



**PHASE 1 ENVIRONMENTAL SITE
ASSESSMENT REPORT**

**21 HUYTON CHURCH ROAD,
HUYTON,
LIVERPOOL,
L36 5SH**

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EnviroSolution Ltd

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Executive Summary

The preliminary environmental site assessment indicates that the site can be classified as moderate risk in terms of contamination and the risks to the identified receptors (e.g. human health, controlled waters, buildings) following redevelopment is considered to be moderate.

This classification is due to previous development on site and the potential for Made Ground to be present in the shallow soils. Additionally, a corporation yard has been identified in the surrounding area. Potential contaminants could include heavy metals, polycyclic aromatic hydrocarbons, hydrocarbons and asbestos.

It is recommended a Phase 2 intrusive ground investigation is undertaken prior to site redevelopment to obtain additional information on the ground conditions and the contamination status. The investigation should be carried out by qualified and competent persons. The scope of works for the investigation will need to be submitted and approved by the local authority prior to the commencement of the Phase 2 intrusive works.

Disclaimer

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1 Introduction

1.1 Background

EnviroSolution Ltd was commissioned to undertake a Phase 1 Environmental Site Assessment at a site located at Huyton Church Road in Liverpool. This report was commissioned to support the planning application for a new residential development at the site.

1.2 Objectives

The objective of the preliminary environmental site assessment was:

1. To provide a summary of the environmental setting and historical land use of the site and immediate surrounding area.
2. To obtain information on the ground conditions present beneath the site.
3. To develop a conceptual site model and complete a generic quantitative risk assessment to identify any environmental risks and liabilities associated with ground conditions at the site.

1.3 Scope of Work

To achieve the objectives, the following scope of work was completed:

1. A desk-based study of the site comprising a review of available environmental information for the site such as geological and hydrogeological data and historical land use information.
2. A site walkover survey.
3. Assessment of potential hazards and constraints during construction and longer term.

This work has been devised to generally comply with the relevant principles and requirements of the following legalisation and guidance:

- Part IIA of the Environmental Protection Act, 1990 and Section 57 of the Environmental Act 1995;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- National Planning Policy Framework (Ministry of Housing, Communities and Local Government, February 2019);
- BS10175: 2011 +A2:2017 "Investigation of Potentially Contaminated Sites- Code of Practice"; and
- Environment Agency (2020) Land Contamination Risk Management Report LCRM "How to assess and manage the risks from land contamination".

1.4 Information Sources

Historical Ordnance Survey maps have been obtained from historical records, ranging from 1850 to 2021. These maps provide high quality information on historical site use.

The British Geological Survey Geoindex database has been used to provide information on geo-environmental aspects of the site and the immediate surrounding area such as geological, hydrogeological and hydrological data.

The Environment Agency website (www.gov.uk/government/organisations/environment-agency) and Magic website (www.magic.gov.uk) was also used to obtain environmental information.

Industry Profiles produced by the Department of the Environment were utilised to obtain information on processes, materials and wastes associated potential contaminative land uses near the site.

Readily available information sources have been used to produce this desk-based study. Additional information may be requested by the Local Planning Authority (e.g. local authority environmental information request).

2 The Site

2.1 Site Location

The site is located at 21 Huyton Church Road, Huyton, Liverpool, L36 5SH. The British National Grid Reference for the approximate site centre is GR: 344505 390860.

The site location is shown on **Figure 1** in **Appendix A**.

2.2 Site Description

The site description is aided by the completion of a site walkover survey conducted by EnviroSolution on the 11th of June 2021. The site photographs are included in **Appendix B**.

The site is square in shape and covers an approximate area of 2,900 square metres.

The site is currently occupied a single storey office building which is located in the south-eastern side of the site. A driveway and car park are located on the northern side and a garden lawn is located on the western side.

The site is accessed via a driveway from Huyton Church Road.

The topography of the site is generally flat with little change in elevation.

The site is bounded by a police station to the west and residential properties on all other sides. The site boundaries consist of hedging along the eastern, and northern side, wooden panel fencing along the southern side and a metal fence along the western side.

Land use in the surrounding area is predominantly residential with commercial properties including shops, cafes and restaurants.

There are no petrol filling stations located within a 250m radius of the site.

The existing site plan is shown on **Figure 2** which is included in **Appendix A**.

2.3 Development Proposals

It is understood that the development proposal includes the demolition of the existing building and the construction of a new four-storey residential apartment building to contain 54 no. apartments. Plans include areas for vehicle parking and soft landscaping.

The development plans are included in **Figure 3** in **Appendix A**.

2.4 Site History

The development site and surrounding area has been reviewed with reference to historical Ordnance Survey (OS) maps. The history of the site and immediate surrounding area is summarised in Table 1. Copies of the historical OS maps are included in **Appendix C**. A search buffer of 250m has been used.

Table 1 - Historic Mapping Review

Date	Scale	On Site	Off Site
1851	1:10,560	Site is an undeveloped parcel of land.	Surrounding land largely undeveloped. Railway line located 140m south of the site.
1892	1:2,500	No significant change.	Residential development directly east and south of the site.
1907	1:2,500	No significant change.	No significant change.
1927	1:2,500	No significant change.	No significant change.
1938	1:10,000	No significant change.	No significant change.
1951	1:10,560	No significant change.	Corporation yard 50m northwest of the site.
1968	1:2,500	No significant change.	Corporation yard demolished and replaced with commercial units.
1987	1:2,500	No significant change.	No significant change.
1993	1:2,500	Day nursery built on site.	No significant change.
2021	1:10,000	Building converted to offices.	No significant change.

3 Environmental Setting

3.1 Geology

Geological maps of the area indicate the site is directly underlain by diamicton superficial deposits which are of Quaternary age. The diamicton generally consists of unsorted clays, silts, sands and gravels.

The underlying bedrock consists of the Pennine Middle Coal Measures Formation which is of Carboniferous age. The Pennine Middle Coal Measures Formation generally consists of interbedded grey mudstones, siltstones and pale grey sandstones with common coal seams.

The nearest known geological fault is located 150m west of the site.

A copy of the geological maps is included in **Appendix D**.

3.2 Radon

The site lies within the lowest band of radon potential where it is estimated that less than 1% of the properties are above the action level (low probability). Basic radon protective measures are not deemed necessary for the development.

3.3 Coal Mining Activity

The site lies within a Coal Mining Reporting Area described as having minable coal deposits but does not lie within a 'Development High Risk Area' for coal mining, as defined by the Coal Authority. As such, it is considered that there are no coal mining related hazards which could affect the site.

A copy of the Coal Mining Summary Map is included in **Appendix E**.

3.4 Hydrogeology

The diamicton deposits are designated as a Secondary Undifferentiated Aquifer, defined as; cases where it has not been possible to assign either category A or B to a soil type.

The underlying Pennine Middle Coal Measures Formation is designated as a Secondary A Aquifer, defined as; 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.

The site is not located within a Source Protection Zone and there are no records of groundwater abstraction licenses held within a 1km radius of the site.

A copy of the hydrogeological maps is included in **Appendix F**.

3.5 Hydrology

The River Alt is located 420m north of the site. There are no further significant surface water features (rivers, lakes, reservoirs) located within a 1km radius of the site.

There are no minor surface water features located within a 250m radius of the site.

3.6 Flood Risk

The site lies within a Flood Zone 1, land assessed as having less than a 1 in 1,000 annual probability of river flooding (0.01%) in any year (low risk). The completion of a detailed Flood Risk Assessment is not deemed necessary for this site.

3.7 Waste Management Facilities

There are 2 no. records of historic landfill sites located within a 1km radius of the site. The landfill site information is summarised in Table 2 below:

Table 2 – Historic Landfill Summary

Landfill Site	Operation Dates	Waste Type	Distance from Site
Brickfields	1984 – 1989	Inert	740m E
Huyton Quarry	1971 – Unknown	No Information	850m E

A copy of the historic landfill map is included in **Appendix G**.

There are no records of currently authorised landfill sites located within a 1km radius of the site.

There is a single record of a site operating under an environmental permit for waste operations located within a 1km radius of the site. The permit is held by Willis Peter James 850m east of the site for an ELV facility.

3.8 Environmental Permits, Incidents and Registers

There is a single record of a site operating under an environmental permit for installations located within a 1km radius of the site. The permit is held by Langdawe Ltd 840m southeast of the site for surface treating metals.

There are 2 no. records of pollution events having occurred within a 1km radius of the site. The events occurred 810m east and 870m southwest of the site and comprised commercial waste and petrol spillages respectively.

3.9 Designated Environmentally Sensitive Sites

There is a single record of a designated environmentally sensitive site located within a 1km radius of the site. The site lies within a Nitrate Vulnerable Zone.

A copy of the environmental designation maps is included in **Appendix H**.

4 Preliminary Conceptual Site Model

4.1 Introduction

In order to assess the environmental risks present, a preliminary conceptual model has been developed for the site. This model has been developed using best practice guidelines in conjunction with the current assessment framework taking into account the development proposals. This preliminary conceptual model is based on the gathered desk-based information (e.g. historical OS data and data sourced from the EA, Geoindex and Magic databases).

The conceptual site model is a representation of the hypothesised relationships between sources, pathways and receptors which allows the identification of potential pollutant linkages and whether these linkages have the potential to comprise significant harm and/or pollution of controlled waters in relation to the site. This model comprises three elements:

Source – the key pollutant hazards associated with the site

Receptor – the key targets at risk from the sources

Pathway – the means by which the contaminant can cause harm to the receptor

If all three elements are present, then a potential pollutant linkage exists, and this may require further assessment.

4.2 Potential Contamination Sources

The site remained undeveloped until the 1970s when a day nursery was built on the site. The nursery was later converted to offices. Given the previous development, there is the potential for Made Ground to be present beneath the site. The Made Ground could contain contaminants such as heavy metals, polyaromatic hydrocarbons (PAHs) and asbestos. Given that the Made Ground is likely to comprise demolition rubble and that no in-filling has taken place, the risk of it containing putrescible material is low and therefore the potential for ground gas generation is low.

A historic corporation yard has been identified in the surrounding area. Therefore, there is the potential for contamination to be present in the ground beneath the site associated with this land use. Potential contaminants could include heavy metals, hydrocarbons, and PAHs.

It is considered unlikely that any ground gases associated with the landfill sites would be impacting upon the development site due to their distance (i.e. >740m).

4.3 Receptors

The potential receptors considered to be at risk from soil and groundwater contamination associated with the site are summarised in Table 3 below:

Table 3 - Receptor Description

Receptor	Details
Human (On Site)	- Construction workers - Future site users - Site visitors
Human (Off Site)	- Adjacent site users
Controlled Waters	- Secondary Undifferentiated Aquifer - Secondary A Aquifer - River Alt
Building/ construction materials	- Foundations and buried services

4.4 Pathways

The potential exposure pathways linking contamination with the receptors identified above are summarised in Table 4 below:

Table 4 - Exposure Pathways Summary

Receptor	Details of Exposure Pathway
Human (on-site)	- Direct ingestion of contaminated soil/groundwater - Dermal contact with soil/groundwater - Inhalation of gases and vapours
Human (off-site)	- Inhalation of fibres and particulates - Inhalation of migrating gases and vapours
Controlled waters	- Vertical and lateral migration of dissolved phase contaminants via preferential pathways to groundwater aquifers - Direct surface water run-off to surface water features
Building/construction	- Buried materials/services - Contact with contaminated soil and/or groundwater

4.5 Potential Pollution Linkages

4.5.1 Human Health

The development comprises the demolition of the existing building and the construction of a new residential apartment building. Final development plans include areas of soft landscaping. This is considered to be a sensitive end use.

