

PHASE 1 & 2 ENVIRONMENTAL AUDIT

Proposed Residential Development

7 Salmesbury Hall Close

Ramsbottom

Bury

BL0 9FG

Author: Daniel Slattery
Client: Mr Benjamin Heron.
Reference: rep-tjba-heron-7 salmesbury hall cl-PHS
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Revision	Date	Reason
0	Feb 2022	Original to address planning conditions.

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1. INTRODUCTION

T. J. Booth Associates have been appointed by Mr Benjamin Heron to undertake a Phase 1 & 2 Environmental Audit to support a planning/building regulations application for residential development.

The Site is located at the end of a cul-de-sac in a residential housing estate and is part of the garden area to No. 7 Salmesbury Hall Close. Site centre co-ordinates are E: 378929 N: 415998.

The Site is currently subject to a planning application, ref No: 64778; for the "erection of 1No. dwelling and detached garage". Planning permission for the Site was obtained in December 2019. Condition 4 & 5 below, relate to environmental assessment of the Site:

- 4 No development shall commence unless and until:-
 - A contaminated land Preliminary Risk Assessment report to assess the actual/potential contamination and/or ground gas/landfill gas risks at the site shall be submitted to, and approved in writing by, the Local Planning Authority;
 - Where actual/potential contamination and/or ground gas/landfill gas risks have been identified, detailed site investigation and suitable risk assessment shall be submitted to, and approved in writing by the Local Planning Authority;
 - Where remediation/protection measures is/are required, a detailed Remediation Strategy shall be submitted to, and approved in writing by, the Local Planning Authority.

Reason. The scheme does not provide full details of the actual contamination and subsequent remediation, which is required to secure the satisfactory development of the site in terms of human health, controlled waters, ground gas and the wider environment and pursuant to National Planning Policy Framework Section 15 - Conserving and enhancing the natural environment.
- 5 Following the provisions of Condition 4 of this planning permission, where remediation is required, the approved Remediation Strategy must be carried out to the satisfaction of the Local Planning Authority within agreed timescales; and A Site Verification Report detailing the actions taken and conclusions at each stage of the remediation works, including substantiating evidence, shall be submitted to and approved in writing by the Local Planning Authority prior to the development being brought into use.

Reason. To secure the satisfactory development of the site in terms of human health, controlled waters and the wider environment and pursuant to National Planning Policy Framework Section 15 - Conserving and enhancing the natural environment.

This report provides a desk-based study & intrusive ground investigation based on current UK guidance for environmental investigation within the construction industry. Principal to the assessment is the potential for contamination pollutant linkages via the CLR-11 source-pathway-receptor methodology. Assessment of potential pollution linkages is primarily undertaken in strict accordance with BS5930:2015 BS 10175:2011+A2:2017 CIRIA C665 and BS 8485:2015+A1:2019 et al.

2. PROPOSED DEVELOPMENT

The proposal is for a single detached residential dwelling with detached garage, associated driveway and soft landscaped areas.

The existing Site level is lower than No.7 and it is understood granular fill to some areas of the Site will be used to raise levels locally.

3. HISTORIC MAPS

DATE	ON-SITE	OFF-SITE/SURROUNDING AREA
c1850	Site is part of agricultural land in a predominantly rural area.	Surrounding area is rural. There is a brook noted in Broad Hey Wood approximately 120m south. No other significant features.
c1890	No change.	Hope Cotton Mill noted 200m northwest with associated reservoir adjacent, iron works 250m west. Minor urbanisation to the northwest around 250m distant.

c1910	No change.	Hope Mill now noted as a bleaching, dyeing & finishing works. Ramsbottom Cottage Hospital Some local development with dwellings noted to the SE.
c1929	No change. The Site boundary is now defined by a line between Hope Mills and the Site to the west side, and by a footpath to the south side.	Hope Mill double in size with that site now encompassing land that shares a boundary with the Application Site. There are 2No unknown polygons on the map in the land immediately neighbouring the Site. There is also a path leading south past the Application Site and to an area of land in Broad Hey Wood where tipping/made ground has occurred – assumed to be from Hope Works.
c1937-38	No change.	The 2No. unknown polygons in the adjacent Hope Mills site immediately adjacent the boundary now noted as tennis courts. There are also unspecified tanks, and a pump house 50-75m northwest beyond the courts. A minor area of made ground is noted beyond the path to the south of the Application Site, and further south in the Broad Hey wood valley which now include sludge beds and filter tanks usually associated with wastewater treatment works.
c1963-64	Part of the Site is now noted as a separate parcel of land but contains no structures within it.	Small areas of refuse tips noted within nominally 5m west of the Site boundary and another small area 75m northwest; both within the Hope Mills site. The area further south in the Broad Hey Wood valley is now also noted as a refuse tip. An open piece of land to the east was up to now vacant, but now contains significant areas designated as a refuse tip within 100-150m of the Site boundary.
c1971	No change.	Areas as above still noted as refuse tips, and the large area of land to the west appears almost completely used as a refuse tip. Buildings & tanks now noted in Broad Hey Wood to the south replacing the sludge beds and filter tanks noted earlier.
c1978	No change.	Refuse tips on the Hope Mills Sites to the northwest and south no longer specified as such. The large tip to the west appears to me a municipal tip and is now noted as disused. The land comprises an area of approximately 6 hectares and is nominally 5-10 m from the Application Site boundary.
c1986-88	No change.	The estate which the Site is within is under construction. There are also other areas of urban infill locally.
c1992	Site appears to be part of the garden area to No.7.	No overall change.

4. PRESENT DAY MAPS

Site Boundaries, Outlines of Structures and Buildings:	Current maps show the Site as part of the No.7 garden area, part of a residential housing estate. There is residential development onto the immediate west, north and east sides. There are no structures within the Site. To the west beyond the housing development is the Bolton Road West Recreation Ground – formerly the municipal tip. The Site is now levelled and landscaped, sloping sown to the perimeter on its eastern and south sides.
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Ground Contours, Natural Drainage Features:	The overall natural fall of the area is to the south. Topographic survey of the Application Site indicates a the Salmesbury Hall Close level to be around 154.30m aOD. External level to No.7 is approx. 153.60m aOD. The land falls away from No.7 within the Application Site to a level of around 152.00m aOD.
Water Courses:	An unnamed brook is noted to Broad Hey Wood approximately 100m south, which ultimately flow towards Holcombe Brook.
Below Ground Obstructions:	None noted on current plans.

5. GEOLOGY

Bedrock Geology:	Maps indicate solid geology to comprise Brookbottoms Sandstone of the Marsden Formation (Millstone Grit Group).
Superficial Geology:	The Site is underlain by glacial till for much of the wider area. Superficial deposits are known to be relatively deep in the local area.
Coal Seams/Faults.	An unnamed coal seam within the Brooksbottom sandstone subcrops nominally 250m from the Site, and so will underly the Site at depth.

6. BOREHOLES RECORDS

A borehole was noted immediately to the rear of No.7 Salmesbury Close dated 8-9 June 1989 for Lovell Homes with the following IDs: BGS ID: 22639; BGS Reference: SD71NE163; British National Grid (27700): 378940,415980. The borehole was 7m southeast of the Application Site and is at a relative level.

The borehole started at a level of 151.68 (same as the Site level) and revealed virgin ground as follows:

0-0.2m	TOPSOIL
0.2-0.4m	Soft sandy CLAY
0.4-1.5m	Clayey silty fine to medium SAND
1.5-3.0m	Very soft silty CLAY
3.0-4.0m	Soft to firm silty slightly sandy CLAY

* further entries are available, refer to Appendix for log down to 15.00m max depth.

A borehole was noted within the Hope Mill Site dated 1926, 75m northwest of the Site boundary, with the following IDs: BGS ID: 22480; BGS Reference: SD71NE4; British National Grid (27700): 378884,416015. The borehole revealed superficial deposits to 40m over bedrock.

Other boreholes were noted in the local area but it is considered that none are more pertinent than those above.

7. LANDMARK ENVIROCHECK

7.1. AGENCY & HYDROLOGICAL

Contaminated land register entries & notices:	No records within a 250m radius.
Discharge consents:	No records within a 250m radius.
Pollutant incidents to controlled waters:	No records within a 250m radius.
Local Authority Pollution Prevention and Controls:	1 record noted 250m northwest dated 1999, now revoked relating to textile & fabric finishing processes.

Water Abstractions:	1 record noted 96m north relating to groundwater abstraction at Hope Works dated 1998.
Bedrock aquifer:	Secondary A.
Superficial aquifer:	Secondary undifferentiated.
Source protection zone:	Not within an SPZ.

7.2. WASTE

Historical landfill sites:	Landfill 0m to the west (ie Hope Mills adjacent site) noted as Carrington Novare which operated from 1960-1984; deposited waste included inert, industrial, commercial, household, special waste, and liquid sludge. Landfill 3m to the southwest (ie council municipal tip) noted as Bolton Road West which operated until 1975; deposited waste included industrial and household. Landfill 101m to the south (ie Hope Mills around Broad Hey Brook) noted as Carrington Novare. No operation dates were supplied. Deposited waste included liquid sludge.
BGS recorded landfill sites:	No waste or landfill sites were recorded within a 250m.
Registered landfill sites:	No waste or landfill sites were recorded within a 250m.

7.3. HAZARDOUS SUBSTANCES

Planning hazardous substance consents:	No records within a 250m radius.
Planning hazardous substance enforcements:	No records within a 250m radius.

7.4. GEOLOGICAL

Mining Instability:	No records.
Potential for Collapsible Ground Stability Hazards:	Very low risk.
Potential for Compressible Ground Stability Hazards:	No hazard.
Potential for Ground Dissolution Stability Hazards:	No hazard.
Potential for Landslide Ground Stability Hazards:	Very low risk.
Potential for Running Sand Ground Stability Hazards:	Very low risk.
Potential for Shrinking or Swelling Clay Ground Stability Hazards:	Very low risk.
Radon Potential - Radon Affected Areas:	Within and area where less than 1% of homes at or above the action level.
Radon Potential - Radon Protection Measures:	None required.

8. COAL AUTHORITY

Entries, Adits, Shafts.	No mine entries within the local area.
Past Recorded Underground Mining.	No recorded workings of coal beneath the Site.
Shallow Unrecorded Mining.	None noted beneath the Site.
Shallow Recorded Mining.	None noted beneath the Site.

Development High Risk Area.

Not within a Development High Risk Area.

9. LOCAL KNOWLEDGE & PLANNING SEARCH

The Bury Planning Portal was accessed to search for relative documentation locally.

Documentation was found for the Ramsbottom College Hospital Site to the immediate north of the Application Site, which comprised the demolition of the former hospital and erection of 13No. residential dwellings. Within the documentation was a geo-environmental report, reference: Phase I and Phase II Geo-Environmental Site Investigation for Ramsbottom Cottage Hospital, Nuttall Lane, Ramsbottom, BL0 9LE, REC Limited, 44426p1r2, January 2013.

The report undertook (amongst other testing), boreholes which were converted into gas wells, and monitored for a period of 3 months at fortnightly intervals in accordance with CIRIA c665. Minimal made ground horizons were noted close to the Application Site. Gas results recorded maximum values of 0.2 l/h flow, 0.2 %v/v methane, and 8.4 %v/v carbon dioxide. Calculated GSVs of 0.0004 l/h methane and 0.0168 l/h were identified for the Site representative of Characteristic Situation 2 and the development requiring gas protection measures.

10. INDUSTRY PROFILES

N/A.

11. SITE RECONNAISSANCE

Site reconnaissance was undertaken on 24th April 2019.

