	0.39	0.59	
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	0.26	0.20	0.22	0.80	0.18	< 0.10	0.12	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	0.32	0.38	0.33	0.80	0.75	0.47	0.41	
Fluorene	M	2700	mg/kg	0.10	< 0.10	0.31	0.28	0.25	0.30	0.64	0.36	0.25	
Phenanthrene	M	2700	mg/kg	0.10	1.3	1.6	1.6	1.4	1.1	3.6	1.7	1.8	
Anthracene	M	2700	mg/kg	0.10	0.44	0.33	0.40	0.27	0.25	0.59	0.28	0.23	
Fluoranthene	M	2700	mg/kg	0.10	2.2	2.6	2.3	1.8	0.84	4.0	2.0	2.0	
Pyrene	M	2700	mg/kg	0.10	2.0	2.5	2.2	1.9	0.94	4.0	2.0	1.9	
Benzo[a]anthracene	M	2700	mg/kg	0.10	1.8	1.4	1.7	0.45	0.73	0.63	1.4	0.84	
Chrysene	M	2700	mg/kg	0.10	2.2	1.2	1.0	< 0.10	0.70	2.0	1.0	1.2	
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	2.3	2.2	1.7	1.7	0.76	2.4	1.3	1.8	
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	0.67	0.53	0.58	0.61	0.63	0.69	0.22	0.47	
Benzo[a]pyrene	M	2700	mg/kg	0.10	1.4	1.3	0.97	0.95	0.45	1.6	0.95	0.93	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	0.82	1.4	1.2	1.0	< 0.10	1.4	1.2	1.2	

Results - Soil

Project: ORH/20

Client: ARP Geotechnical Ltd	Chemtest Job No.:		23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564	23-22564
Quotation No.: Q20-21438	Chemtest Sample ID.:		1668255	1668256	1668257	1668258	1668259	1668260	1668261	1668262	1668263	1668263
	Sample Location:		TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP1	TP1
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.2	0	0	0	0.3	0	0	0	0	1.2
	Bottom Depth (m):		0.45	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	1.2
	Date Sampled:		29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD								
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	2.3	< 0.10	< 0.10	< 0.10	0.20	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	0.84	1.2	0.78	0.78	< 0.10	1.3	0.93	0.93
Total Of 16 PAH's	M	2700	mg/kg	2.0	16	20	16	12	9.5	25	14	15
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	0.52	0.47	< 0.10	0.20	< 0.10	0.12

Results - Soil

Project: ORH/20

Client: ARP Geotechnical Ltd	Chemtest Job No.:				23-22564	23-22564	23-22564
Quotation No.: Q20-21438	Chemtest Sample ID.:				1668264	1668265	1668266
	Sample Location:				TP4	TP6	TP8
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				2.7	2.2	1.2
	Bottom Depth (m):				2.7	2.5	1.2
	Date Sampled:				29-Jun-2023	29-Jun-2023	29-Jun-2023
	Asbestos Lab:						
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A			
Asbestos Identification	U	2192		N/A			
Moisture	N	2030	%	0.020	16	8.6	21
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	None	Stones	Stones
Soil Texture	N	2040		N/A	Clay	Loam	Clay
pH	M	2010		4.0	7.5	5.7	6.9
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	0.037
Sulphate (Total)	U	2430	mg/kg	100			
Arsenic	M	2455	mg/kg	0.5			
Cadmium	M	2455	mg/kg	0.10			
Chromium	M	2455	mg/kg	0.5			
Copper	M	2455	mg/kg	0.50			
Mercury	M	2455	mg/kg	0.05			
Nickel	M	2455	mg/kg	0.50			
Lead	M	2455	mg/kg	0.50			
Selenium	M	2455	mg/kg	0.25			
Zinc	M	2455	mg/kg	0.50			
Chromium (Trivalent)	N	2490	mg/kg	1.0			
Chromium (Hexavalent)	N	2490	mg/kg	0.50			
Organic Matter	M	2625	%	0.40			
Total TPH >C6-C40	M	2670	mg/kg	10			
Naphthalene	M	2700	mg/kg	0.10			
Acenaphthylene	M	2700	mg/kg	0.10			
Acenaphthene	M	2700	mg/kg	0.10			
Fluorene	M	2700	mg/kg	0.10			
Phenanthrene	M	2700	mg/kg	0.10			
Anthracene	M	2700	mg/kg	0.10			
Fluoranthene	M	2700	mg/kg	0.10			
Pyrene	M	2700	mg/kg	0.10			
Benzo[a]anthracene	M	2700	mg/kg	0.10			
Chrysene	M	2700	mg/kg	0.10			
Benzo[b]fluoranthene	M	2700	mg/kg	0.10			
Benzo[k]fluoranthene	M	2700	mg/kg	0.10			
Benzo[a]pyrene	M	2700	mg/kg	0.10			
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10			