The presence of buildings and hardstanding would eliminate the risk of exposure, via the dermal contact and ingestion pathways to future site users to any ground contamination that may remain following development.

There could be a potential risk of exposure to any ground contamination that remains following redevelopment in the proposed areas of soft landscaping (i.e. gardens), to future site users, via all possible exposure pathways.

Any ground gases (i.e. methane and carbon dioxide) and vapours that are present within the soils beneath the site could potentially ingress into the buildings through preferential pathways (e.g. service entry points). Therefore, there would be a risk of exposure via inhalation to future site users.

There is the potential for construction workers and adjacent land users to be exposed to soil and groundwater contamination during site redevelopment. However, the use of appropriate PPE and the adoption of suitable Health and Safety methods will help to reduce the risks posed to human health during this work.

4.5.2 Controlled Waters

The site is immediately underlain by diamicton deposits which are generally of low permeability. It is considered that the diamicton will act as an impermeable barrier, preventing the migration of any contamination in the Made Ground to the aquifer below.

The site does not lie within a Source Protection Zone and there are no groundwater abstraction licences held nearby.

It is considered that the Alt lies at a sufficient distance from the site to not be affected by potential contamination.

The risk to controlled waters is deemed to be low.

4.5.3 Building/ Construction Materials/ Buried Services

The presence of any soil and groundwater contaminants beneath the site could potentially impact on construction materials for the new development, such as below ground structures and services. Concrete foundations are particularly sensitive to aggressive ground conditions, i.e. sulphate attack.

If ground gases and vapour are present in the soil beneath the site, then there would be the potential risk of ingress into the new properties which could present a risk of explosion.

4.6 Preliminary Hazard Assessment

A preliminary hazard assessment is presented in Table 5. The preliminary hazard assessment is a qualitative assessment of the risks posed by each potential pollutant linkage described

above and is used to identify the requirement for additional work (e.g. intrusive ground investigation).

Table 5 – Preliminary Hazard Assessment

Source 1	Pathway	Receptor	Likelihood	Effect	Risk	Assessment
Contaminated soil	Ingestion (via soil dust), inhalation (via soil dust and vapours), ingestion through dirty hands, dermal contact with soil/water.	Future site users Adjacent site users Construction workers	2	3	Moderate	On-site and off-site source potential identified. Areas of soft landscaping provide exposure pathways.
Contaminated soil groundwater	Direct contact	Buildings/ services	2	3	Moderate	Source potential identified. Proposed foundations in direct contact with potentially contaminated soils.
Contaminated groundwater	Downward or lateral migration Surface water run-off	Secondary A Aquifer River Alt	1	3	Low	Impermeable superficial deposits will act as an impermeable barrier.
Ground gas / vapours Radon	Inhalation, ingress into buildings	Buildings / services Future site users Adjacent site users Construction workers	1	4	Low	No significant ground gas source identified. The site lies within a low probability area for radon.

Using Risk Matrix (Table 6) Degree of Risk (R) = Likelihood (L) x Effect (E)

Table 7 - Risk Matrix, Degree of Risk (R) = Likelihood (L) x Effect (E)

Likelihood	Description	Probability	Effect (E)	Description
5	Almost certain	>70%		
4	Probable	50-70%	4	Severe
3	Likely	30-50%	3	Medium
2	Unlikely	10-30%	2	Mild
1	Negligible	<10%	1	Minor
Risk (R)	Risk Level	Action		
1-5	Low	None required		
6-10	Moderate	Further assessment via Phase 2 intrusive ground investigation.		
>10	High	Further assessment via Phase 2 intrusive ground investigation.		

5 Conclusions and Recommendations

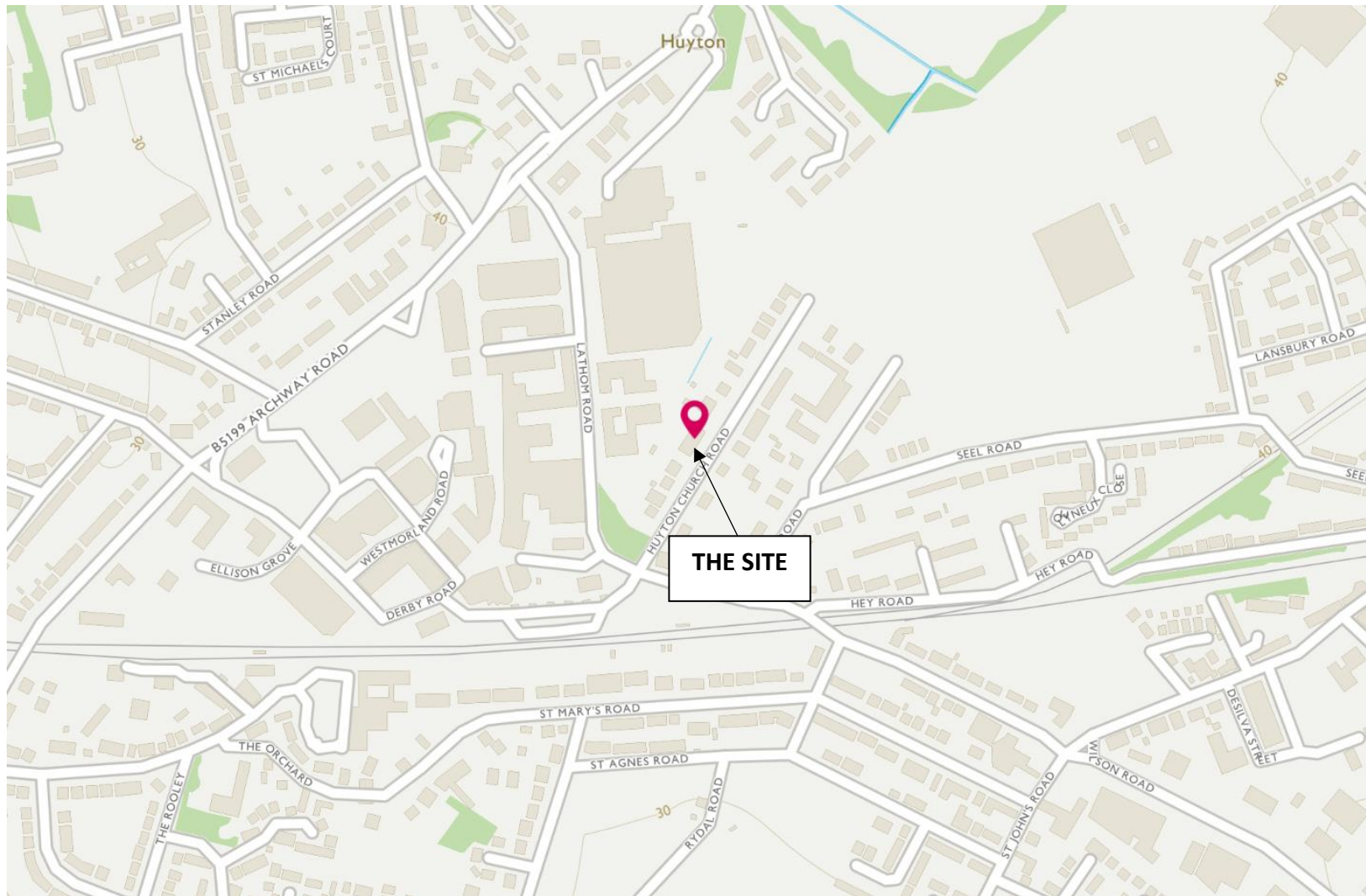
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APPENDICES

Appendix A – Site Location and Site Plan



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Site Location Map

Figure 1



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Existing Site Plan

Figure 2

FOR PLANNING



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Proposed Development Plan

Figure 3

Appendix B – Site Photographs



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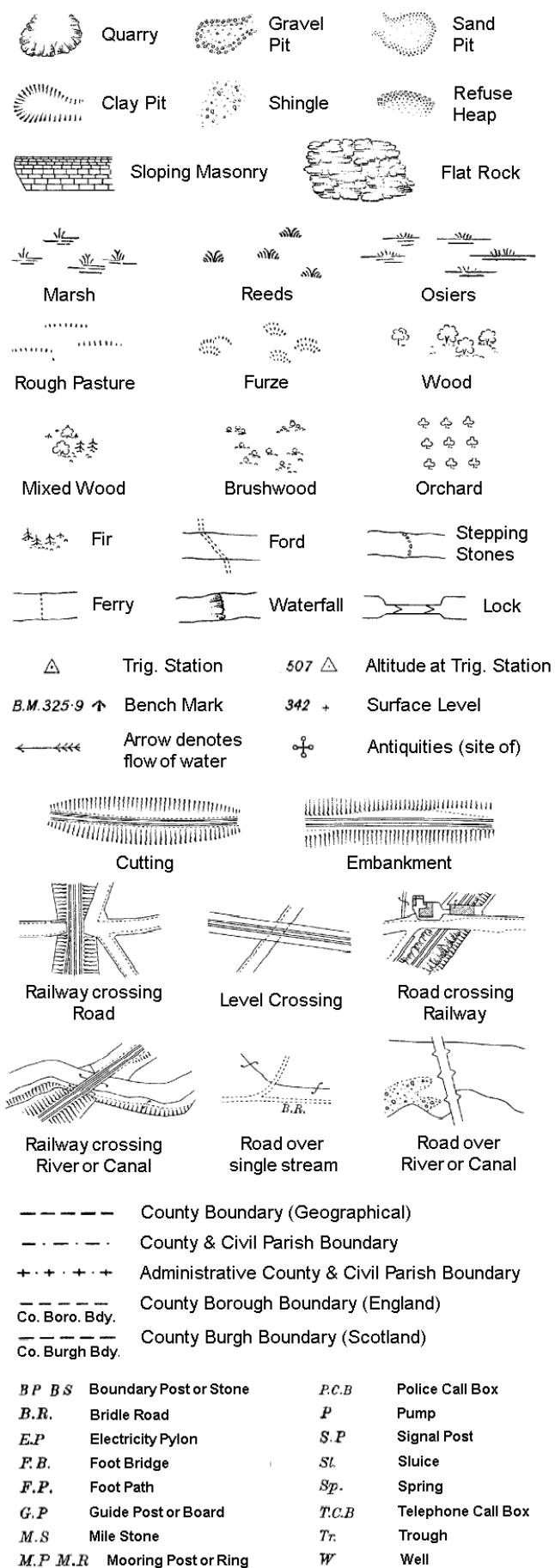