Details of Existing Structures:	The main part of the Site is at a lower level than the entrance driveway approximately 154.00m aOD, falling from to around 152.00m aOD. Apart from a small stockpile of clean building stone and some chippings from the recent felling of trees, the Site was vacant. The ground on-site appeared to be composed of fill, and by the ground levels in the local area would suggest that this is relatively thin. There were no structures of not on-site, just tree species to the perimeters such as Leylandii, ash, and birch.
Adjacent Properties:	The Bolton Road West landfill site to the southwest was at higher level to the site, nominally 4-5m with the embankment noted to the southwest approximately 15-20m away. On reconnaissance, passive landfill vents were noted around the perimeter of the site. Residential dwellings on all other sides.
Water Levels, Directions of Flow and Rates in Rivers:	None noted locally.
Old Mine or Quarry Workings:	None noted locally.
Obvious/Immediate Hazards to Health/Safety:	None noted locally.
Areas of Discoloured Soil, Polluted Water, Vegetation, and Significant Odours:	Site appeared to be covered in a clayey made ground.
Relevant Ground Levels, Ground Water Levels, Positions of Wells and Springs:	See above.

12. IDENTIFICATION OF SOURCE-PATHWAY-RECEPTOR.

12.1. Potential Contaminants.

CURRENT SOURCE/S	ORIGINAL ASSOCIATED SOURCE	CONTAMINANT/S
MADE GROUND.	Potential for minor amounts of made ground locally from waste materials only to the western edge.	Metals/PAH/asbestos.
	Aerial contamination from past industry (mills, foundries, engineering factories, other works with chimneys); which settles in surrounding soil prior to the Site being hard surfaced.	Asbestos.
GROUND GAS.	Landfill sites locally.	CH ₄ , CO ₂ in particular.

12.2. Potential Pathways.

The potential pathways to/from the Development Site include (not an exhaustive list but a summary of the main points):

PATHWAY	MEDIA
Soil and dust ingestion	Soil and indoor dust
Consumption of home-grown fruit and vegetables	Produce
Skin contact (indoors)	Indoor dust
Skin contact (outdoors)	Soil
Inhalation of dust (indoors)	Air
Inhalation of dust (outdoors)	Air
Vapours (indoors)	Air
Vapours (outdoors)	Air

12.3. Potential Receptors.

Receptors mainly comprise workers in the construction phase, and workforce for the proposed end use.

13. PRELIMINARY CONCEPTUAL MODEL.

CURRENT SOURCE/S	ORIGINAL ASSOCIATED USAGE	CONTAMINANT TYPE	PATHWAY	RECEPTOR	POLLUTION LINKAGE	CONSEQUENCE	PROBABILITY	RISK
Made ground horizons.	Various – see potential contaminants section.	Chemical contamination.	Direct ingestion, aerial contact, dermal contact, drinking water. Contact with potential hazards.	Site construction operatives & future occupants. Site buildings.	PRESENT – Although unlikely to have encroached into the Application Site, the proximity of the local landfills suggests overspill onto the Site can't be dismissed. However, historic BH records for the Site suggest that there is no made ground.	Medium.	Low likelihood.	Moderate to low risk.
Geological ground gas.	Coal seams noted but no radon or peat sources.	CH ₄ , CO ₂ , other trace gases. Rn gas.	Diffusion through soil, substructures, aerial inhalation.	Future occupants. Explosion, suffocation.	NOT PRESENT – No worked coal seams noted at shallow depth beneath the Site, and no shafts or adits giving rise to preferential pathways. No radon risk locally.	Medium.	Unlikely.	Low risk.
Anthropogenic ground gas.	Decomposing organic material in the ground although sources all over 250m distant.	CH ₄ , CO ₂ , other trace gases.	Diffusion through soil, substructures, aerial inhalation.	Future occupants. Explosion, suffocation.	PRESENT – Multiple sources within 250m of the Site.	Severe.	Likely.	High risk.
Contaminated ground /surface water. Controlled Waters.	Made ground.	Chemical contamination.	Permeation through soil into ground water, local watercourses or aquatic habitats.	Watercourses, canal, aquatic habitats & associated wildlife.	NOT PRESENT – No evidence of major made ground with contaminants of the type to cause issues to either surface or ground water. No watercourses in close proximity, no source protection zone nearby.	Minor.	Unlikely.	Very low risk.
Aerial contaminants.	Historic local industrial activity.	Chemical contamination.	Dermal contact & aerial inhalation.	All site users / occupants.	PRESENT – Historic contamination is now be classified as shallow ground pollution in pollutant linkage 1. There are no known present emitters of aerial contamination locally.	Minor.	Unlikely.	Very low risk.

14. SITE INVESTIGATIONS.

14.1. Investigation Design from Conceptual Model

BS10175:2011+A1:2013 & R&D TECHNICAL REPORT P5-066/TR considers the upper 500mm is sufficient to categorise the ground profile for development with respect to:

- human/animal intake arising from ingestion and dermal contact;
- potential for wind entrainment leading to inhalation (of contaminated soils and dusts);
- or deposition onto neighbouring land;
- surface water run-off (e.g. due to flash flooding);
- uptake by shallow rooting plants (e.g. crops, ornamental and wild species);
- surface leaching to groundwater.

There is no definitive guidance on the number of samples required for soil representation in current guidance. However, R&D TECHNICAL REPORT P5-066/TR indicates that sample spacing should be between 10-25m for residential applications.

Considering the proposed area for soft landscaping, and the land available (not as hardstanding) predevelopment; nominally 2 soil samples representative of the upper 500mm of MADE GROUND would satisfy guidance criteria for sampling.

Soil samples should be tested for the following contaminant suites: metals, speciated PAH, inorganics & sulphates, SOM, and asbestos screening, and analysed against common threshold comparison data, specifically the Defra Category 4 Screening Levels (C4SLs) where available, then to the LQM/CIEH (S4ULs) thereafter.

All TJBA Soil analysis will use the LQM/CIEH S4ULs, and the DEFRA C4ULs. The LQM/CIEH S4UL data is the most current and comprehensive list of contaminant exposure level based on proposed end use, however, contaminant levels within S4ULs are considered 'low risk' and exceedance of S4ULs may warrant further analysis to ensure suitability for the specified end use.

The C4SL data relates to updated DEFRA Statutory Guidance under Part 2A of the Environmental Protection Act 1990 (Part 2A). The guidance introduces a 4 category system in which Category 4 is of the least concern and levels falling within this risk category are considered as 'acceptably low'.

As the S4ULs are considered more conservative than C4SLs, any contaminant levels exceeding a S4UL although not considered 'low risk' can still be considered 'acceptably low' for use within the planning regime as long as it is still within the C4SL risk category. Thus, soil sampling results are firstly held to C4SLs where available and then to S4ULs thereafter to define suitability with respect to specified proposed end uses within the planning regime.

14.2. Site Investigation (Soil Sampling) 15.03.2018.

An investigation into the existing site was undertaken on the 17.01.2022. The investigation comprised hand excavated trial holes (TPs 1-3) to max 500mm depth. Soil samples (S1-3) were collected in each hole, refer to logs below:

TP1	GL 152.10m aOD
0-400	Dark brown very slightly sandy, gravelly clay MADE GROUND with roots. Gravel sized fragments comprise brick, stone, glass, slate, pottery. Stone & brick up to cobble size. (S1).
400-500	Orange medium dense sand MADE GROUND.
500/BOH	Dark brown very slightly sandy, gravelly clay MADE GROUND. Gravel sized fragments comprise brick, stone, glass, slate, pottery. Stone & brick up to cobble size.
TP2	GL 152.05m aOD
0-300	Dark brown very slightly sandy, gravelly clay MADE GROUND with roots. Gravel sized fragments comprise brick, stone, glass, slate, pottery. Stone & brick up to cobble size. (S2).
TP3	GL 152.20m aOD
0-400	Dark brown very slightly sandy, gravelly clay MADE GROUND with roots. Gravel sized fragments comprise brick, stone, glass, slate, pottery. Stone & brick up to cobble size. (S3).

Soil samples for contamination were sealed in 1kg white plastic snap top containers, amber jars & vials where appropriate and sent to Eurofins Chemtest Ltd to be tested for a range of common contaminants. The samples were tested for metals, speciated

PAH, inorganics & sulphates, SOM, and asbestos screening analysis.

14.3. Soil Sampling Assessment

On return the sample results were assessed by TJ Booth Associates to common threshold comparison data, specifically the Defra Category 4 Screening Levels (C4SLs) where available, then to the LQM/CIEH (S4ULs) thereafter.

Samples recorded elevated contaminants above the threshold levels for as PAH benzo(ah)anthracene, and also tested positive for asbestos clumps/fibres.

Refer to TJ Booth Associates Soil Analysis Table and Chemtest Ltd sample certification in the appendix.

14.4. Gas Monitoring Assessment

No gas monitoring undertaken.

15. ENVIRONMENTAL SITE RISK SUMMARY.

15.1. Summary.

The Site is within a residential housing estate, however it was historically adjacent to a number of historic landfill Sites.

The main landfill site in the local area is the Bolton Road West Site to the southeast nominally 15-20m distant. The site is banked up with a plateau that sits nominally 4-5m higher than the Application Site. This site was a municipal tip historically and as such is likely filled with ash and other household items of a putrescible nature. The passive landfill vents around the site suggest this is the case.

In addition, reports for other development sites around the local area such as the Ramsbottom College Hospital Site, identified a Characteristic 2 gassing regime.

The other local "historic landfill" sites are now part of area known as the "Carrington Novare" landfill – parts of historic infilled pockets of land which appear to have been undertaken to provide more usable ground area for the former Hope Mills. Generally, these types of sites are primarily filled with material such as clay & building rubble. This material does not generally produce ground gas.

Limited on-site investigations and soil sampling have revealed a slightly sandy, gravelly clay MADE GROUND with gravel sized fragments of brick, stone, glass, slate, pottery.

The soil samples have been analysed and found unsuitable from a residential risk perspective having noted elevated PAH, and asbestos. The existing soil will have to be remediated for it to be considered suitable for the proposed end use.

Coal mining and radon are not considered an issue locally.

16. FINAL CONCEPTUAL MODEL.

CURRENT SOURCE/S	ORIGINAL ASSOCIATED USAGE	CONTAMINANT TYPE	PATHWAY	RECEPTOR	POLLUTION LINKAGE	CONSEQUENCE	PROBABILITY	RISK
Made ground horizons.	Various – see potential contaminants section.	Chemical contamination.	Direct ingestion, aerial contact, drinking water. Contact with potential hazards.	Site construction operatives & future occupants. Site buildings.	PRESENT – Site investigations have recorded elevated PAH, and asbestos in the made ground horizons on-site. The risk remains to the proposed end user.	Medium.	Low likelihood.	Moderate to low risk.
Anthropogenic ground gas.	Decomposing organic material in the ground although sources all over 250m distant.	CH ₄ , CO ₂ , other trace gases.	Diffusion through soil, substructures, aerial inhalation.	Future occupants. Explosion, suffocation.	PRESENT – In particular the Bolton Road West landfill site to the southwest has gas vents and the adjacent development Site has identified the local area as a Characteristic Situation 2 area. The risk remains to the proposed end user.	Severe.	Likely.	High risk.

17. REMEDIATION STRATEGY

17.1. Ground/Soil Contamination Risk

The site has been found to comprise made ground and soil sampling has recorded elevated contaminants which are not suitable for a residential end use.

Due to the contamination noted, a minimum 600mm cover layer between external finishes and the existing material is proposed to break the pollutant linkage pathway to contaminated soils beneath.

However, it is noted that the parts of the Site are to be infilled to provide access and due to reprofiling with the surrounding landscape.

Because of this, parts of the Site will be provided with a cover layer up to max 2m thick.

Where this is not the case or the cover between existing soil and finished external level is less than 600mm; excavation of the existing soil will be required to ensure 600mm of cover in garden areas/soft landscaping only. Contaminated soils may remain below areas of permanent hardstanding.

All proposed fill materials should be clean and inert, engineering grade 6F2 or similar.

Imported soil should be clean/inert and free from deleterious materials, and should be suitable for use in a residential end use setting. Imported soil should be able to pass testing of the following potential contaminant suites to current Defra Category 4 Screening Levels (C4SLs) where available, and then to the LQM/CIEH (S4ULs), for use in a residential end use setting: metals, speciated PAH, inorganics & sulphates, SOM, and asbestos screening.