Results - Soil

Project: ORH/20

Client: ARP Geotechnical Ltd	Chemtest Job No.:				23-22564	23-22564	23-22564
Quotation No.: Q20-21438	Chemtest Sample ID.:				1668264	1668265	1668266
	Sample Location:				TP4	TP6	TP8
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				2.7	2.2	1.2
	Bottom Depth (m):				2.7	2.5	1.2
	Date Sampled:				29-Jun-2023	29-Jun-2023	29-Jun-2023
	Asbestos Lab:						
Determinand	Accred.	SOP	Units	LOD			
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10			
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10			
Total Of 16 PAH's	M	2700	mg/kg	2.0			
Total Phenols	M	2920	mg/kg	0.10			

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



LABORATORY REPORT



Contract Number: PSL23/5652

Report Date: 07 August 2023
Client's Reference: ORH/20
Client Name: ARP Geotechnical Ltd
Northwest House
5/6 Northwest Business Park
Servia Hill
Leeds
LS6 2QH

For the attention of: Andy Jones

Project Name: Whitehall Road West, Birkenshaw
Date Received: 14/7/2023
Date Commenced: 14/7/2023
Date Completed: 07/08/2023

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

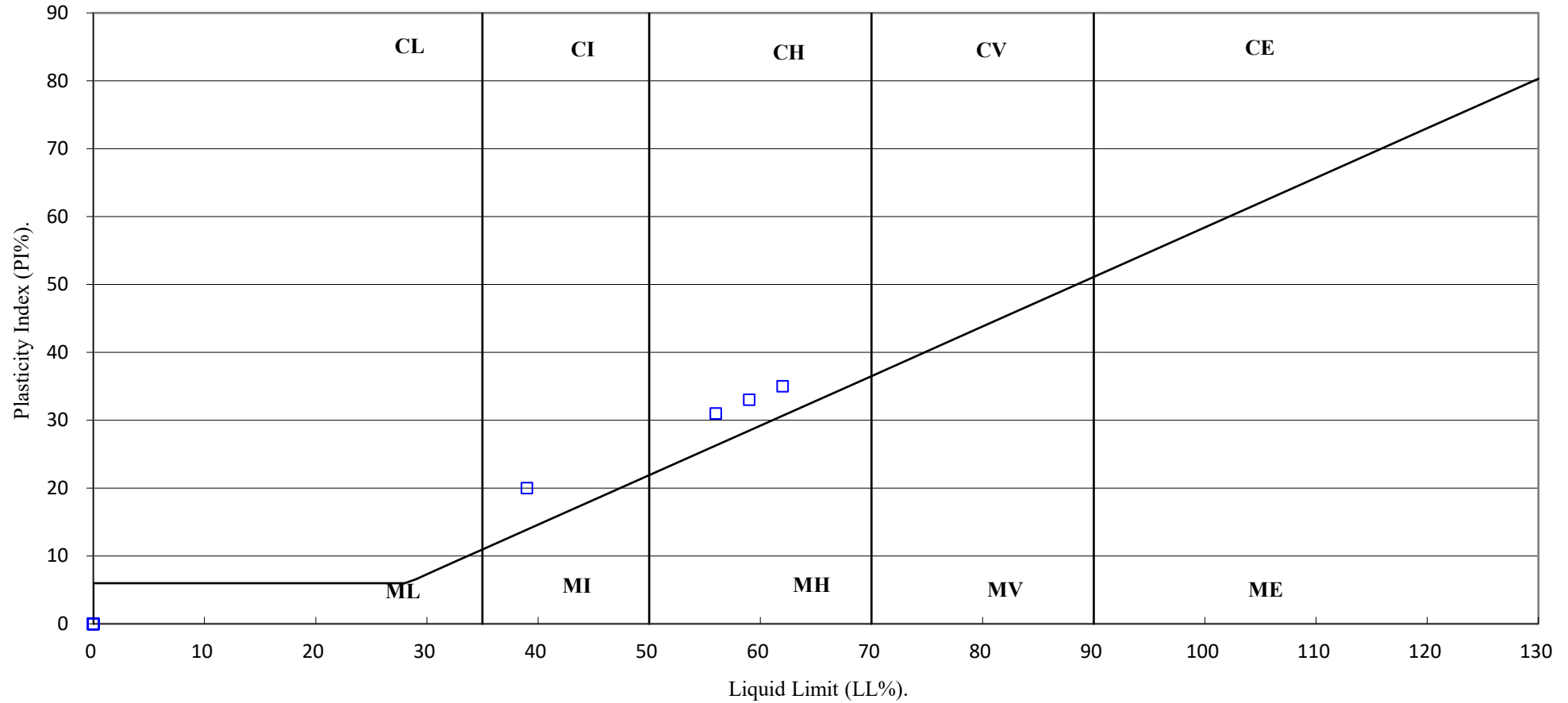
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Page 1 of