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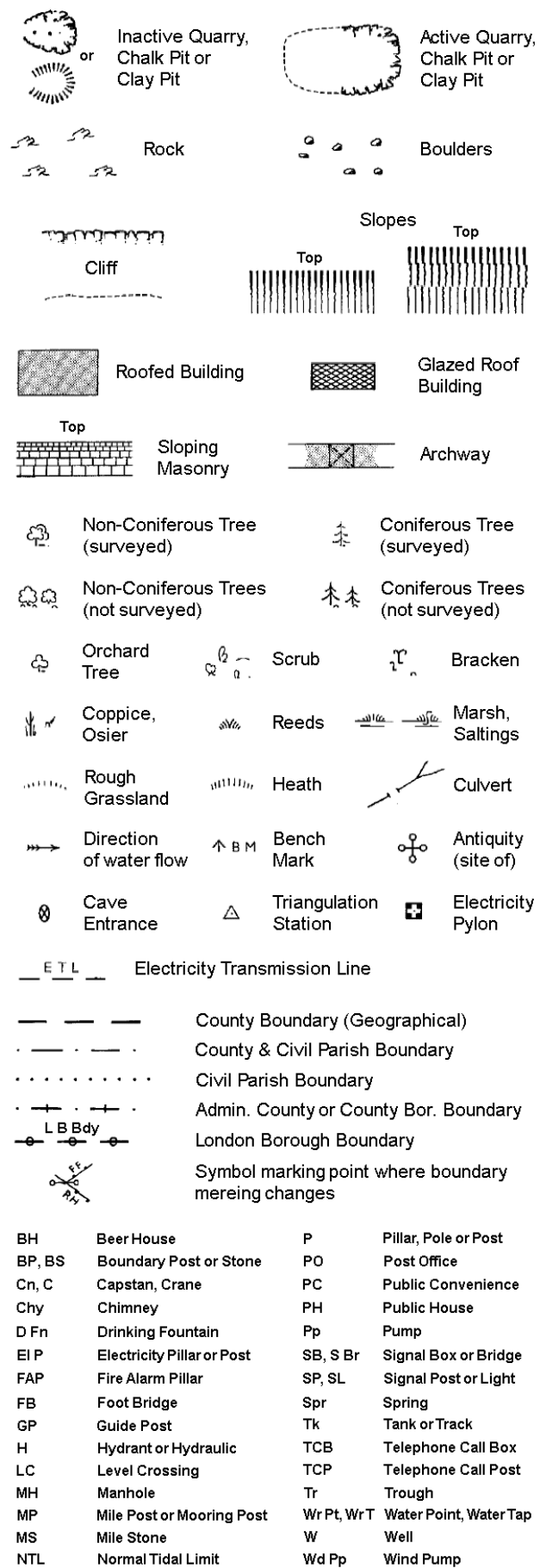
Appendix C - Historical Maps

Historical Mapping Legends

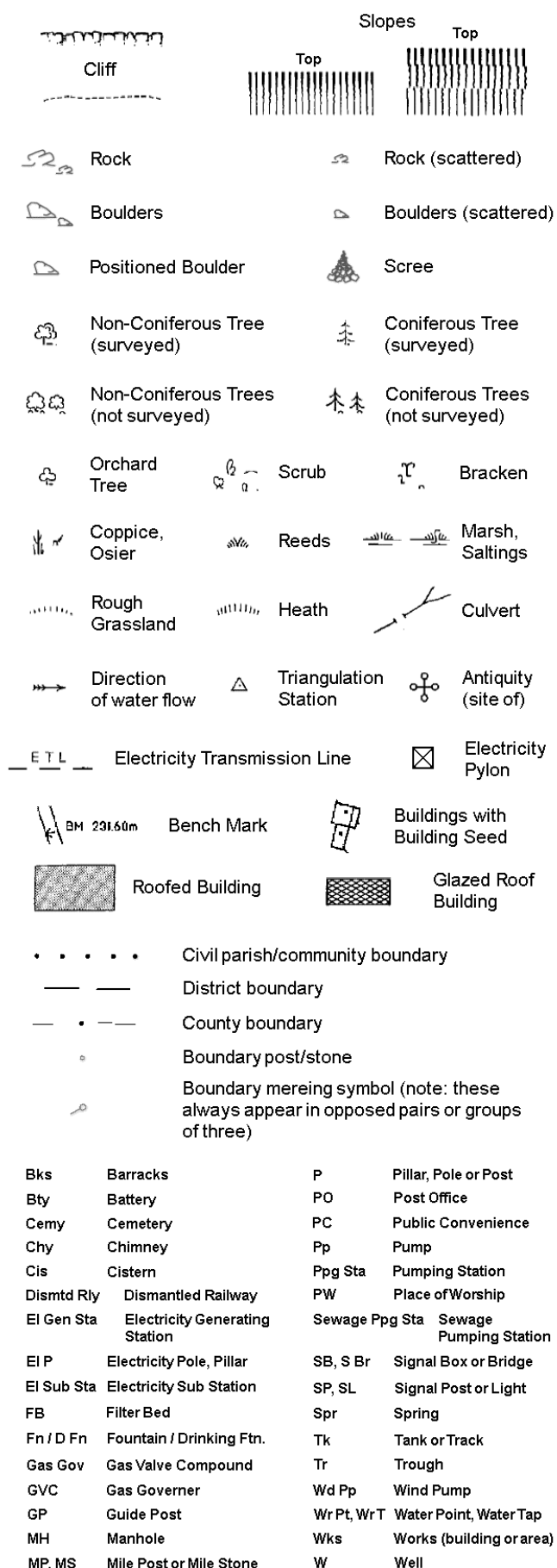
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information



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



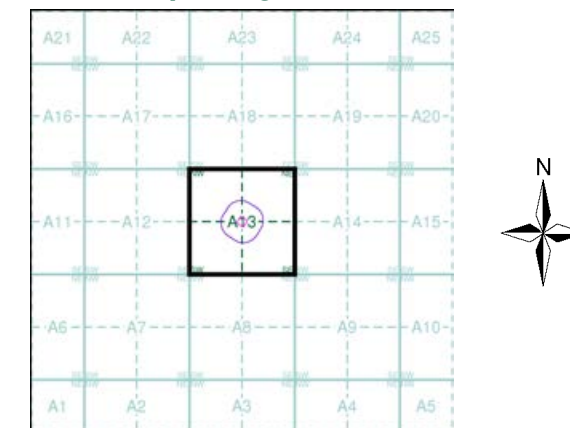
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1892	2
Lancashire And Furness	1:2,500	1907	3
Lancashire And Furness	1:2,500	1927	4
Ordnance Survey Plan	1:1,250	1951 - 1952	5
Ordnance Survey Plan	1:2,500	1952 - 1953	6
Ordnance Survey Plan	1:1,250	1959 - 1967	7
Ordnance Survey Plan	1:2,500	1960 - 1967	8
Ordnance Survey Plan	1:1,250	1968 - 1976	9
Ordnance Survey Plan	1:2,500	1970	10
Ordnance Survey Plan	1:1,250	1975	11
Additional SIMs	1:1,250	1984 - 1989	12
Large-Scale National Grid Data	1:1,250	1993	13
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Large-Scale National Grid Data	1:1,250	1995	15

Historical Map - Segment A13



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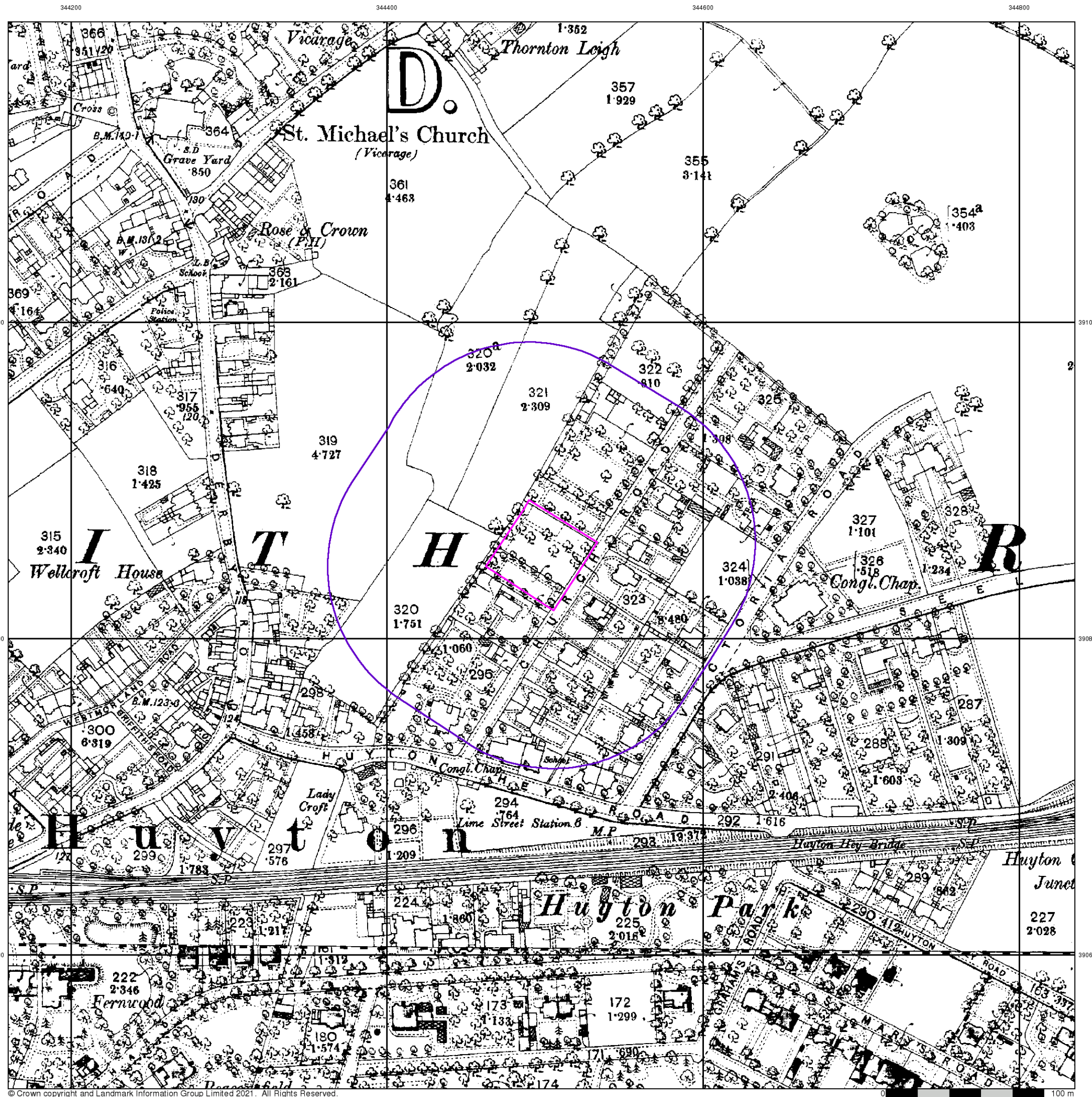
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National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 100

Site Details

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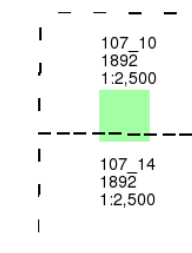
Lancashire And Furness

Published 1892

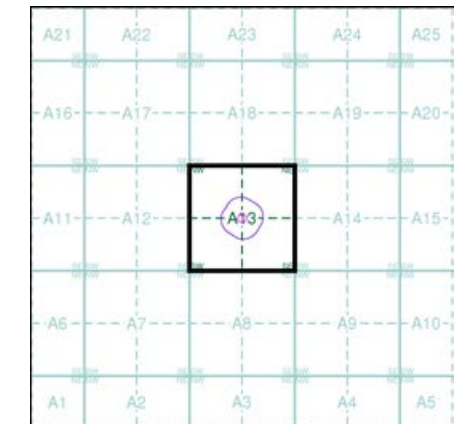
Source map scale - 1:2,500

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)