17.2. Ground Gas Risk

No site investigations have been undertaken with respect to ground gas risk on the site. However, the area is known to be a risk from ground gas due to the local historic landfills, particularly the Bolton Road West site.

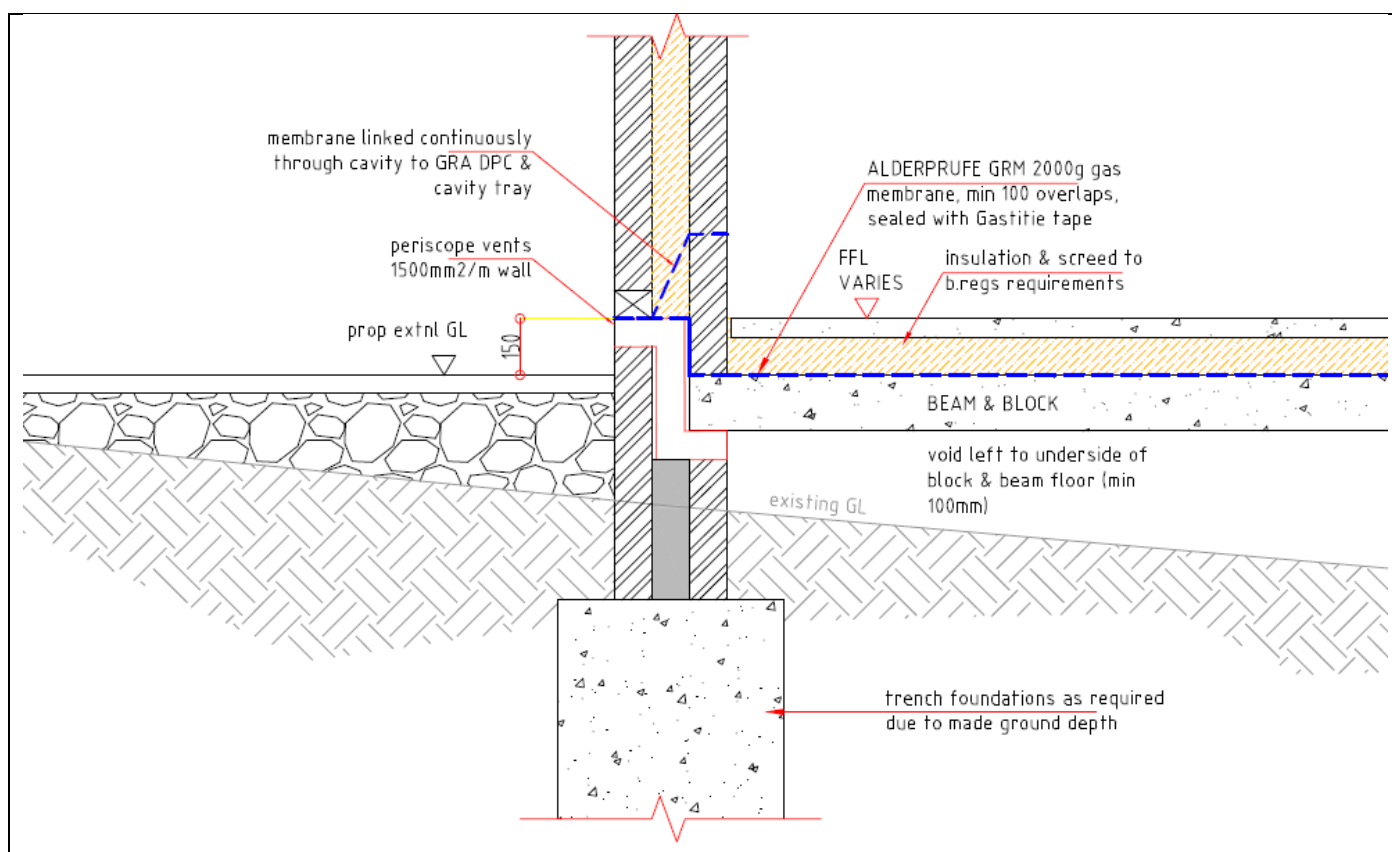
Local developments have identified a Characteristic Situation 2 gas regime locally.

The proposed floor level is approximately 850mm above current site levels and there is at least 500mm of fill identified on limited investigations, which precludes ground bearing floor slabs. The client has indicated preference for a block and beam floor construction.

In lieu of on-site monitoring, it is proposed to mirror local developments and install CS2 protective measures in the proposed development building foundations which would comprise a minimum score of 3.5 (from at least two sources) in accordance with BS8485:2019:

CS2 GAS PROTECTIVE MEASURES		BS8485:2019 score required: 3.5
FOUNDATION TYPE: Traditional/trench		
SLAB	Beam & block (minimum score vs suspended slab)	0
MEMBRANE	Reinforced gas membrane Alderprufe GRA comprising <40ml/day/m ² CH ₄ transmission rate, >0.4mm thick. All joints and penetrations sealed to manufacturers details & specifications.	2
VOID/SUBSPACE	Void min 100mm thick.	2.5
VENTS	1500mm ² /m wall (<15m wide building), 2000mm ² /m for larger buildings. Both account for regulations up to CS3.	

Due to using a block and beam construction method with a void below, the protective score afforded by the design would comprise a score of 4.5 which provides gas protection up to CS3. Refer to following gas protection detail:



17.3. Validation:

Imported topsoil should only be independently tested should it be required by the Environmental/Building Control Departments. However, as a minimum, topsoil certification should be presented to the Environmental/Building Control Departments to ensure clean inert soil is suitable for use in a residential development.

If independent testing is required, remedial measures should be validated and comprise the following:

- Soil import for gardens/soft landscaping areas should be sampled at the rate of 1:200m³ from a proven greenfield source, and 1:50m³ from an unknown/brownfield source; not less than 3 samples to be taken for each.
- Soil import should be tested for the following contamination suites: metals, inorganics, PAH USEPA16 speciated, and asbestos screening. Results will be analysed against Defra Category 4 Screening Levels (C4SLs) where available, and then to the LQM/CIEH (S4ULs), for use in a residential end use setting.
- Taped trial pits showing suitable cover depth for garden soils.
- Photographic evidence of the installation of all parts of the gas protection measures membranes.

The above should be analysed by suitably qualified & competent persons, and reported upon accordingly in a site completion/validation/verification report detailing validation procedures, analysis, subsoil/topsoil import sample certification as required, documentary/photographic evidence to the satisfaction of the LPA.

17.4. Additional Notes

Should any suspected unidentified contamination be encountered throughout the groundworks or construction phase of the development: all works should cease, the relevant area isolated, and potential contamination assessed by professional & competent persons detailing further recommendations & remedial measures to be approved by the LPA.

Before any further work is undertaken, this report should be submitted to and agreed by the Local Planning Authority Contaminated Land Department.

We trust that the above clear, but should you require further advice please contact the undersigned.

Signed.....

D.S.Slattery BSc (Hons).

T J Booth Associates.

Authorised.....

T J Booth BSc (Hons), C. Eng. C. Env. MICE.

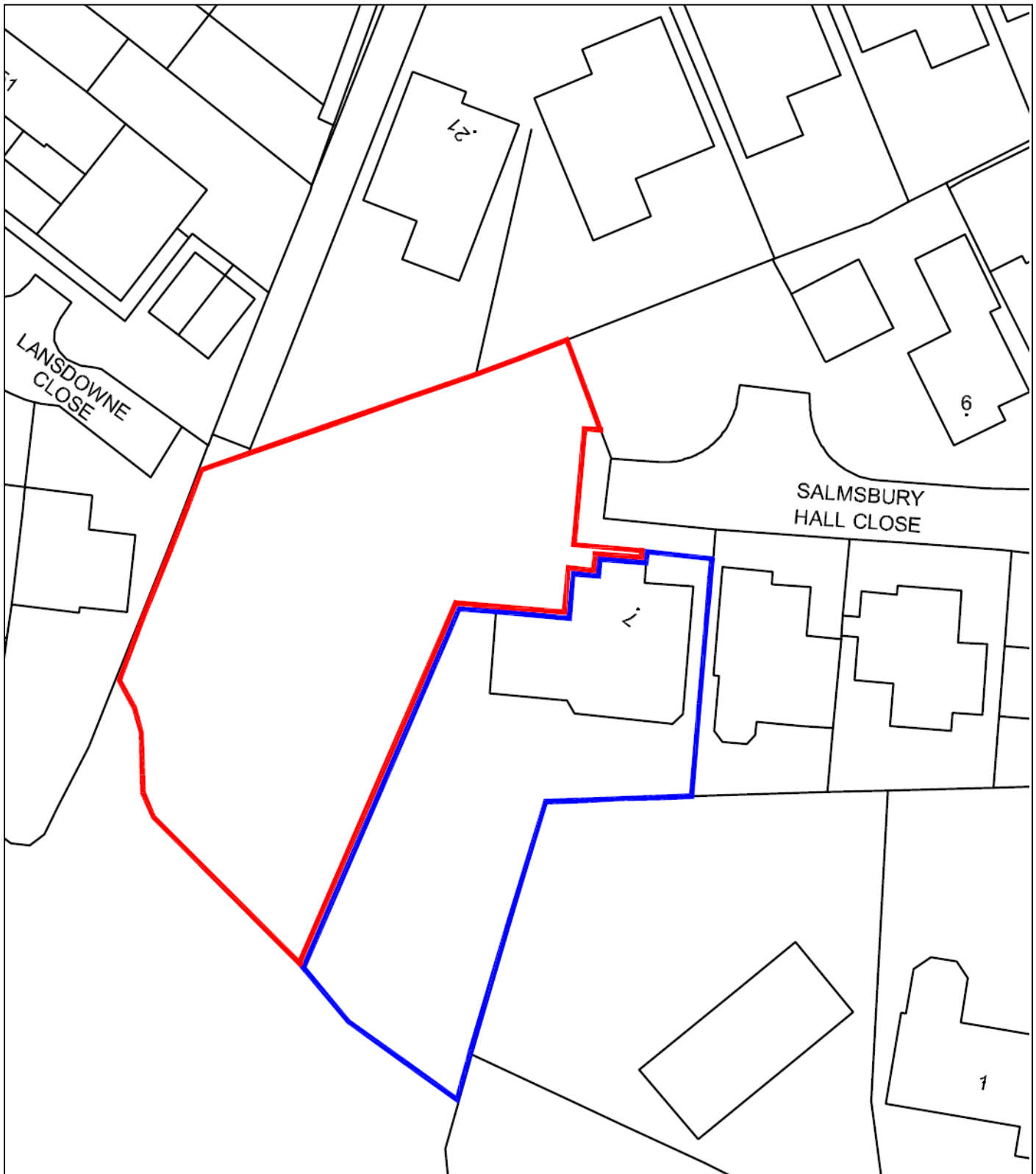
T J Booth Associates.