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



Whitehall Road West, Birkenshaw

Contract No:

PSL23/5652

Client Ref:

ORH/20

APPENDIX K

METHOD STATEMENT FOR ASSESSMENT OF IMPORTED SOILS



**METHOD STATEMENT FOR
ASSESSMENT OF IMPORTED
SOILS**

AT
WHITEHALL ROAD WEST
BIRKENSRAW

**ON BEHALF OF
ORION HOMES LTD**

ARP GEOTECHNICAL LTD

CHARTERED CONSULTING ENGINEERS

Northwest House 5/6 Northwest Business Park Servia Hill Leeds LS6 2QH

☎ 0113 245 8498 ✉ leeds@arpgeotechnical.co.uk 🌐 www.arpconsultingengineers.co.uk

CLIENT: ORION HOMES LTD

JOB NUMBER: ORH/20

PROJECT: WHITEHALL ROAD WEST, BIRKENSHAW

REPORT TYPE: METHOD STATEMENT FOR ASSESSMENT OF IMPORTED SOILS

REPORT REFERENCE: ORH/20imp

	Name	Signature
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1	11 th AUGUST 2023	V1 FINAL

1.0 Introduction

- 1.1 This document has been prepared to provide information for the Client and other interested parties, such as the Regulatory Authorities, outlining how any soils imported to the site will be managed to ensure that they are suitable, in terms of human health, for the intended residential use. The document should be agreed, prior to implementation, with the relevant Regulatory Authorities, usually the local Planning Authority and NHBC or other building control provider.

2.0 The Site

- 2.1 The ARP Geotechnical Ltd Combined Stage 1/Stage 2 Geo-environmental Report, dated 11th August 2023 under reference ORH/20r1, makes an assessment of contamination, along with other aspects.
- 2.2 The conceptual site model is for a residential development, including private gardens.
- 2.3 The majority of the site is currently occupied by overgrown vegetation and a grassed garden area. In the east of the site is a relatively large two-storey detached house with hardstanding access road and grassed garden to the rear.
- 2.4 Ordnance Survey archive maps show no indication of any significant potentially contaminating uses of the site. The site has only ever been developed with a small outbuilding (likely a chicken coop) and a detached house (some time after 2002) in the east of the site. There is no evidence of any previous development on the remainder of the site. It is possible that thin and localised areas of made ground associated with the building of the house and the outbuilding (chicken coop) exist on site.
- 2.5 The geological maps show the majority of the site to be underlain by the Lepton Edge Rock (sandstone) with the far northeastern corner of the site underlain by the Pennine Lower Coal Measures (sandstone, siltstone and mudstone). No superficial/drift deposits are shown to exist on the site. The maps indicate a geological fault to be present immediately adjacent to the northern boundary of the site.
- 2.6 The site is at risk from historical coal mining activities and a rotary borehole investigation is scheduled to be undertaken to assess this risk.
- 2.7 The strata beneath the site are classed as a "Secondary A" Aquifer. There are no groundwater abstractions within 1km of the site. The nearest surface watercourse is an unnamed stream, which is located approximately 273m to the southeast of the site.
- 2.8 The site is in an intermediate probability radon area, as between 3% and 5% of homes are above the action level. Therefore, basic radon protection is required. This is normally achieved by incorporating a radon barrier within a solid floor system, and extending the barrier through the cavity wall. Gas monitoring (for mine gas) will be undertaken subsequent to the rotary investigation for shallow coal, if required, and will be reported separately if undertaken.

- 2.9 The ground investigation revealed topsoil directly over natural firm to stiff clays, which terminated on bedrock (of siltstone and mudstone) at depths of between 2.6m and 4.1m. Made ground was only present at one location only (TP1) as a thin layer comprising reworked natural ground.
- 2.10 The contamination testing, carried out on samples of topsoil, made ground (reworked natural ground) and natural clay across the site, did not identify any concentrations of contaminants requiring any remedial measures. However, it is still necessary to have in place a method statement for the assessment of any soils to be imported, in order to satisfy the Regulatory Authorities that the soils are suitable for use on the site, in terms of human health. This needs to be independently confirmed, in accordance with the guidance supplied in the document produced by the Yorkshire and Lincolnshire Pollution Advisory Council (YALPAG): "Guidance on the Verification Requirements for Cover Systems". The measures described below will be required to ensure compliance with the document.