Historical Map - Segment A13



Order Details

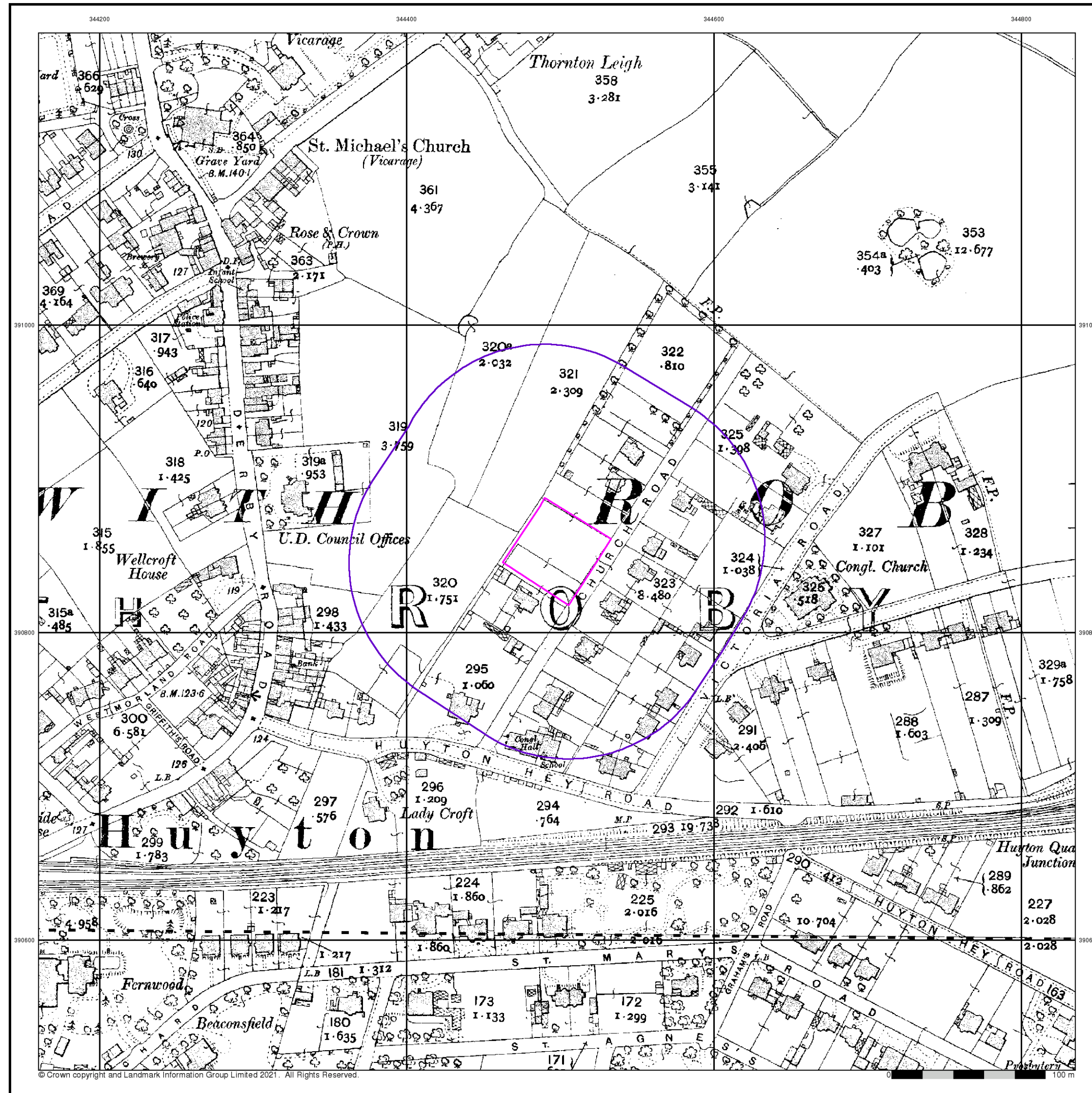
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Slice: A
Site Area (Ha): 0.26
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Lancashire And Furness

Published 1907

Source map scale - 1:2,500

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Map Name(s) and Date(s)

107_10
1907
1:2,500

107_14
1907
1:2,500

Historical Map - Segment A13

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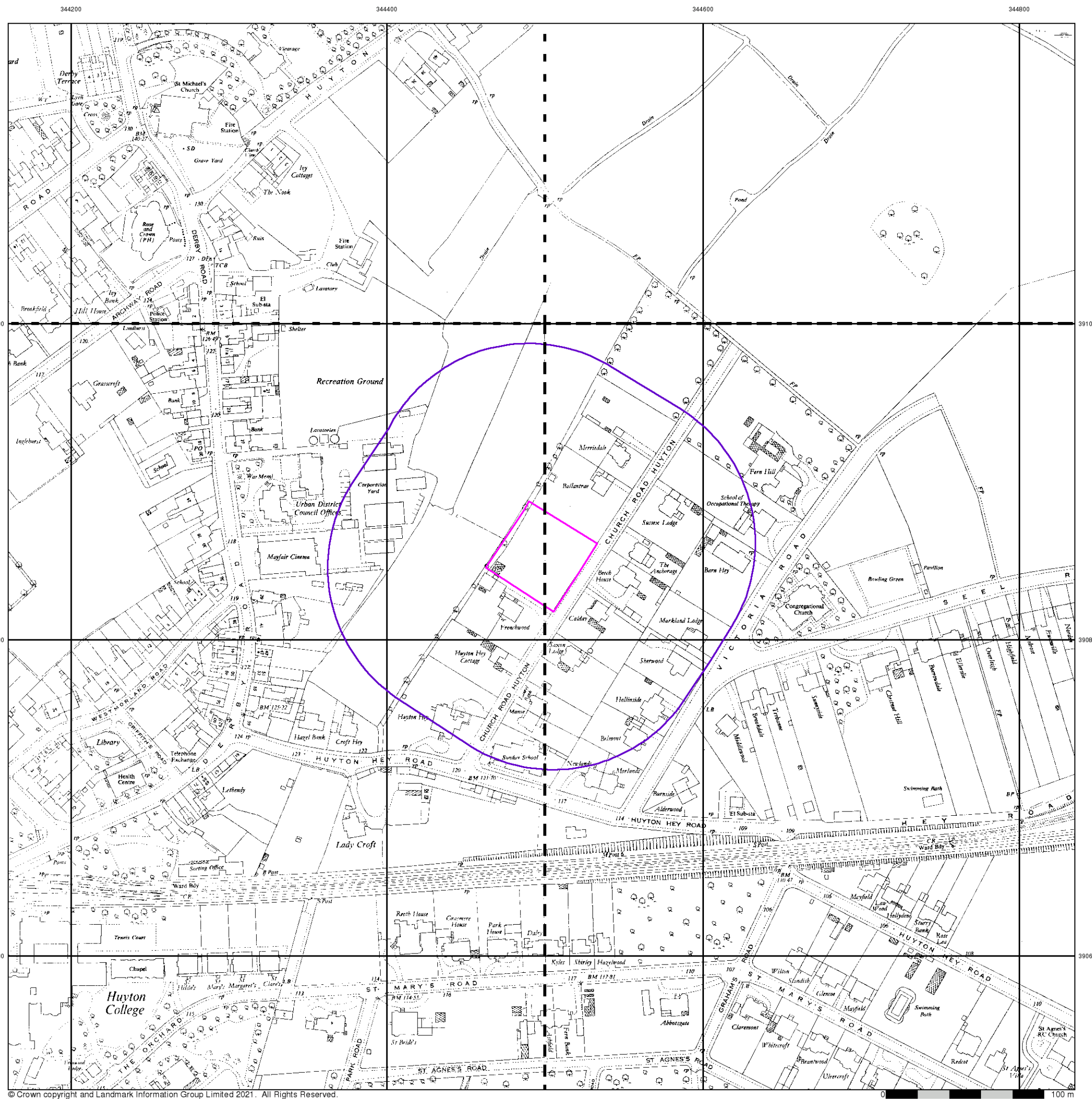
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Customer Ref:	ES080621
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Slice:	A
Site Area (Ha):	0.26
Search Buffer (m):	100

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



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Ordnance Survey Plan

Published 1951 - 1952

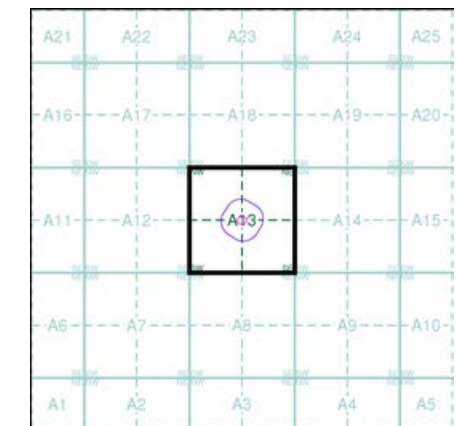
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Map Name(s) and Date(s)

SJ4491SW	SJ4491SE
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SJ4490NW	SJ4490NE
1951	1951
1:1,250	1:1,250

Historical Map - Segment A13

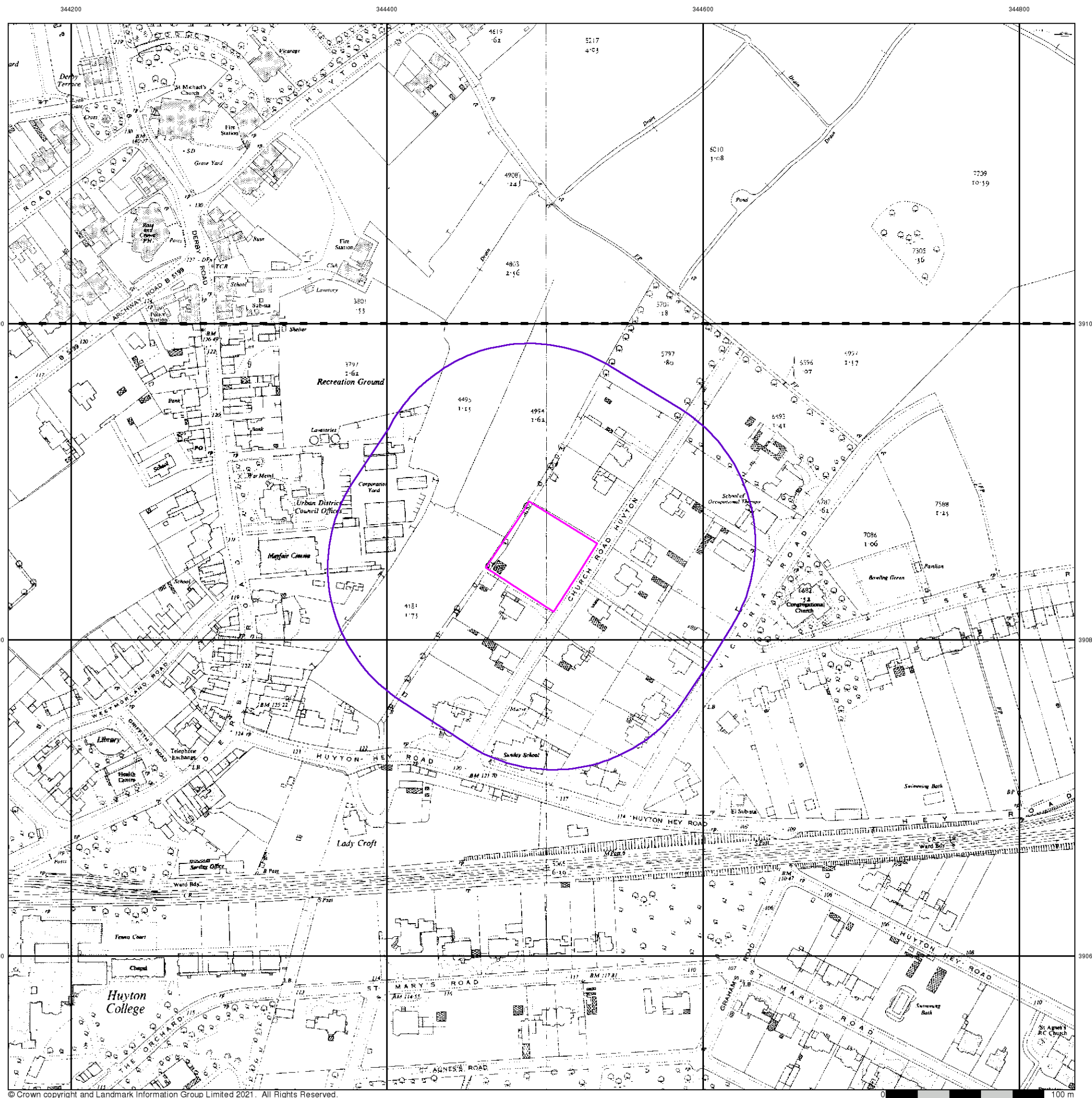


Order Details

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Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 100