18. REFERENCES

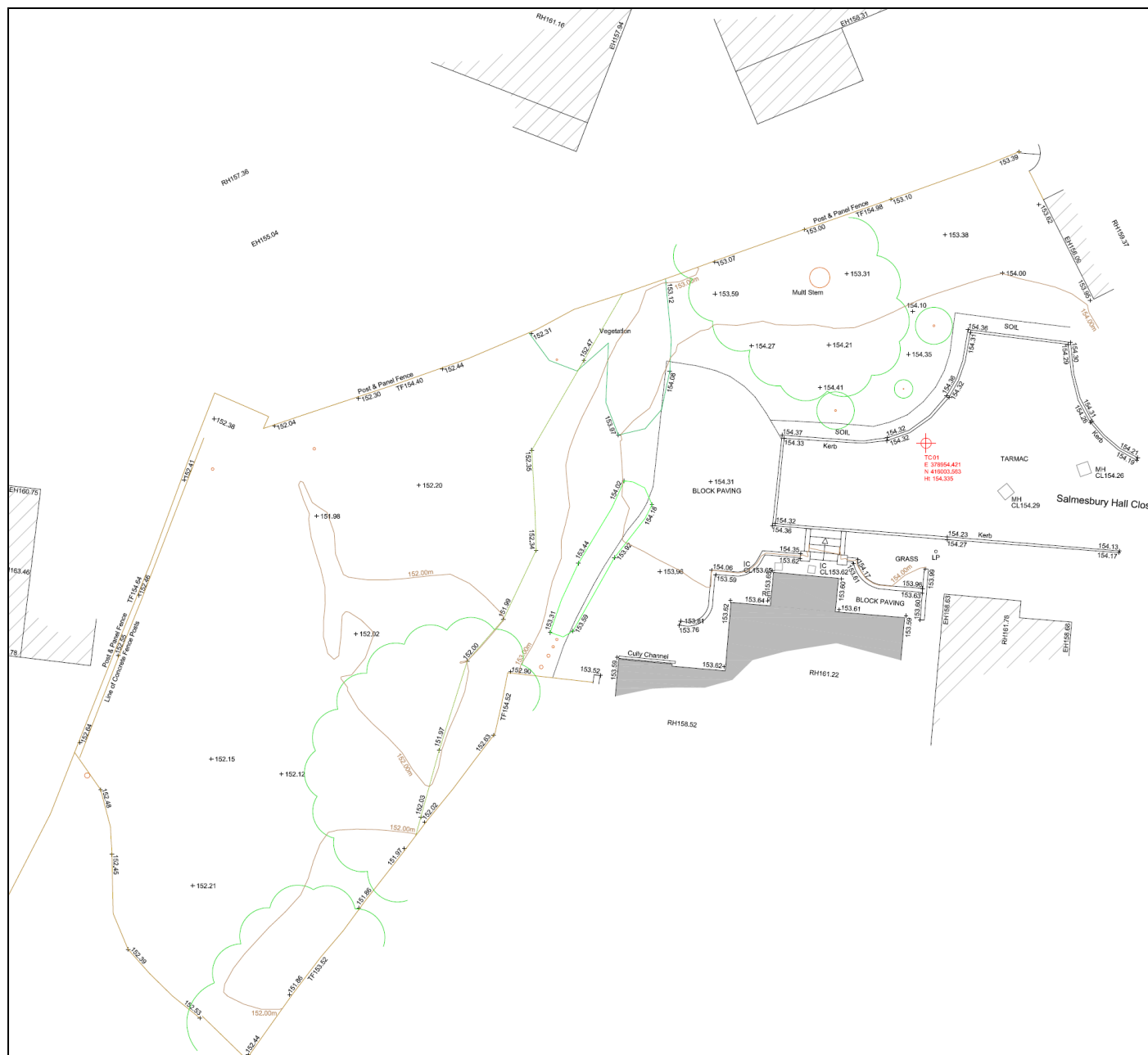
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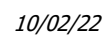
19. APPENDIX A: FIGURES

19.1. Location Plan

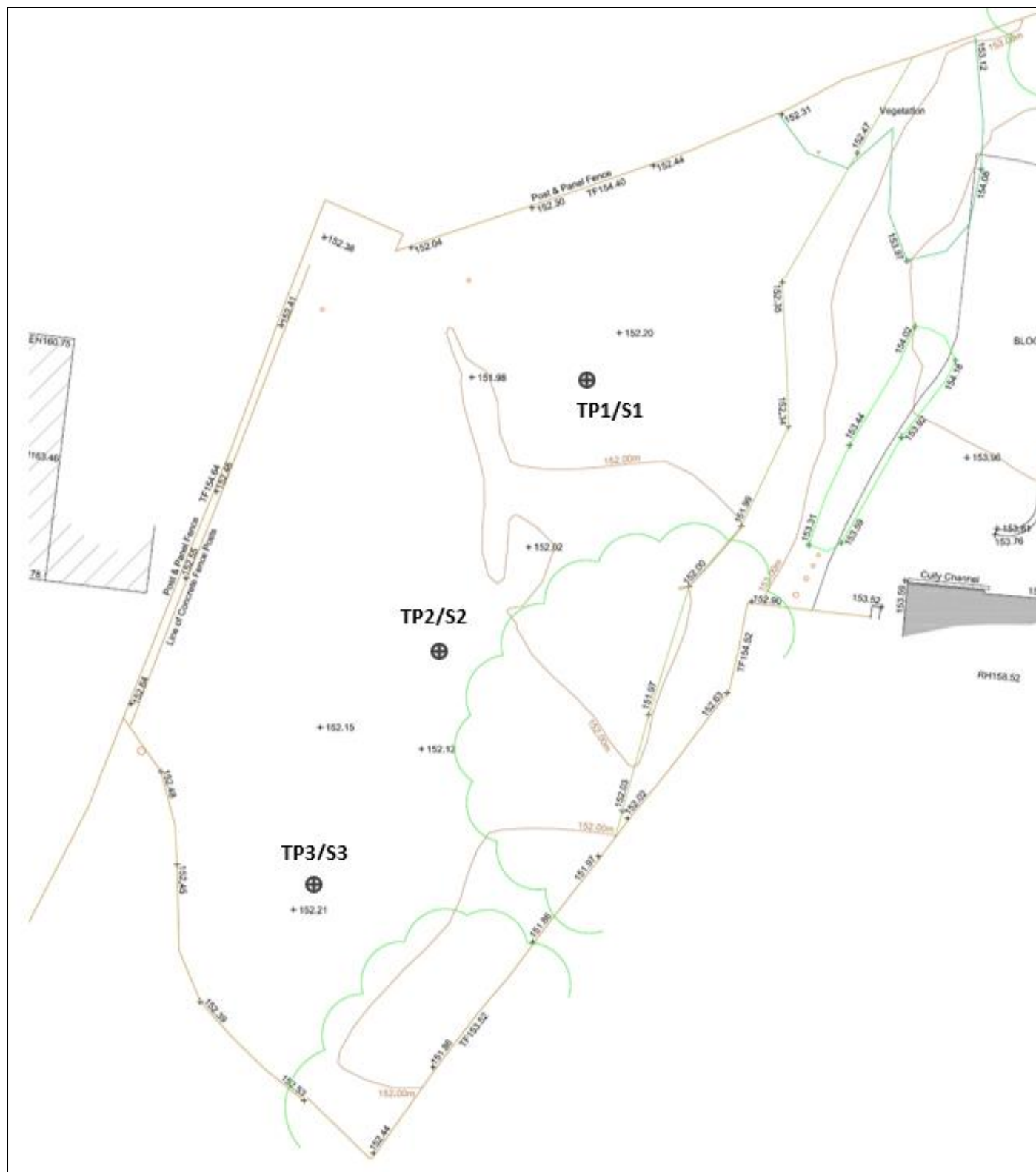


19.2. Existing Site Plan/Topographic Survey





19.4. Site Investigation Plan



19.5. TJBA Soil Analysis

Client / Site		Heron - 7 Salmesbury Hall Close,						
Sampling Date		17.01.2022						
Comparison of Contamination Test Results with Thresholds (mg/kg)								
Contaminant		No	Max	Mean	t 95	RESIDENTIAL (with or without plant uptake)		
						Pass/Fail	Comment	
METALS	Arsenic as As, dry weight	3	9.9	7.6	9.71	37	PASS	
	Boron as B, hot water sol dw	3	0.59	0.4633	0.571	290	PASS	
	Cadmium as Cd, dry weight	3	0.25	0.2167	0.248	22	PASS	
	chromium as Cr(III) dry weight	3	24	21.33	23.70	910	PASS	
	Chromium as Cr(VI), dry weight	3	0.5	0.5	0.5	21	PASS	
	Copper, as Dry Weight	3	24	23.333	24	2400	PASS	
	Lead, as Dry Weight	3	130	97.667	128	200	PASS	
	Mercury as Hg, dry weight	3	0.22	0.15	0.211	1.2	PASS	
	Nickel as Ni, dry weight	3	19	18.667	19	130	PASS	
	Selenium as Se, dry weight	3	0.2	0.2	0.2	250	PASS	
	Zinc as Zn, dry weight	3	87	72	85.8	3700	PASS	
INORGANIC	Cyanide (Total)	3	0.5	0.5	0.5	2.5	PASS	
	Sulphate (Total) as SO4	3	0.15	0.113	0.146	0.24	PASS	
	Sulphide	3	6.7	5.8667	6.67	250	PASS	
	pH	3	8.8	8.8	8.8	6 to 8	ALKALINE	
	Sulphur (Elemental)	3	8.5	6.2667	8.47	100	PASS	
	Asbestos Identification	3	1	0.3333	0.9	0	FAIL	
ORGANIC	SOM	3	6.6	4.8667	6.34			
	PAH acenaphthene	3	0.1	0.1	0.1	1100	PASS	
	PAH acenaphthylene	3	0.1	0.1	0.1	920	PASS	
	PAH anthracene	3	0.3	0.1767	0.283	11000	PASS	
	PAH benzo[a]anthracene	3	1.5	1.0167	1.443	13	PASS	
	PAH benzo[a]pyrene	3	1.2	0.64	1.142	5	PASS	
	PAH benzo[b]fluoranthene	3	1.7	1	1.65	3.7	PASS	
	PAH benzo[g,h,i]perylene	3	1.9	1.0333	1.82	350	PASS	
	PAH benzo[k]fluoranthene	3	0.92	0.5833	0.901	100	PASS	
	PAH chrysene	3	1.8	1.2467	1.73	27	PASS	
	PAH dibenz[ah]anthracene	3	0.32	0.2233	0.313	0.3	FAIL	
	PAH fluoranthene	3	2.4	1.4567	2.28	890	PASS	
	PAH fluorene	3	0.1	0.1	0.1	860	PASS	
	PAH indeno[123-cd]pyrene	3	1.1	0.7667	1.1	41	PASS	
	PAH napthalene	3	0.1	0.1	0.1	13	PASS	
	PAH phenanthrene	3	1	0.58	0.964	440	PASS	
	PAH pyrene	3	2.5	1.5367	2.38	2000	PASS	
	PAH PAH (Total - SUM EPA16)	3	17	10	16.3	1	comment	
	SVOC	phenol	3	0.1	0.1	0.1	380	PASS