3.0 Imported Soils

- 3.1 If any imported soils are required (this is considered unlikely), the source will need to be confirmed, and the material tested for the attached suite of contaminants, to comply with the maximum screening values listed. The frequency of testing is given on the table below.

Material Type	Number of Samples
Topsoil or subsoil from greenfield site or manufactured source	Minimum 3No. or 1 per 250m ³ (whichever is greater)
Topsoil or subsoil from brownfield site or screened source	Minimum 6No. or 1 per 100m ³ (whichever is greater)

- 3.2 The material should be placed in quarantined stockpiles and once a stockpile has been approved by the Engineer, no further material should be added to the stockpile, and any further import should be stockpiled separately. Further testing shall be carried out where any mixing is suspected to have occurred.
- 3.3 As and when required, the soils will be used around the plots as the development progresses, and it will be necessary to verify that the appropriate soils have been placed on the plots, and not soils from any other source. This will be achieved by excavating trial pits on the basis of one per three plots. The trial pits will be photographed, to include a reference scale, and the photographs included within any report to enable the location on site to be identified.
- 3.4 If space is insufficient on the site to store quarantined stockpiles, the soils can be placed directly into the appropriate gardens/landscape areas, but samples of each material would need to be taken and tested directly from the trial pits within the gardens, described in paragraph 3.3 above.

- 3.5 The results of all the laboratory analysis, sample descriptions, plans, and import documents, will form part of the Soils Validation Report.
- 3.6 In order to enable the scheme to progress and sales of properties to continue throughout the construction of the development, interim Soils Validation Reports may be prepared for specific areas. This will enable enquiries during the sales of the properties to be satisfied and a final Soils Validation Report will be prepared at the end of the development, incorporating all the interim reports to satisfy the planning conditions.

4.0 Unexpected Contamination

- 4.1 Any unexpected contamination uncovered during the works shall be inspected, sampled and analysed in laboratory for the suite of determinands appended to this Method Statement, and compared to the maximum concentration levels listed on the enclosure. Works on the affected materials shall cease until the appraisal is complete and, if necessary, a Remediation Statement is to be prepared and approved by the Planning Authority before work is recommenced.



ARP GEOTECHNICAL LIMITED
SOIL CONTAMINANT SCREENING VALUES
RESIDENTIAL WITH HOME-GROWN PRODUCE

Determinand	S4UL (mg/kg)			C4SL (mg/kg)		
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Arsenic	37			37		
Cadmium	11			22		
Chromium (trivalent)	910					
Chromium (hexavalent)	6			21		
Copper	2400					
Lead				200		
Inorganic Mercury	40					
Nickel	180					
Selenium	250					
Zinc	3700					
Acidity (pH)	*Should be Greater Than 5			*Should be Greater Than 5		
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13			
Acenaphthylene	170	420	920			
Acenaphthene	210	510	1,100			
Fluorene	170	400	860			
Phenanthrene	95	220	440			
Anthracene	2,400	5,400	11,000			
Fluoranthene	280	560	890			
Pyrene	620	1,200	2,000			
Benzo(a)anthracene	7.2	11	13			
Chrysene	15	22	27			
Benzo(b)fluoranthene	2.6	3.3	3.7			
Benzo(k)fluoranthene	77	93	100			
Benzo(a)pyrene	2.2	2.7	3			5
Indeno(1,2,3-cd)pyrene	27	36	41			
Dibenzo(a,h)anthracene	0.24	0.28	0.30			
Benzo(g,h,i)perylene	320	340	350			
Phenols	120	200	380			
Total TPH	*Above 500, speciate and compare with values below:					
C5 to C6 Aliphatic	42	78	160			
C6 to C8 Aliphatic	100	230	530			
C8 to C10 Aliphatic	27	65	150			
C10 to C12 Aliphatic	130	330	760			
C12 to C16 Aliphatic	1100	2,400	4,300			
C16 to C35 Aliphatic	65,000	92,000	110,000			
C35 TO C44 Aliphatic	65,000	92,000	110,000			
C5 to C7 Aromatic (Benzene)	70	140	300			
C7 to C8 Aromatic (Toluene)	130	290	660			
C8 to C10 Aromatic	34	83	190			
C10 to C12 Aromatic	74	180	380			
C12 to C16 Aromatic	140	330	660			
C16 to C21 Aromatic	260	540	930			
C21 TO C35 Aromatic	1100	1,500	1,700			
C35 TO C44 Aromatic	1100	1,500	1,700			
Asbestos	*Should be None Detected			*Should be None Detected		

* In House Value/Approach S4UL = Suitable 4 Use Level, CIEH/LQM 2014 C4SL = Cat 4 Screening Level, DEFRA, 2014

Blank cell indicates no published value or in-house value. Some values presented are above saturation limits.

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