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



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Ordnance Survey Plan

Published 1952 - 1953

Source map scale - 1:2,500

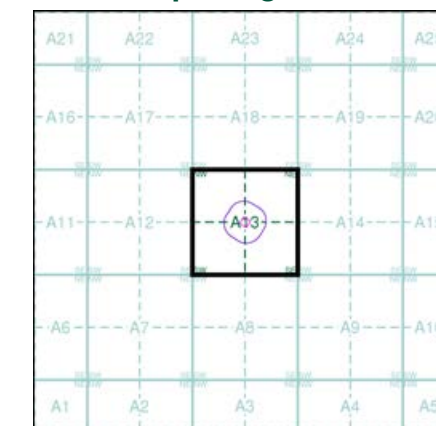
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Map Name(s) and Date(s)

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1:2,500

SJ4490
1952
1:2,500

Historical Map - Segment A13



Order Details

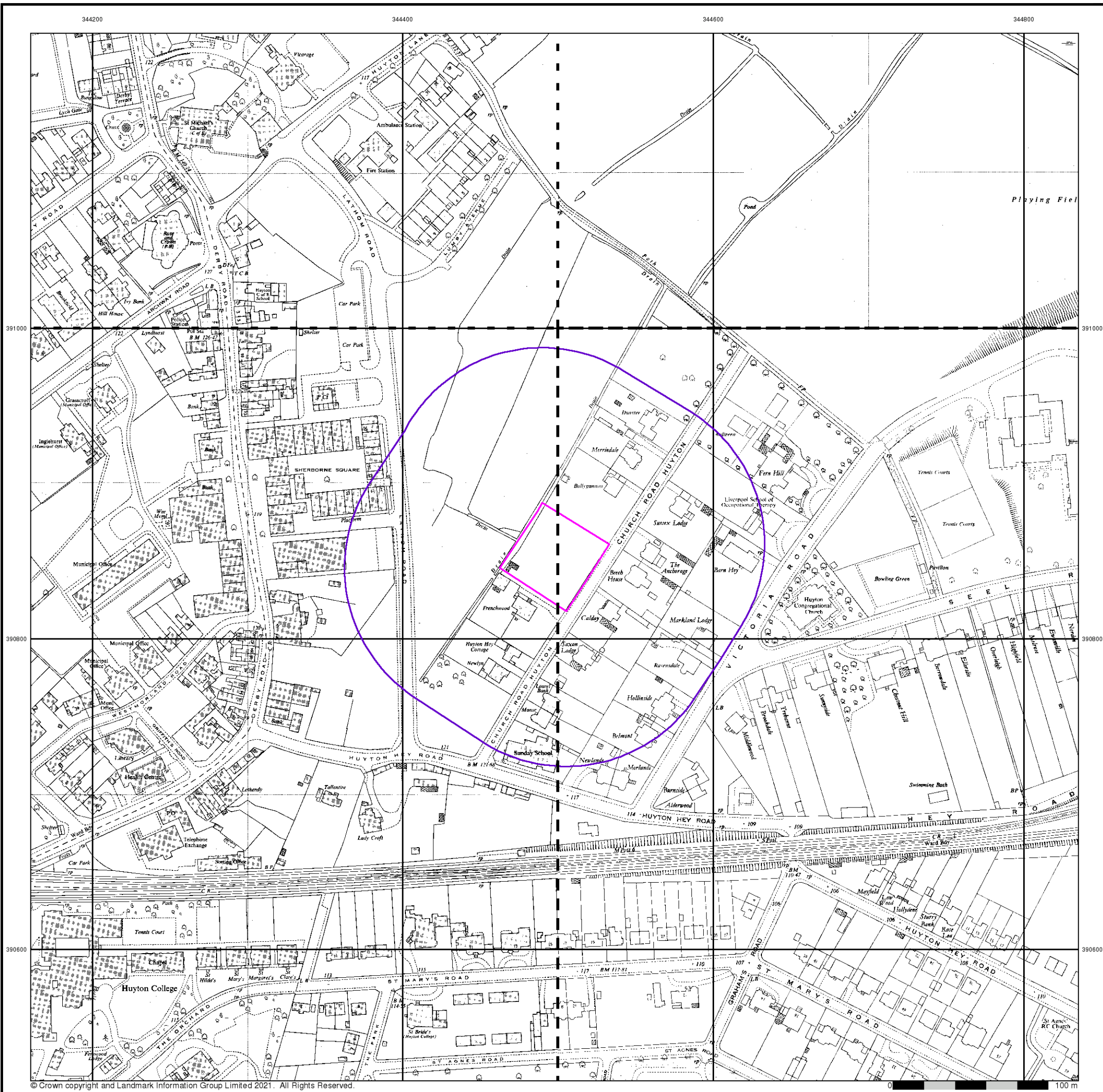
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National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 100

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH

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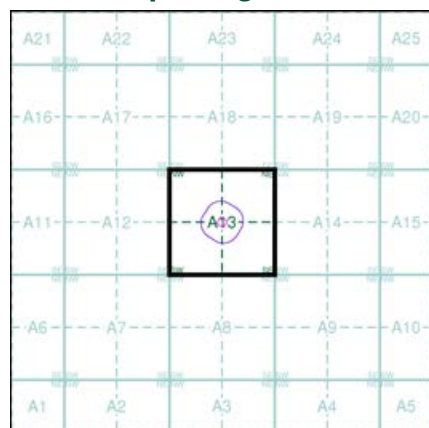
Ordnance Survey Plan
Published 1959 - 1967
Source map scale - 1:1,250

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)

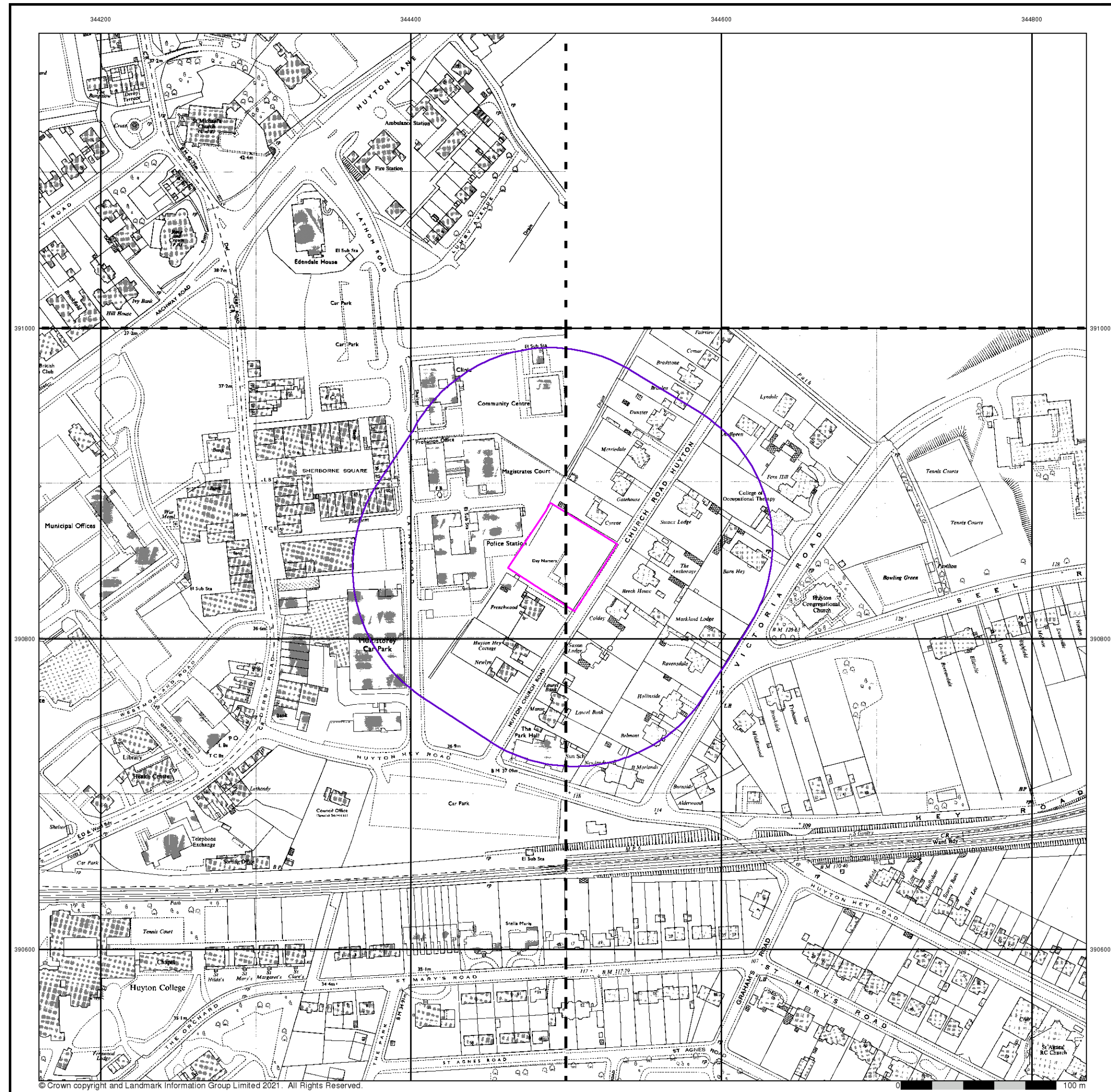
SJ4491SW 1966 1:1,250	SJ4491SE 1966 1:1,250
SJ4490NW 1967 1:1,250	SJ4490NE 1959 1:1,250

Historical Map - Segment A13



Order Details
Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 100

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Ordnance Survey Plan

Published 1968 - 1976

Source map scale - 1:1,250

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Map Name(s) and Date(s)

SJ4491SW	1976	1:1,250
SJ4490NW	1976	1:1,250
SJ4490NE	1968	1:1,250

Historical Map - Segment A13

Order Details

Order Number:	279992997_1_1
Customer Ref:	ES080621
National Grid Reference:	344500, 390850
Slice:	A
Site Area (Ha):	0.26
Search Buffer (m):	100