19.6. Chemtest Ltd Soil Chemical Results & Certification



eurofins | **Chemtest**
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-01962-1		
Initial Date of Issue:	02-Feb-2022		
Client	TJ Booth Associates		
Client Address:	20a Eastgate Street Rochdale Lancs OL16 1DH		
Contact(s):	Daniel Slattery		
Project	Heron - 7 Salmesbury Hall Close, Ramsbottom		
Quotation No.:	Q19-18321	Date Received:	20-Jan-2022
Order No.:		Date Instructed:	20-Jan-2022
No. of Samples:	3		
Turnaround (Wkdays):	10	Results Due:	02-Feb-2022
Date Approved:	02-Feb-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: Heron - 7 Salmesbury Hall Close, Ramsgate									
Client: TJ Booth Associates									
Quotation No. Q19-18021	Chemist Job No.:		22-01962	22-01962		22-01962	22-01962		22-01962
	Client Sample ID.:		1355372	1355372		1355372	1355372		1355372
	Sample Location:		TP1	TP1		TP1	TP2		TP3
	Sample Type:		SOIL	SOIL		SOIL	SOIL		SOIL
	Top Depth (m):		0.00	0.00		0.00	0.00		0.00
	Bottom Depth (m):		0.30	0.30		0.30	0.30		0.30
	Date Sampled:		17-Jan-2022	17-Jan-2022		17-Jan-2022	17-Jan-2022		17-Jan-2022
	Asbestos Lab:		COVENTRY	COVENTRY		COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD	Units	LOD	Units	LOD	Units
ACM Type	U	2192		N/A		N/A	Fibres/Clumps		-
Asbestos Identification	U	2192		N/A		N/A	No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	18	16	Fibres/Clumps		14
pH	U	2010		4.0	8.8	8.8	Amosite		8.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.59	<0.40	Amosite		<0.40
Sulphur (Elemental)	U	2180	mg/kg	1.0	2.1	8.5	Amosite		8.2
Cyanide (Total)	U	2300	mg/kg	0.50	<0.50	<0.50	Amosite		<0.50
Thiocyanate	U	2300	mg/kg	5.0	<5.0	<5.0	Amosite		<5.0
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	4.5	6.4	Amosite		6.7
Sulphide (Total)	U	2430	mg/kg	100	1500	1100	Amosite		790
Arsenic	U	2450	mg/kg	1.0	9.9	8.0	Amosite		4.9
Cadmium	U	2450	mg/kg	0.10	0.25	0.23	Amosite		0.17
Chromium	U	2450	mg/kg	1.0	24	19	Amosite		21
Copper	U	2450	mg/kg	0.50	24	24	Amosite		22
Mercury	U	2450	mg/kg	0.10	0.13	0.22	Amosite		0.10
Nickel	U	2450	mg/kg	0.50	19	18	Amosite		19
Lead	U	2450	mg/kg	0.50	130	110	Amosite		53
Selenium	U	2450	mg/kg	0.20	<0.20	0.20	Amosite		<0.20
Zinc	U	2450	mg/kg	0.50	87	75	Amosite		54
Chromium (Hexavalent)	N	2490	mg/kg	0.50	<0.50	<0.50	Amosite		<0.50
Organic Matter	U	2625	%	0.40	4.0	6.6	Amosite		4.0
Naphthalene	U	2700	mg/kg	0.10	<0.10	<0.10	Amosite		<0.10
Acenaphthylene	U	2700	mg/kg	0.10	<0.10	<0.10	Amosite		<0.10
Acenaphthene	U	2700	mg/kg	0.10	<0.10	<0.10	Amosite		<0.10
Fluorene	U	2700	mg/kg	0.10	<0.10	<0.10	Amosite		<0.10
Phenanthrene	U	2700	mg/kg	0.10	1.0	0.64	Amosite		<0.10
Anthracene	U	2700	mg/kg	0.10	0.30	0.13	Amosite		<0.10
Fluoranthene	U	2700	mg/kg	0.10	2.4	1.2	Amosite		0.77
Pyrene	U	2700	mg/kg	0.10	2.5	1.3	Amosite		0.81
Benzo[a]anthracene	U	2700	mg/kg	0.10	1.5	0.93	Amosite		0.62
Chrysene	U	2700	mg/kg	0.10	1.8	1.1	Amosite		0.84
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	1.7	1.2	Amosite		<0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.92	0.73	Amosite		<0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	1.2	0.62	Amosite		<0.10
Indeno[1,2,3-c,d]pyrene	U	2700	mg/kg	0.10	1.1	1.1	Amosite		<0.10

Results - Soil

Project: Heron - 7 Salmsbury Hall Close, Ramsgate									
Client: TJ Booth Associates									
Quotation No.: Q19-18321	Chemist Job No.:	22-01962	22-01962	22-01962	22-01962	22-01962	22-01962	22-01962	22-01962
	Chemist Sample ID.:	1355372	1355373	1355374	1355375	1355376	1355377	1355378	1355379
	Client Sample ID.:	S1	S2	S3	S4	S5	S6	S7	S8
	Sample Location:	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8
	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bottom Depth (m):	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	Date Sampled:	17-Jan-2022	17-Jan-2022	17-Jan-2022	17-Jan-2022	17-Jan-2022	17-Jan-2022	17-Jan-2022	17-Jan-2022
	Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
	Accred.	SOP	Units	LOD					
Determinand	U	2700	mg/kg	0.10	0.25	0.32	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	1.9	1.1	< 0.10	< 0.10	< 0.10
Benzo(b)fluoranthene	U	2700	mg/kg	2.0	17	10	3.0	3.0	3.0
Total Of 16 PAHs	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phthalates									

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
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	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.
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; Dibenzo[a,h]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 Trimethylphenols. Note: 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

19.7. Local BGS BH Records

19.7.1. BH Record for 7 Salmsbury Hall Close

STIFFINE 7894 1598 163

STRATA SURVEYS LTD., HOLMES CHAPEL ROAD, MIDDLEWICH, CHESHIRE. CW10 0JB Telephone: 0606 84 4637 Fax: 0606 84 6657						Borehole Number : 6 Sheet 1 of 2 Depth 0 to 10 metres Dates : 8-9 JUN 89						
Job Number : 4921 Location : Nuttall Lane Client : Lovell						Dia. & Drilling Methods 150mm Diameter light cable percussion Drilled by T.B./Logged by S.L.						
Description of Strata	Red. Level	Legend	Thick-ness	Depth	Sample Depths	Sample Types	N Value	Cu	#	Water Level	Pie-zo	Daily Prog.
Topsoil	151.68		(0.20)	0.00								
Soft brown sandy CLAY	151.48		(0.20)	0.20								
Dark grey clayey, becoming slightly clayey silty fine to medium grained SAND with some bands of silty clay	151.28			0.40	0.50 - 0.95	U 1		64	26			
			(1.10)	1.00		D 1						
Very soft grey laminated silty CLAY with some sand	150.18			1.50	1.50 - 1.95	U 2		12	0			
			(1.50)	2.00		D 2						
				2.50	2.50 - 2.95	U 3						
				3.00		D 3						
Soft to firm greyish brown laminated silty slightly sandy CLAY	148.68		(1.00)	3.50	3.50 - 3.95	U 4						
				4.00		D 4						
Firm grey silty slightly sandy CLAY with bands of silt and occasional fine sandstone gravel	147.68		(0.90)	4.50	4.50 - 4.90	U 5						
				4.90								
Laminated brown wet slightly clayey silty fine grained SAND grading to clayey fine sandy SILT	146.78		(1.90)	5.30	5.30 - 5.75	U 6		41	0			
				5.70		D 5						
				6.00	6.00 - 6.45	U 7						
				6.80		D 6						
Firm brown silty sandy CLAY with some fine to medium gravel (Boulder Clay)	144.88		(0.40)	6.90	6.90 - 7.20	U 8		26	9			
	144.48			7.00	7.00 - 7.45							
Laminated grey brown fine sandy SILT with thin bands of soft clay			(1.20)	8.00		D 7						
				8.40	8.40 - 8.95	S 1	N 18					
Medium dense brown fine to medium, occasionally coarse grained SAND with some gravel from 9.20m	143.28		(1.40)	9.50	9.50 - 9.95	S 2	N 19					
				9.80								
Soft brown sandy CLAY with some fine to medium gravel (Boulder Clay)	141.88		(0.90)	10.00								
Borehole Continued												
Key : U Undisturbed D Disturbed B Bulk Disturbed W Water P Piston S SPT						In-Situ Tests N N Value + Sampler Sank Progress / Water Levels — Borehole Depth — Casing Depth V Water Level V Water Strike			General Remarks : Water strike @ 8.40m, rising to 6.90m after 20 mins. Water level standing @ 7.60m, am 9/6. 1 hour with tools stuck in clay.			

SD FINE 163

STRATA SURVEYS LTD., HOLMES CHAPEL ROAD, MIDDLEWICH, CHESHIRE. CW10 0JB Telephone: 0606 84 4637 Fax: 0606 84 6657						Borehole Number : 6 Sheet 2 of 2. Depth 10 to 20 metres Dates : 8-9 JUN 89						
Job Number : 4921 Location : Nuttall Lane Client : Lovell						Dia. & Drilling Methods 150mm Diameter light cable percussion Drilled by T.B./Logged by S.L.						
Description of Strata	Red. Level	Legend	Thick- ness	Depth #	Sample Depths	Sample Types	N Value	Cu	s	Water Level	Pie- zo	Daily Prog.
Soft brown sandy CLAY with some fine to medium gravel (Boulder Clay)	140.98	(0.90)	10.00	10.00 - 10.35	U 9							
Medium dense brown slightly clayey silty fine grained SAND with occasional fine gravel grading to soft to firm grey very sandy gravelly CLAY from 11.70m	138.88	(2.10)	10.70	11.00 - 11.45	S 3	N 18						
			11.70	11.70 - 12.00	U 10							8/6
Very stiff brown sandy gravelly CLAY with occasional bands of sand/gravel (Boulder Clay)	136.68	(2.20)	12.80	13.00 - 13.45	U 11			158	10			
			13.50	14.30 - 14.65	D 8							
			15.00	15.00	U 12							
Borehole Completed					D 9							9/6
Key : In-Situ Tests N N Value + Sampler Sank Sample Types U Undisturbed D Disturbed B Bulk Disturbed W Water P Piston S SPT Progress / Water Levels — Borehole Depth — Casing Depth V Water Level V Water Strike						General Remarks : Water strike @ 8.40m, rising to 6.90m after 20 mins. Water level standing @ 7.60m, am 9/6. 1 hour with tools stuck in clay.						

19.7.2. BH Record for Hope Mill Site

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far ..	THICKNESS		DEPTH		
		Feet ..	Inches ..	Feet ..	Inches ..	
British Geological Survey	British Geological Survey			British Geological Survey		T. Mohr
	Stiff clay	8	—	8	0	2.44 2.44
	Blue clay	16	—	24	0	4.87 7.31
	Sandy clay	18	—	42	0	5.49 12.80
	Fine sand	12	—	54	0	3.66 16.46
	Sand, clay & stones	23	—	77	0	7.01 23.47
	Sand	5	—	81	0	1.22 24.69
	Clay	10	—	91	0	3.05 27.74
British Geological Survey	Clay sand & gravel	23	—	114	0	7.01 34.75
	Fine sand	12	—	126	0	3.66 38.41
	Blue clay	6	—	132	0	1.82 40.23
	Rock	7	—	139	0	2.14 42.37
	Brown rock	9	—	148	0	2.74 45.11
	Red sandstone	17	—	165	0	5.18 50.29
	Sandstone	20	—	185	0	6.10 56.39
	Bands of rock & clay	25	—	210	0	7.62 64.01
	Shales with thin bands of rock	15	—	225	0	4.57 68.58
British Geological Survey	Shale	90	—	315	0	27.43 96.01
	Grey rock	18	—	333	0	5.49 101.50
	Shale	98	—	431	0	29.87 131.37
	? ?	—	6	431	6	0.15 131.52
	Shale & slaty grey rock	5	6	437	0	1.68 133.20
	Fine clay	8	—	445	0	2.44 135.64
	Grey rock	21	6	466	6	6.55 142.99
	Shale	41	6	508	0	12.65 154.84
British Geological Survey	Rock	47	—	555	0	14.32 169.16
	Coaly shale	—	6	555	6	0.16 169.32
	Grey rock	76	6	632	0	23.31 192.63

20. APPENDIX B: PHOTOS



Figure 1 – View to northeast.



Figure 2 – View to southwest.



Figure 3 – Trial Pit 1.



Figure 4 – Trial Pit 2.



Figure 5 – Trial Pit 3.



Figure 6 – Offsite landfill embankment to southeast.

21. APPENDIX C: ENVIROCHECK



Envirocheck® Report:

Datasheet

Order Details:

Order Number:

289157539_1_1

Customer Reference:

heron-7 salmesbury hall cl-landmark-211221

National Grid Reference:

378930, 415990

Slice:

A

Site Area (Ha):

0.09

Search Buffer (m):

1000

Site Details:

7, Salmesbury Hall Close

Ramsbottom

Bury

BL0 9FG

Client Details:

Mr T Booth

TJ Booth Associates

20a Eastgate Street

Rochdale

Lancashire

OL16 1DH



Order Number: 289157539_1_1

Date: 21-Dec-2021

rpr_ec_datasheet v53.0

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Envirocheck®

LANDMARK INFORMATION GROUP®

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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/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

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Summary

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 3				10
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls	pg 5				1
Integrated Pollution Prevention And Control	pg 5				2
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 6		1	1	2
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 6			Yes	
Pollution Incidents to Controlled Waters	pg 6			2	18
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 10			1	1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 10				1
Water Abstractions	pg 10		1	2	17 (*38)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 24	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 25	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 25	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 25			25	112

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Summary

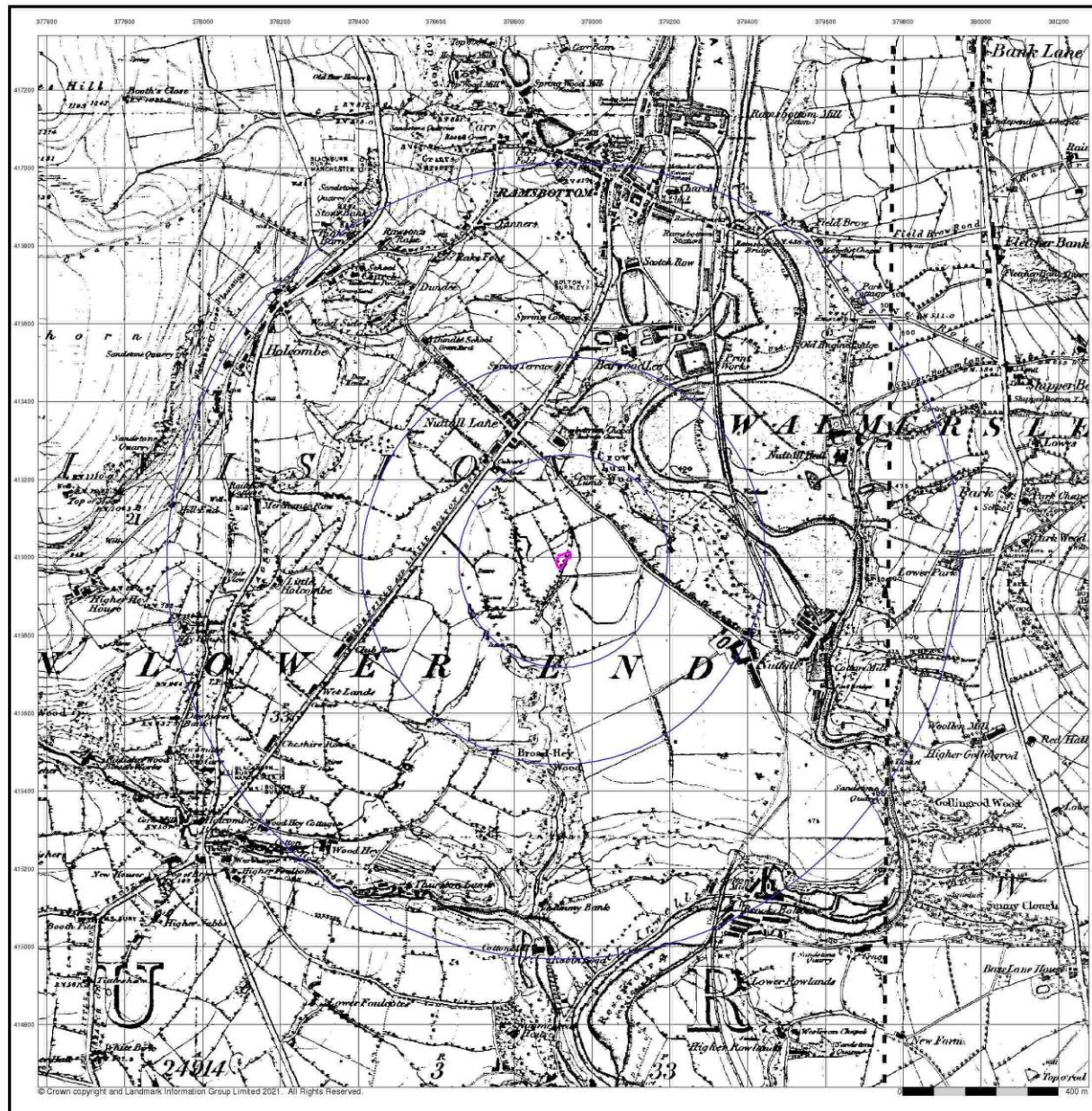
Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 41	1	2		3
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 42				1
Licensed Waste Management Facilities (Locations)	pg 42			1	1
Local Authority Landfill Coverage	pg 42	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites	pg 43				2
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 44				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 45	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 45	Yes	n/a	n/a	n/a
Mining Instability	pg 45	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 45	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 45	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 45		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 45	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 45	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 46	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

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 47		2	18	65
Fuel Station Entries	pg 54				1
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 55		1		2
Areas of Adopted Green Belt	pg 55			1	
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 55				1
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					



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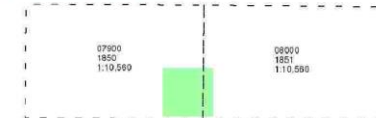
Lancashire And Furness

Published 1850 - 1851

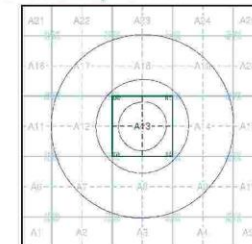
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Customer Ref: heron-7 salmsbury hall cl-landmark-211221

National Grid Reference: 378930, 415990

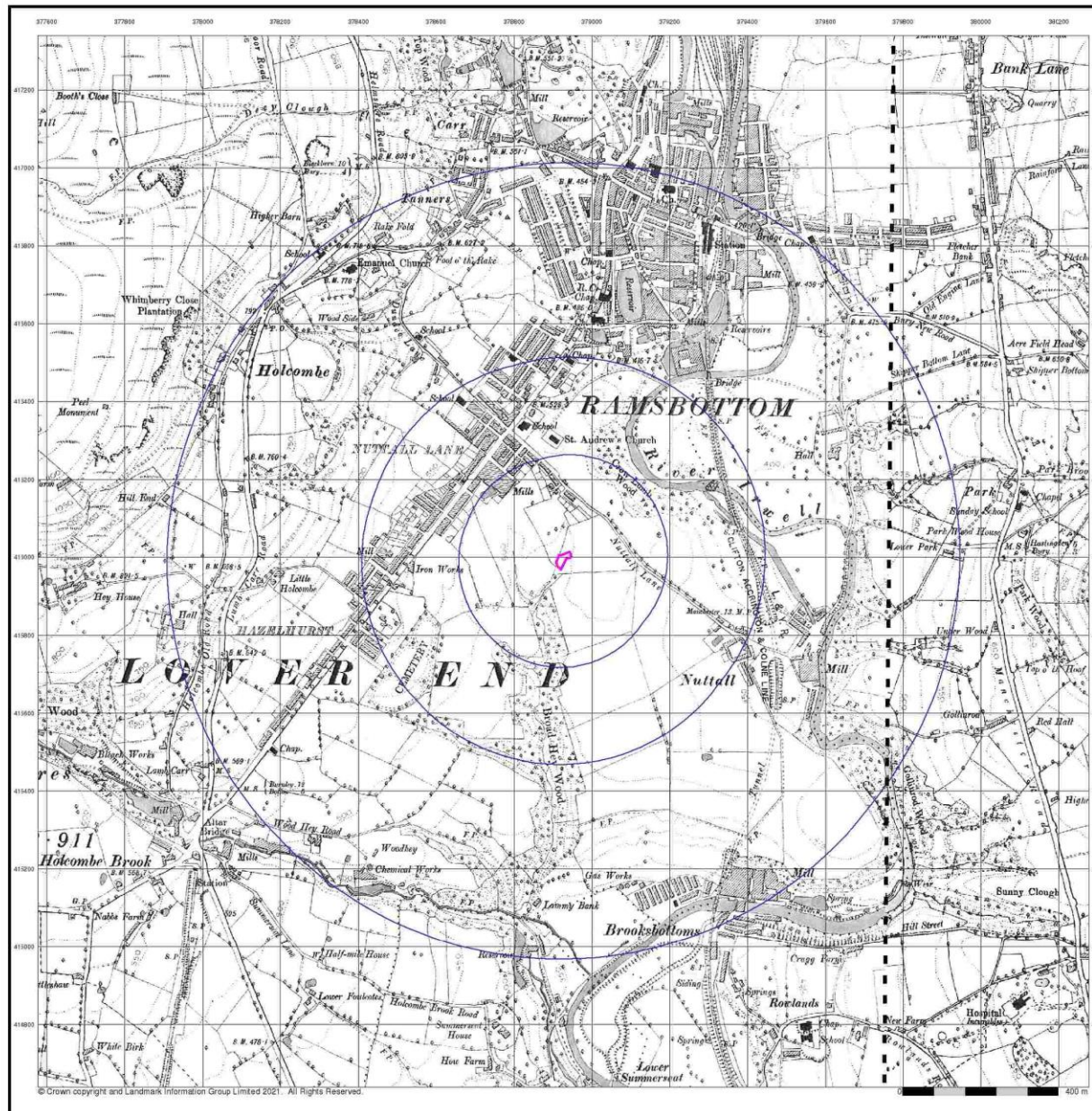
Slice: A
Site Area (Ha): 0.09
Search Buffer (m): 1000

Site Details

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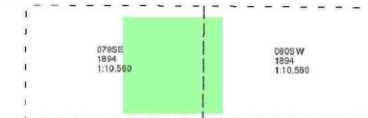
Lancashire And Furness

Published 1894

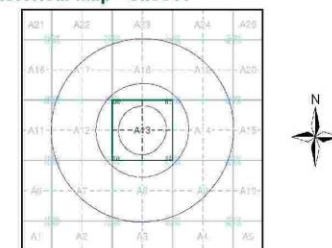
Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

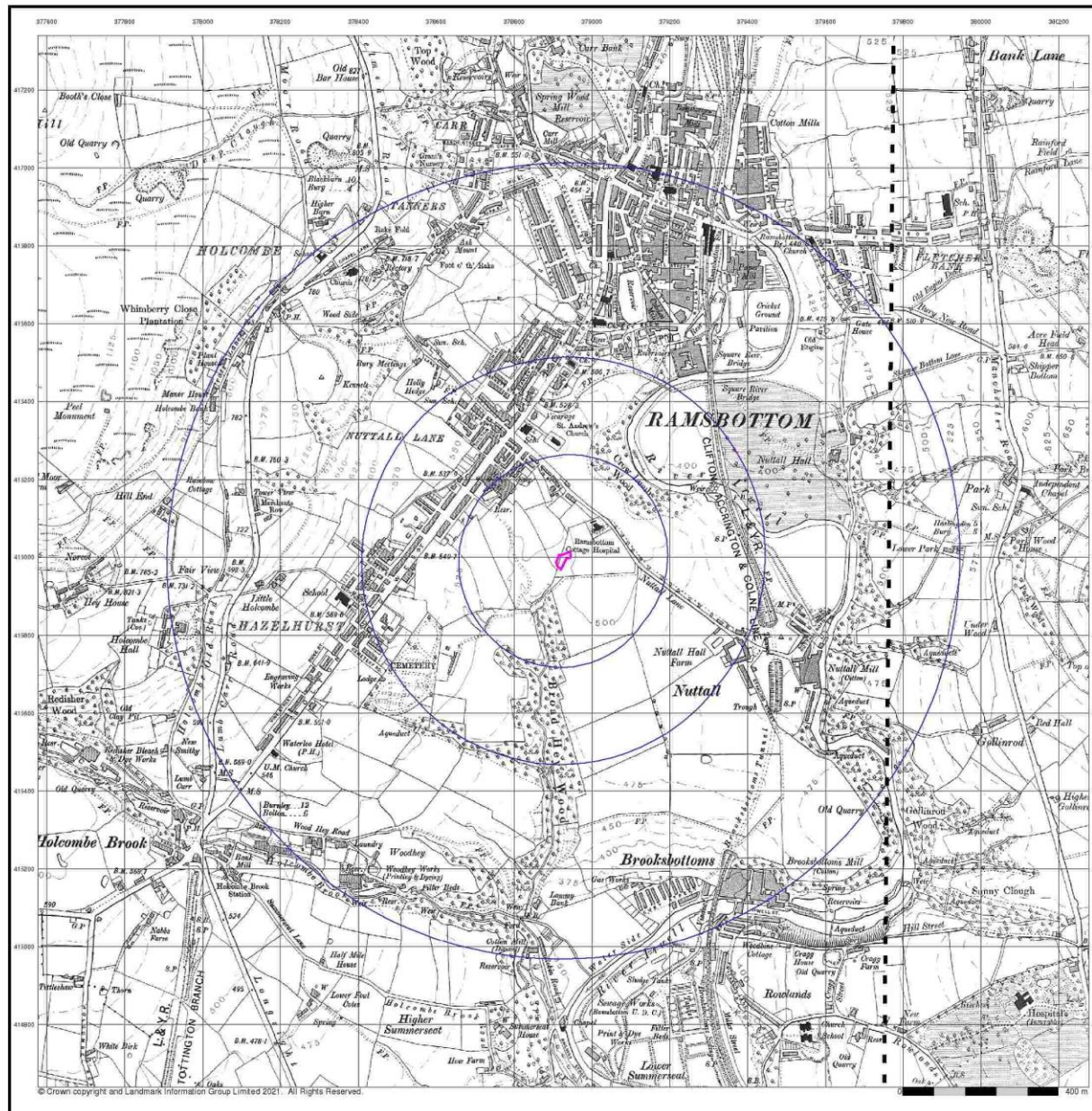
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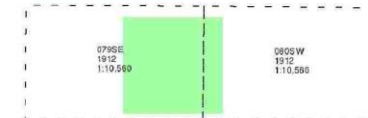
Lancashire And Furness