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH

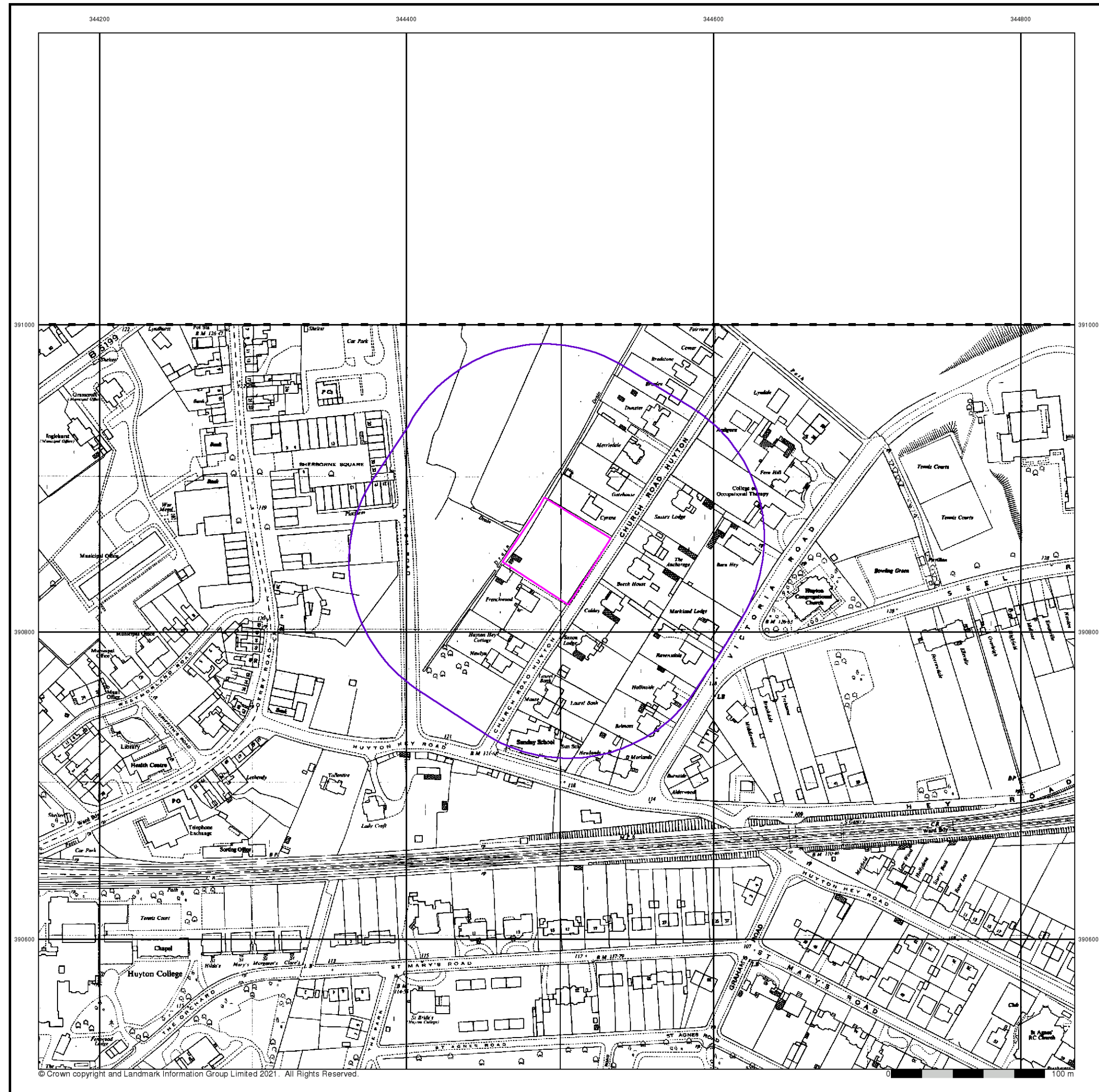
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Ordnance Survey Plan

Published 1970

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)

SJ4490

1970

1:2,500

Historical Map - Segment A13

A21A22A23A24A25

A16A17A18A19A20

A11A12A13A14A15

A6A7A8A9A10

A1A2A3A4A5

N

Order Details

Order Number:	279992997_1_1
Customer Ref:	ES080621
National Grid Reference:	344500, 390850
Slice:	A
Site Area (Ha):	0.26
Search Buffer (m):	100

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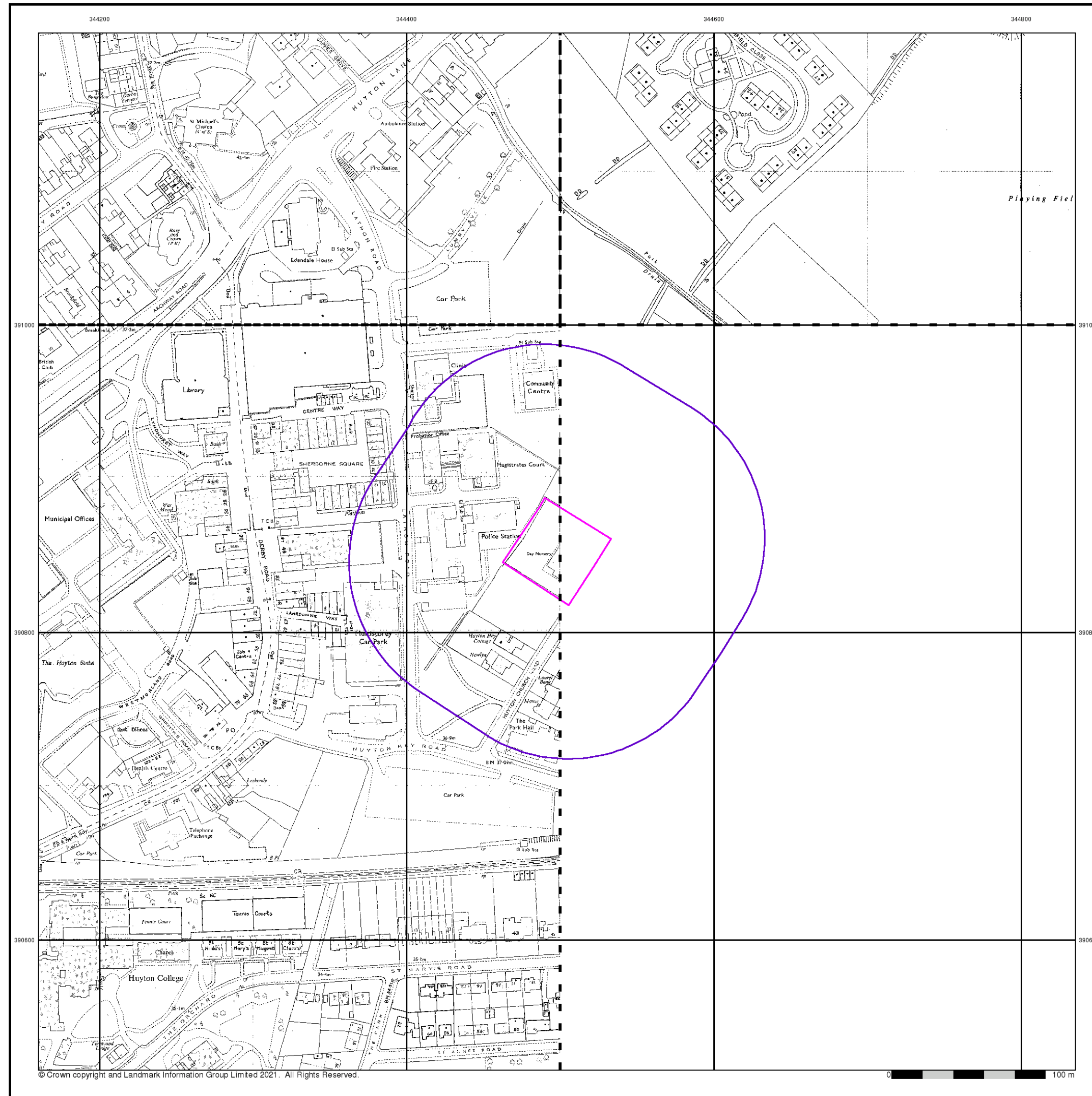
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Additional SIMs

Published 1984 - 1989

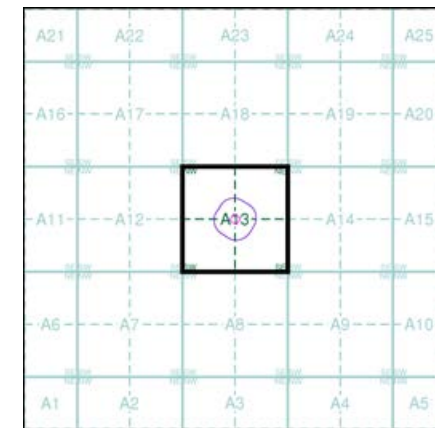
Source map scale - 1:1,250

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)

SJ4491SW	SJ4491SE
1989	1987
1:1,250	1:1,250
SJ4490NW	
1984	
1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 279992997_1_1

Customer Ref: ES080621

National Grid Reference: 344500, 390850

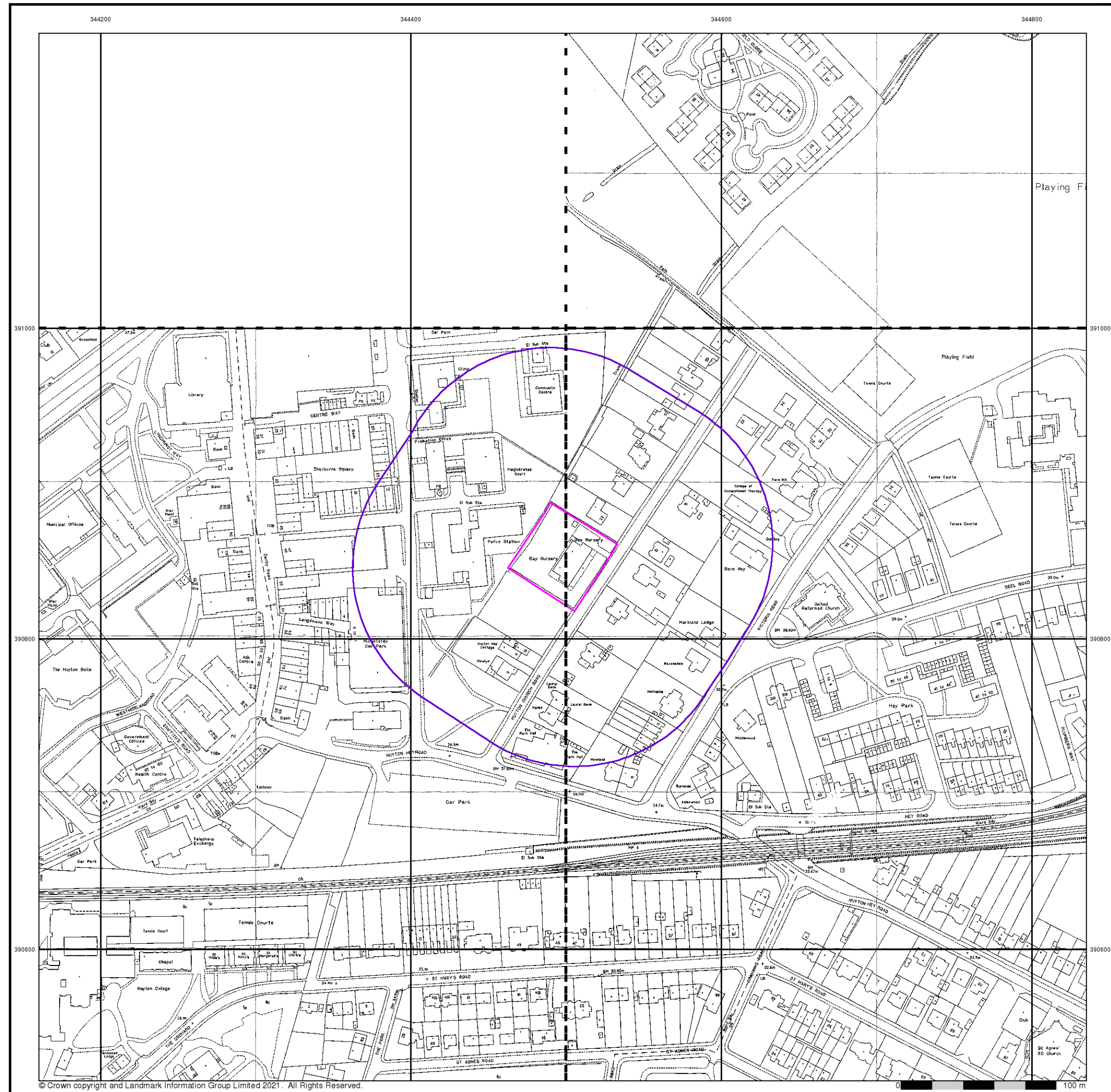
Slice: A

Site Area (Ha): 0.26

Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1993

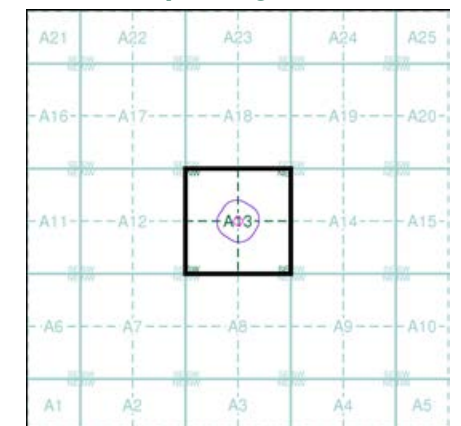
Source map scale - 1:1,250

'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)

	SJ4491SE	
	1993	
	1:1,250	
SJ4490NW		SJ4490NE
1993		1993
1:1,250		1:1,250

Historical Map - Segment A13

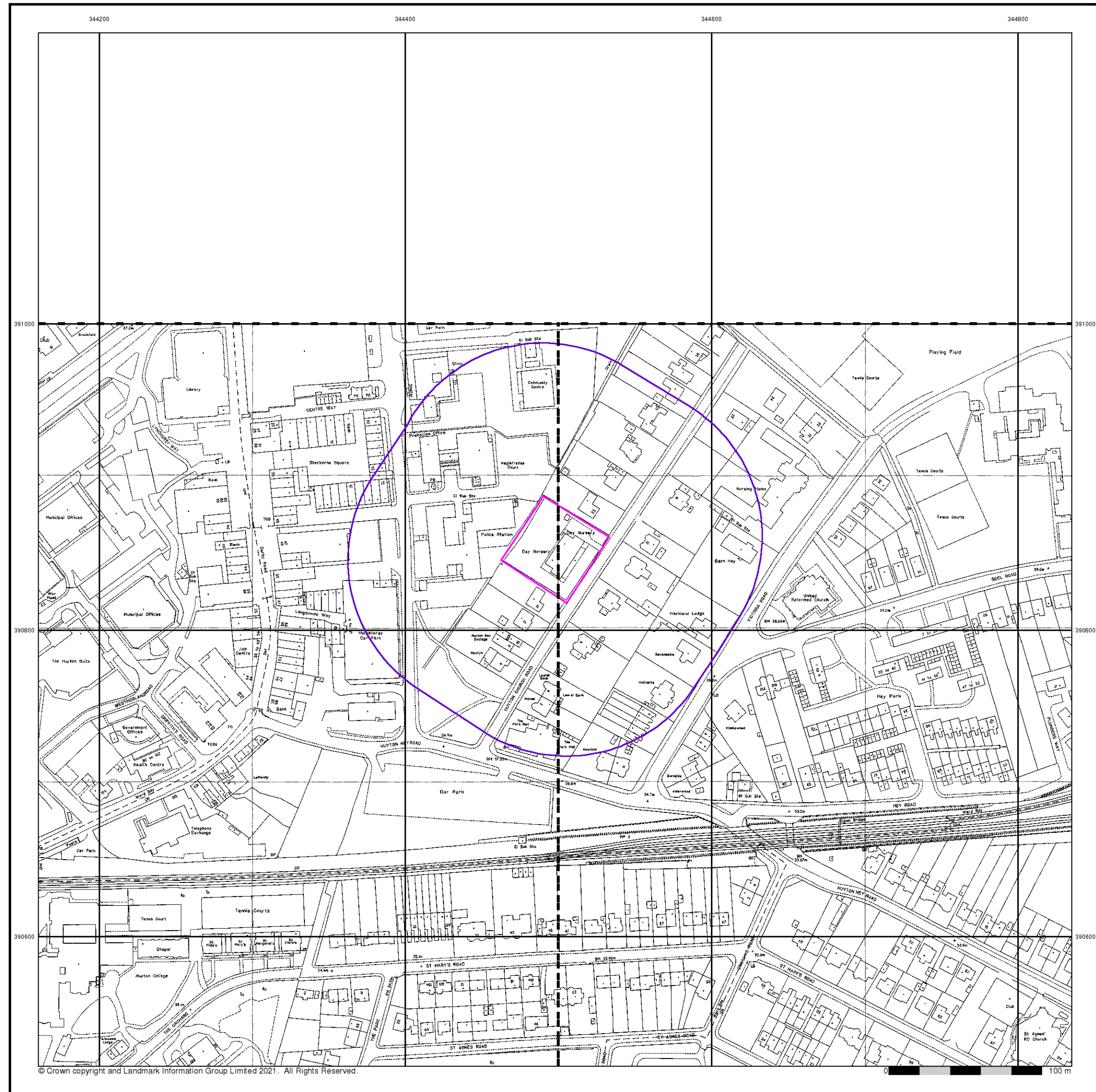


Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
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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)

SJ4490NW	SJ4490NE
1993	1993
1:1,250	1:1,250

Historical Map - Segment A13

A13

Order Details

Order Number:	279992997_1_1
Customer Ref:	ES080621
National Grid Reference:	344500, 390850
Slice:	A
Site Area (Ha):	0.26
Search Buffer (m):	100

Site Details

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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
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
			Pole
			Electricity Transmission Line
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	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		
	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

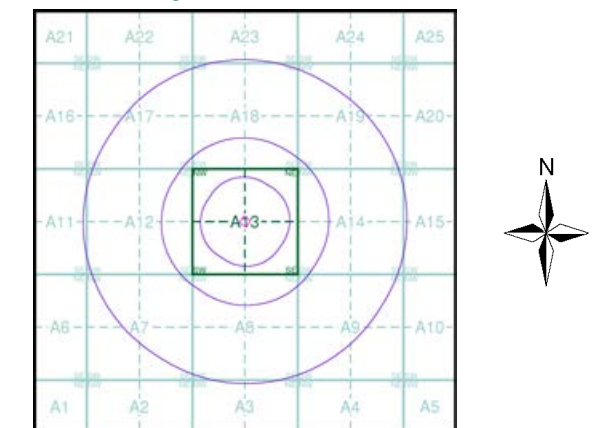
1:10,000 Raster Mapping

	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

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1850	2
Cheshire	1:10,560	1881	3
Lancashire And Furness	1:10,560	1894	4
Lancashire And Furness	1:10,560	1908 - 1909	5
Lancashire And Furness	1:10,560	1928	6
Lancashire And Furness	1:10,560	1928	7
Lancashire And Furness	1:10,560	1938	8
Lancashire And Furness	1:10,560	1951 - 1952	9
Ordnance Survey Plan	1:10,000	1955 - 1956	10
Ordnance Survey Plan	1:10,000	1965 - 1967	11
Ordnance Survey Plan	1:10,000	1974 - 1978	12
Ordnance Survey Plan	1:10,000	1982	13
Ordnance Survey Plan	1:10,000	1990 - 1991	14
10K Raster Mapping	1:10,000	1999	15
Street View	Variable		16

Historical Map - Slice A

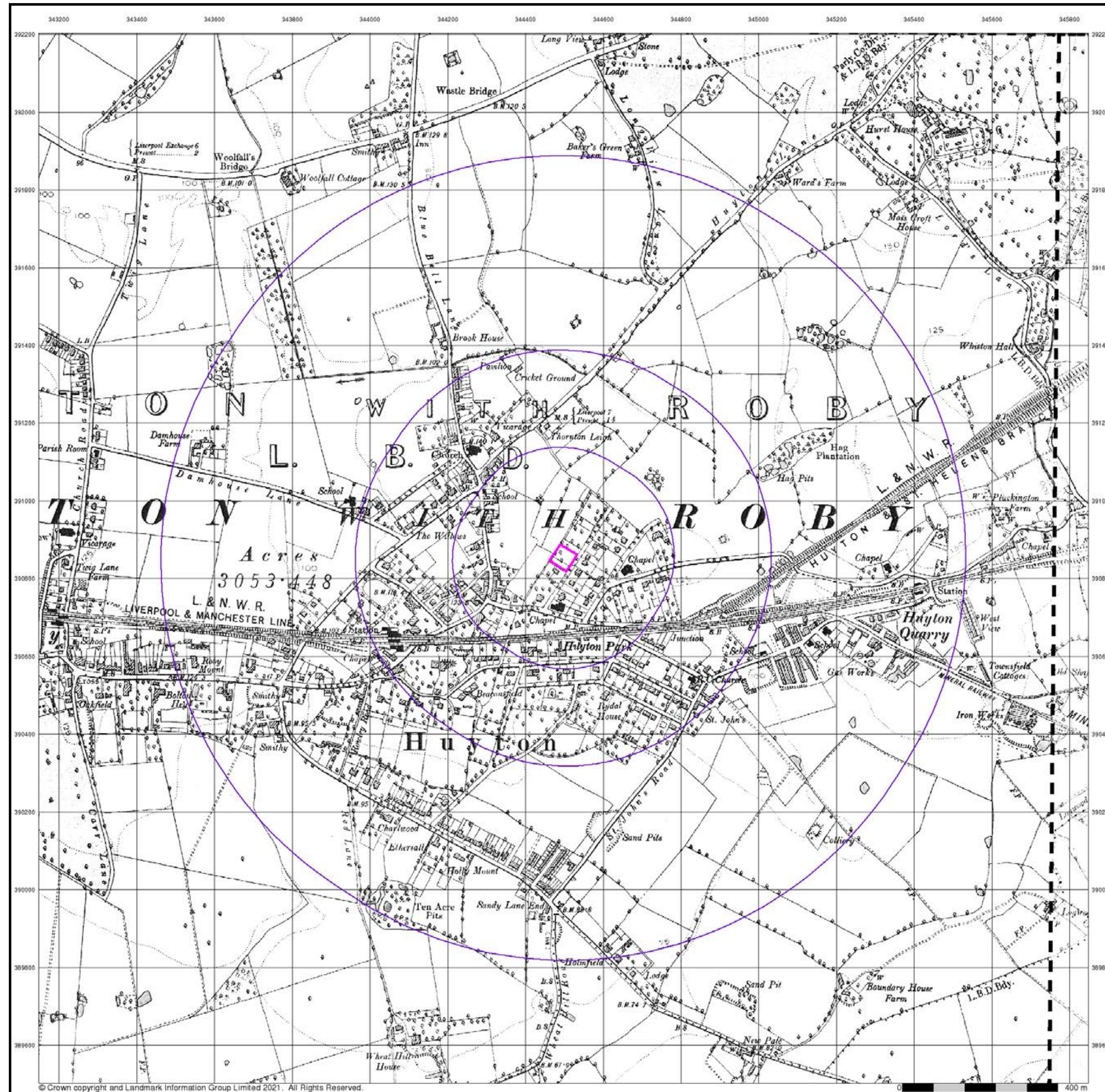


Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

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Lancashire And Furness

Published 1894

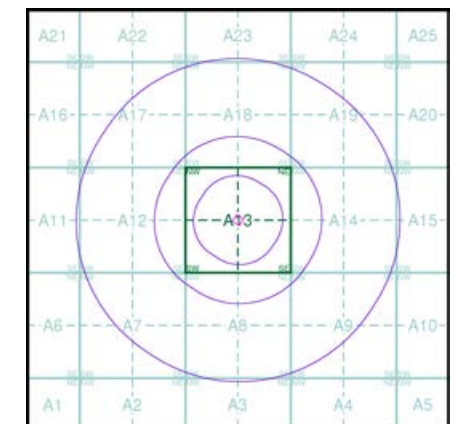
Source map scale - 1:10,560

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)