Published 1912

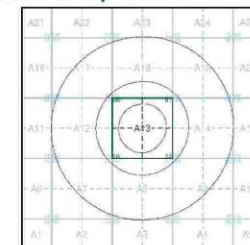
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas, these maps were used to update the 1:10,560 maps. 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: 378930, 415990

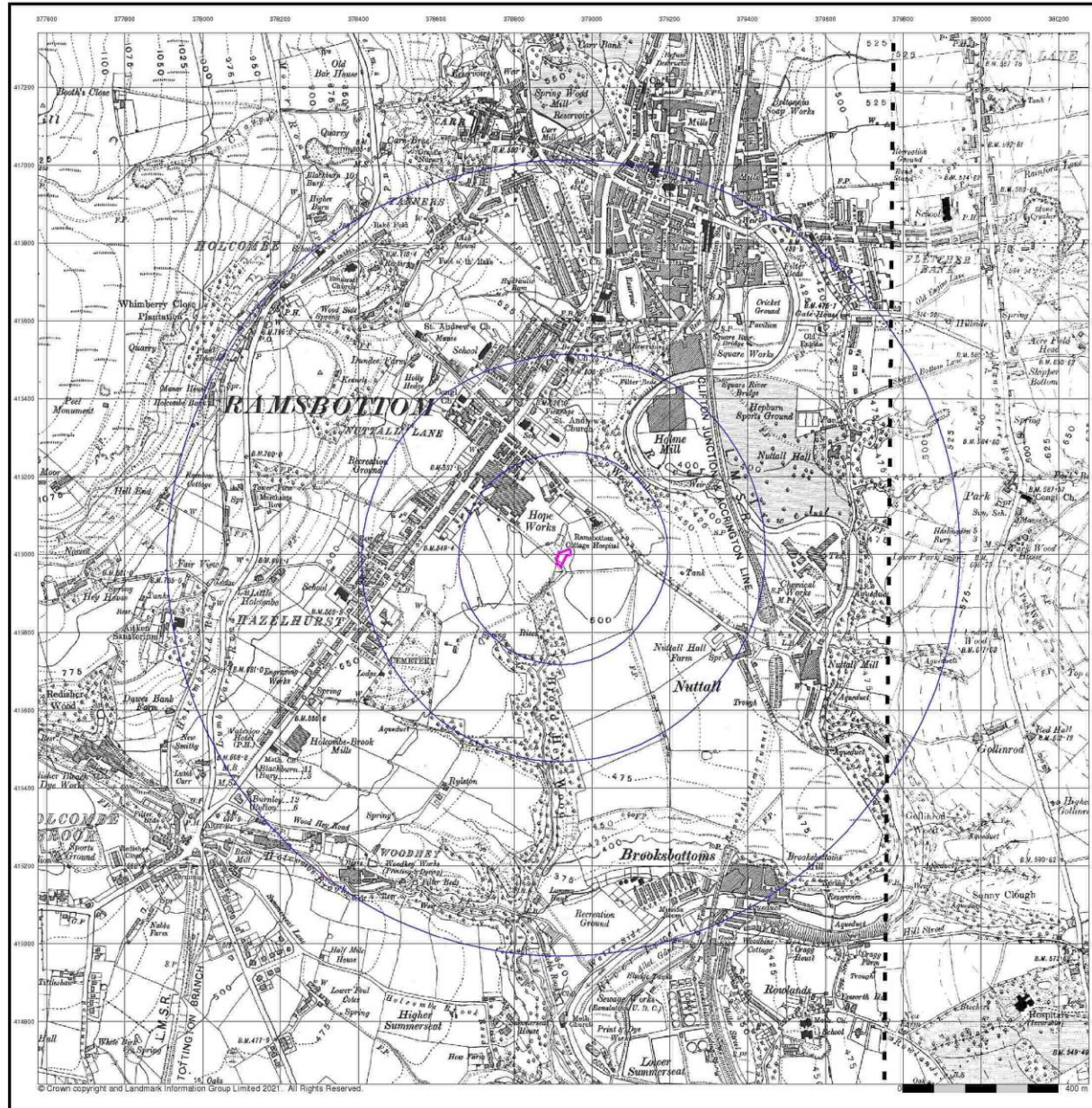
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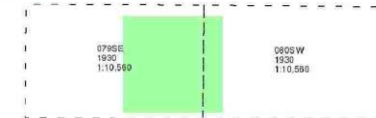
Lancashire And Furness

Published 1930

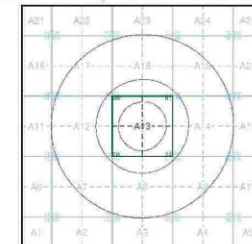
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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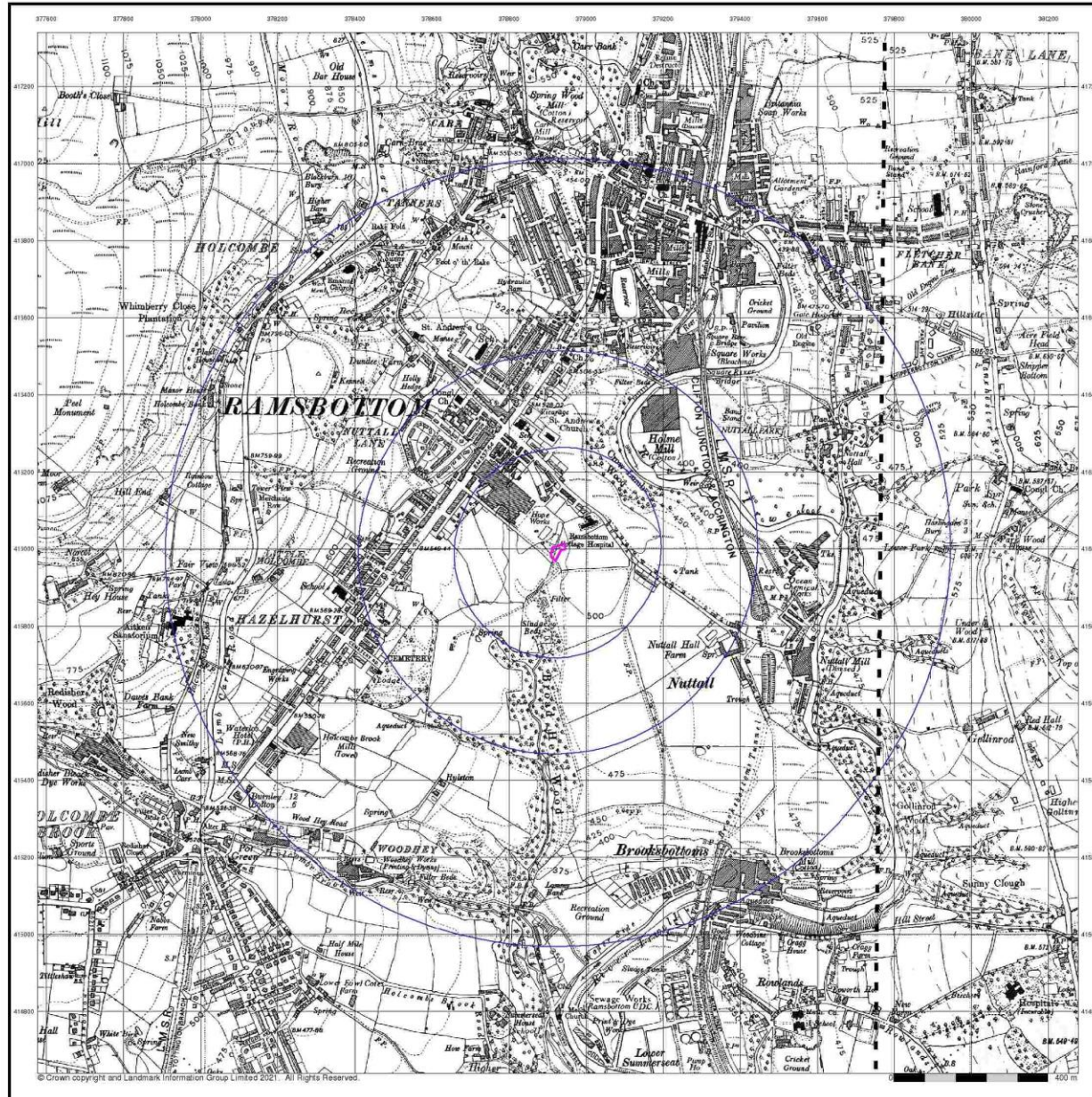
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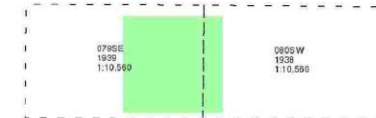
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Published 1938 - 1939

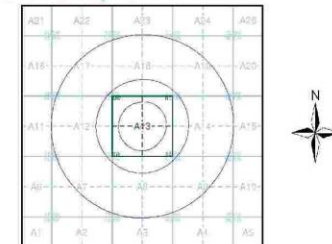
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



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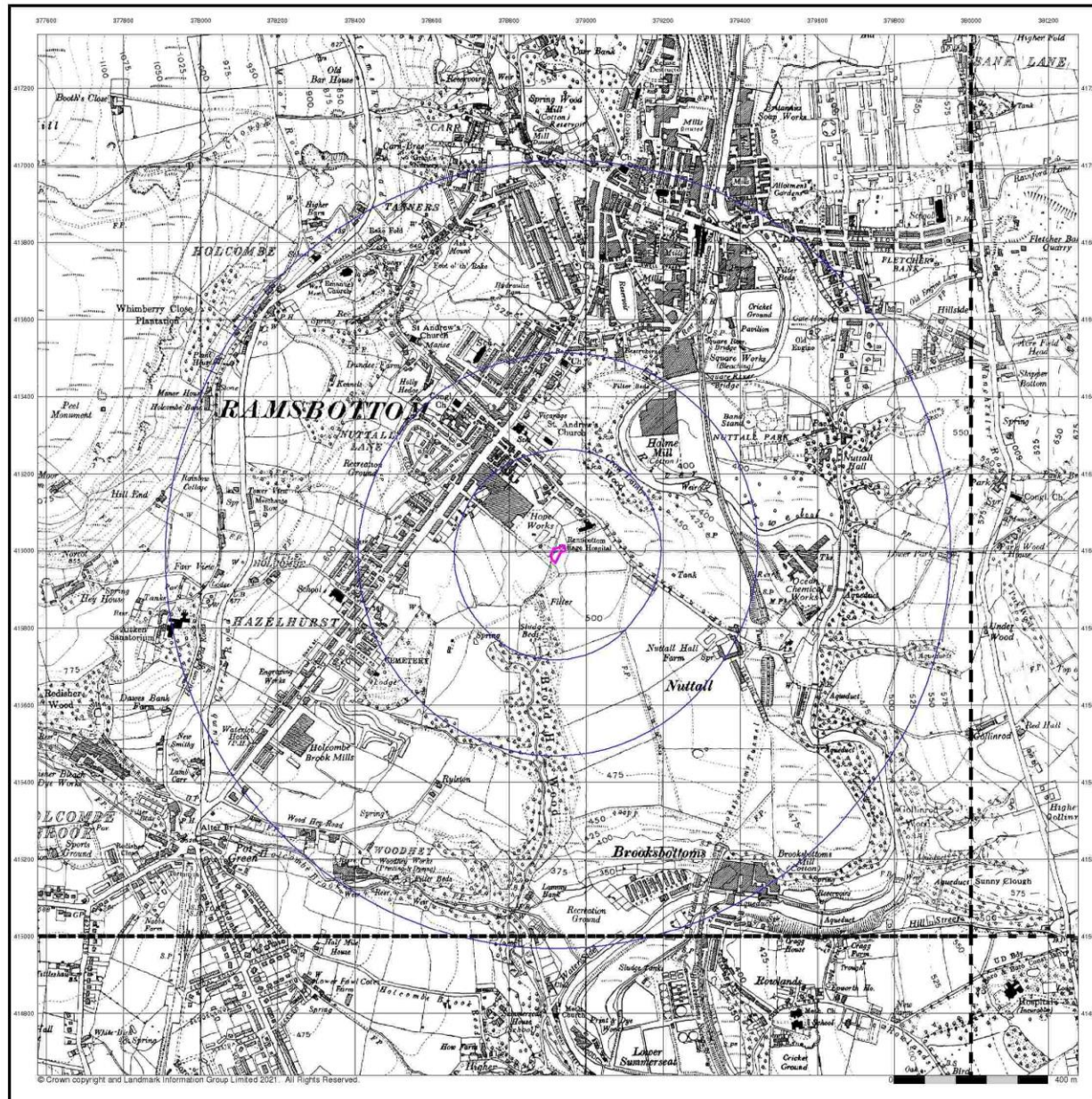
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Ordnance Survey Plan
Published 1955 - 1956

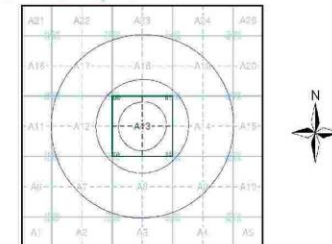
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Map Name(s) and Date(s)

SD71NE	SD81NW
1955	1955
1:10,560	1:10,560
SD71SE	SD81SW
1955	1955
1:10,560	1:10,560

Historical Map - Slice A

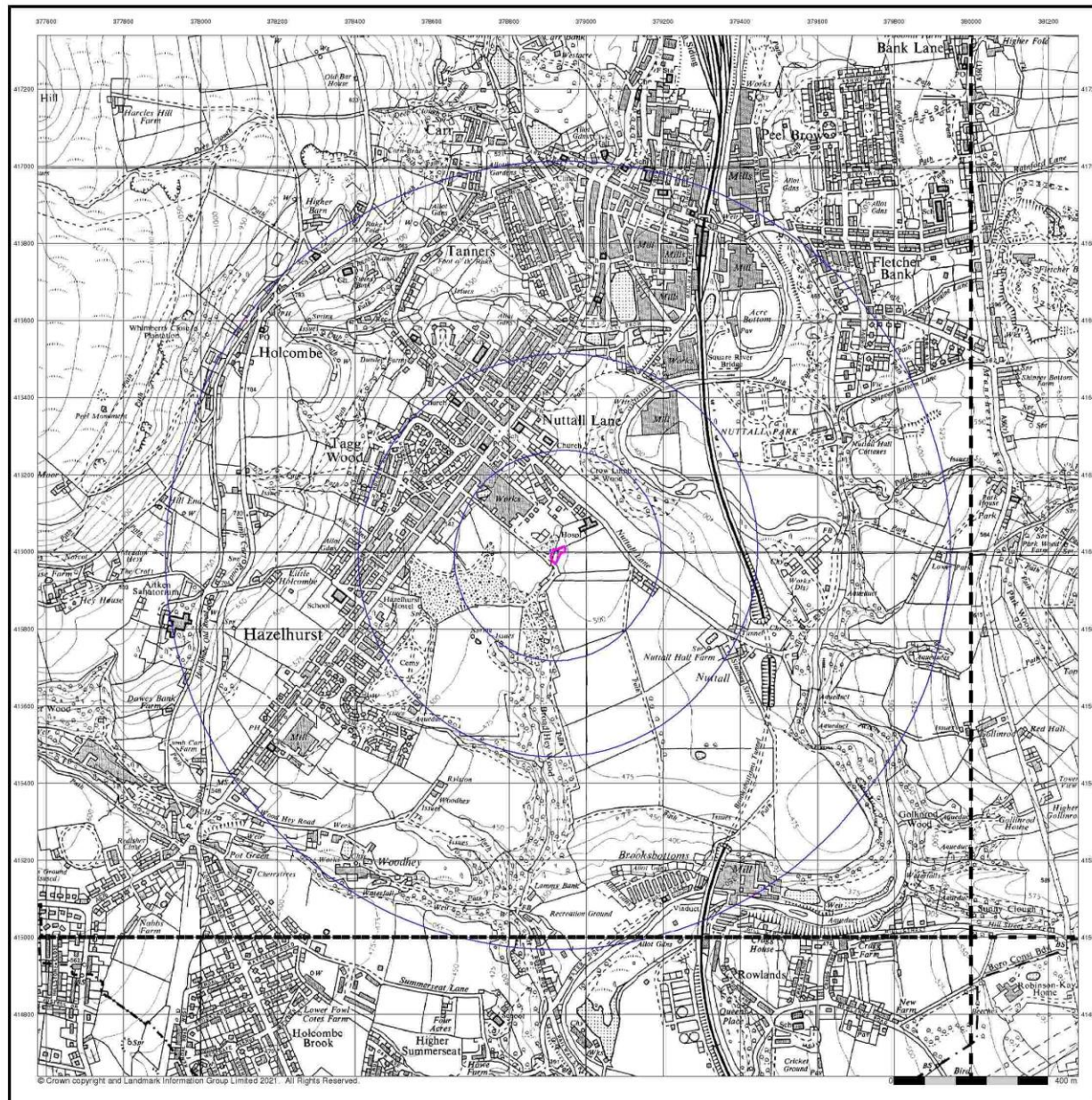


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Ordnance Survey Plan

Published 1967 - 1969

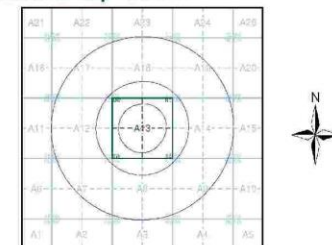
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Map Name(s) and Date(s)

SD71NE	SD81NW
1968	1967
1:10,560	1:10,560
SD71SE	SD81SW
1969	1967
1:10,560	1:10,560

Historical Map - Slice A



Order Details

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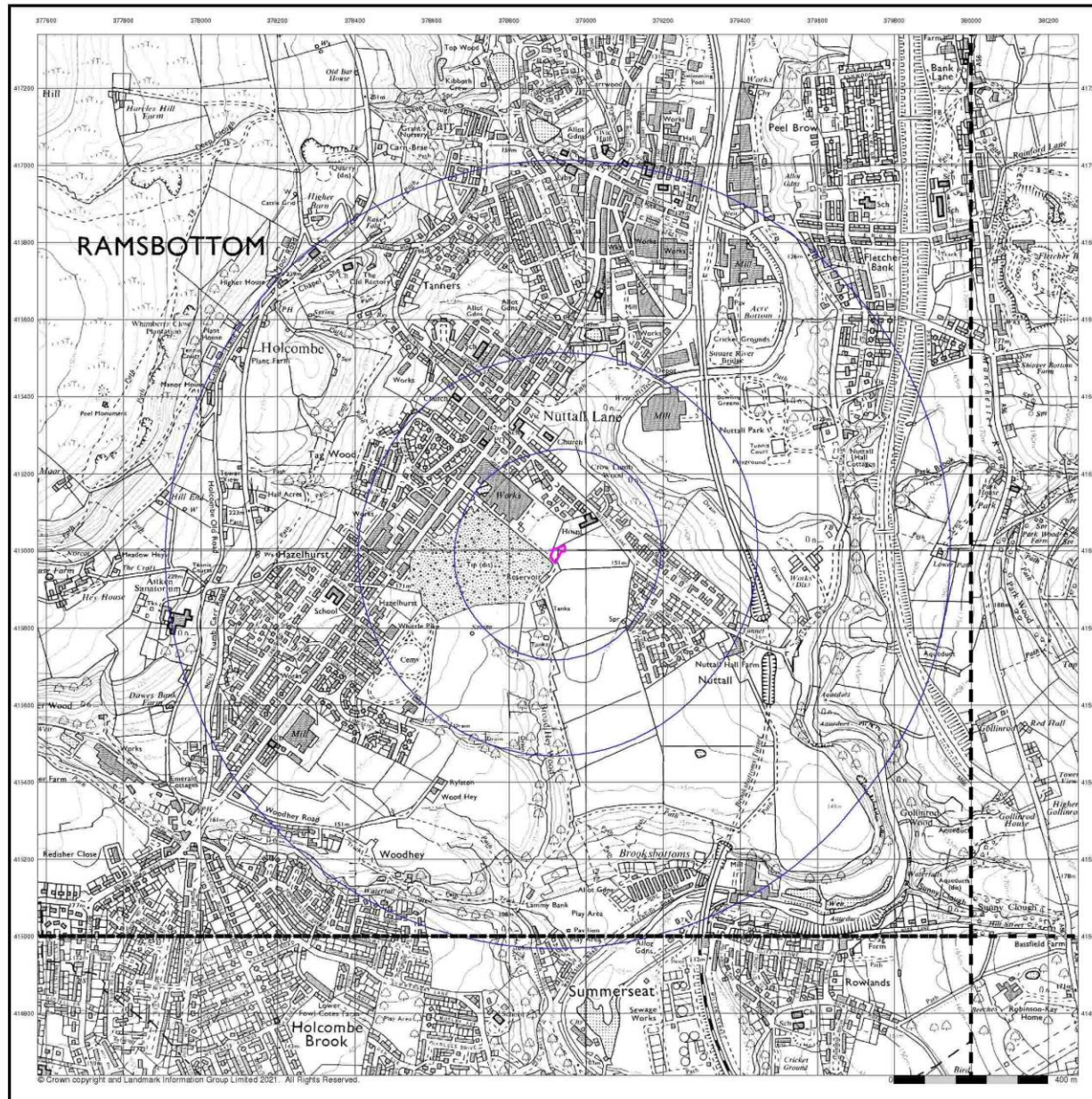
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Ordnance Survey Plan
Published 1982 - 1987

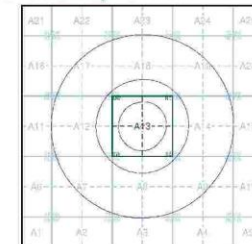
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Map Name(s) and Date(s)

SD71NE	SD61NW
1982	1987
1:10,000	1:10,000

Historical Map - Slice A



Order Details

Order Number: 289157539_1_1
Customer Ref: heron-7 salisbury hall cl-landmark-211221
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Slice: A
Site Area (Ha): 0.09
Search Buffer (m): 1000

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