107NW 1894 1:10,560	107NE 1894 1:10,560
107SW 1894 1:10,560	107SE 1894 1:10,560

Historical Map - Slice A



Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



Lancashire And Furness

Published 1908 - 1909

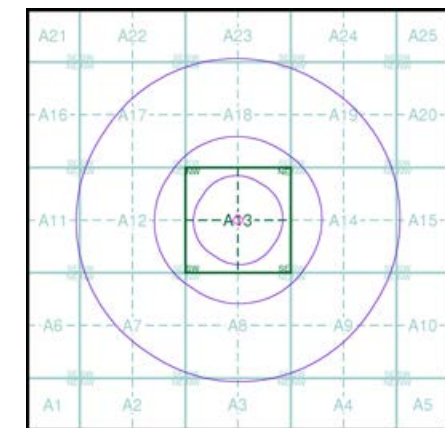
Source map scale - 1:10,560

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)

107NW 1909 1:10,560	107NE 1909 1:10,560
107SW 1908 1:10,560	107SE 1908 1:10,560

Historical Map - Slice A

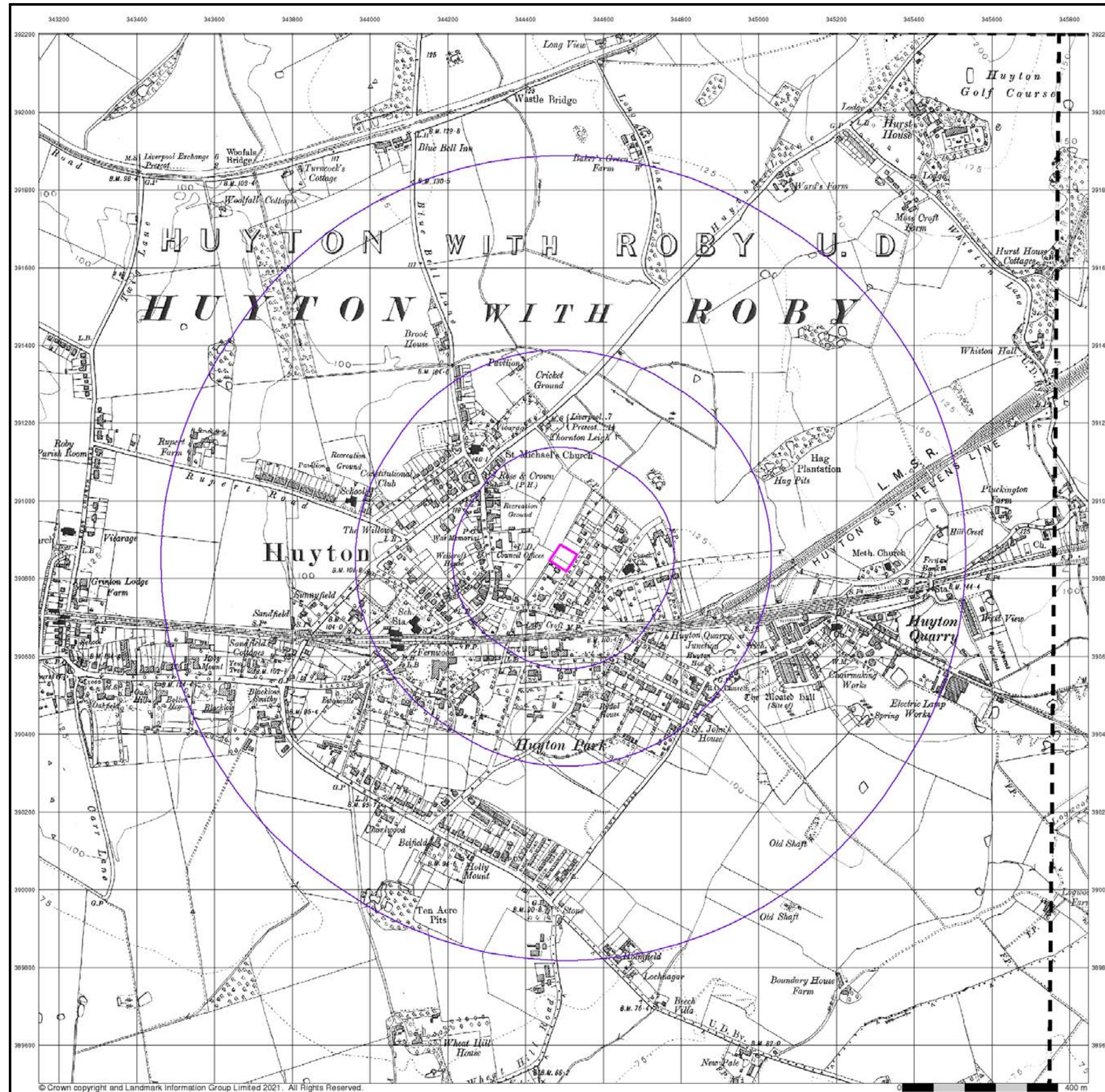


Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



Lancashire And Furness

Published 1928

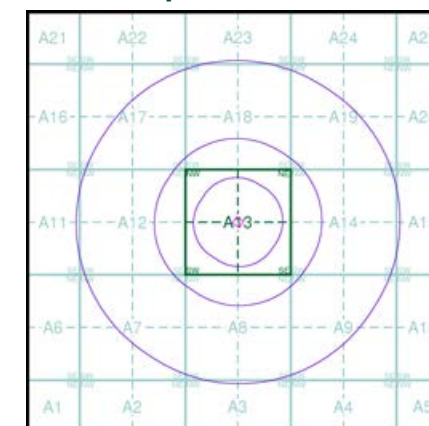
Source map scale - 1:10,560

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)

107NW 1928 1:10,560	107NE 1928 1:10,560
107SW 1928 1:10,560	107SE 1928 1:10,560

Historical Map - Slice A

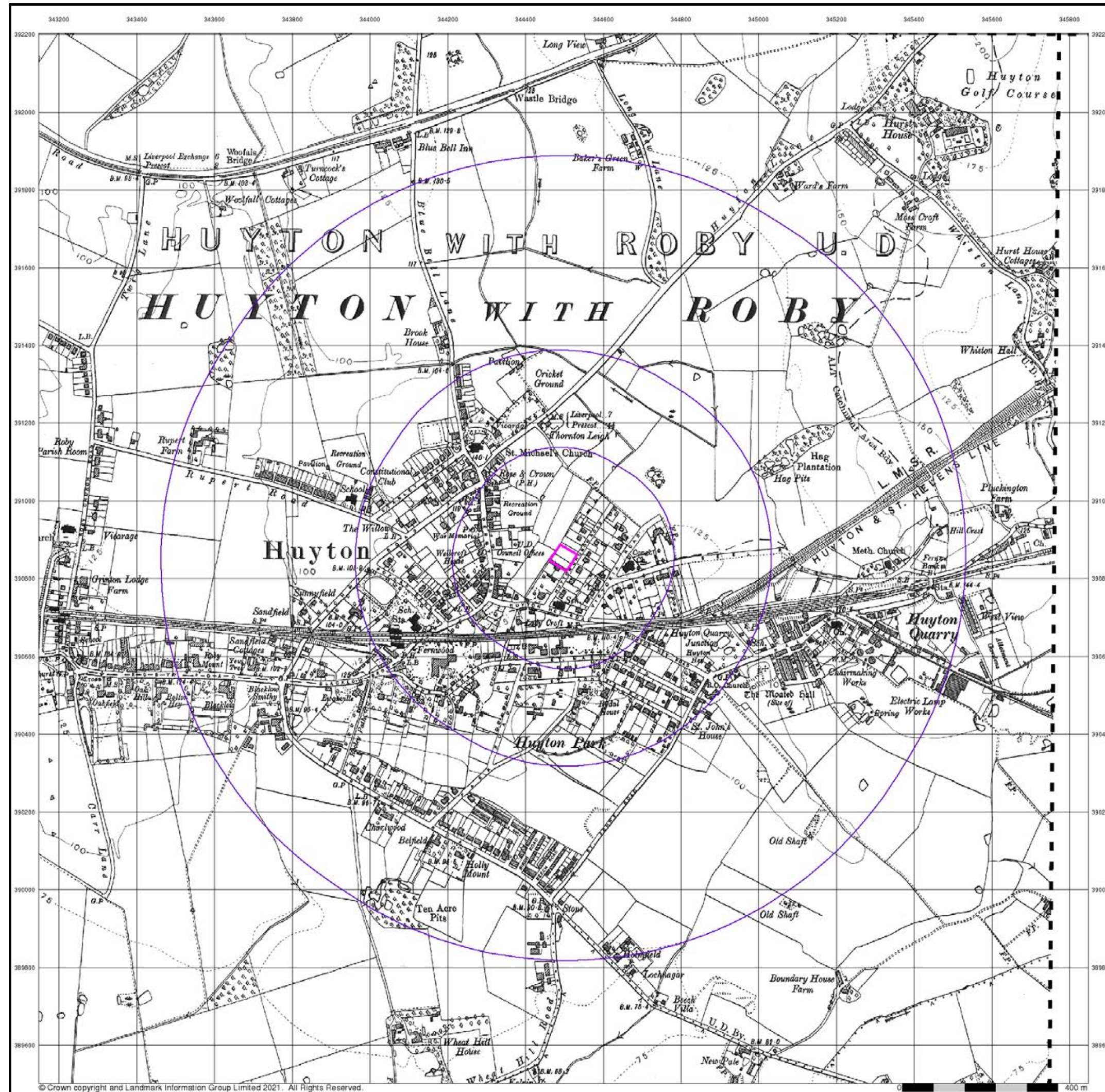


Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



Lancashire And Furness

Published 1928

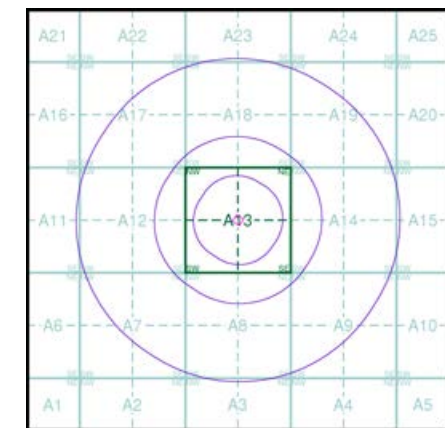
Source map scale - 1:10,560

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)

107NW 1928 1:10,560	107NE 1928 1:10,560
107SW 1928 1:10,560	

Historical Map - Slice A



Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
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Site Details

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Lancashire And Furness

Published 1938

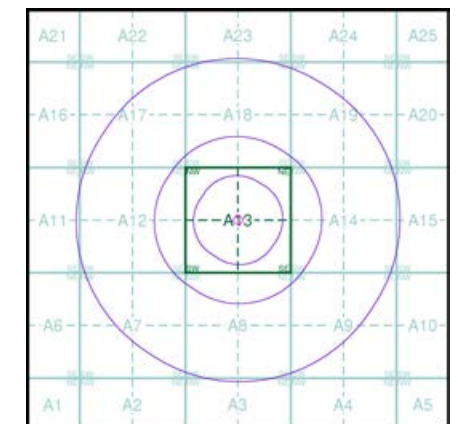
Source map scale - 1:10,560

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)

107NW 1938 1:10,560	107NE 1938 1:10,560
107SW 1938 1:10,560	107SE 1938 1:10,560

Historical Map - Slice A

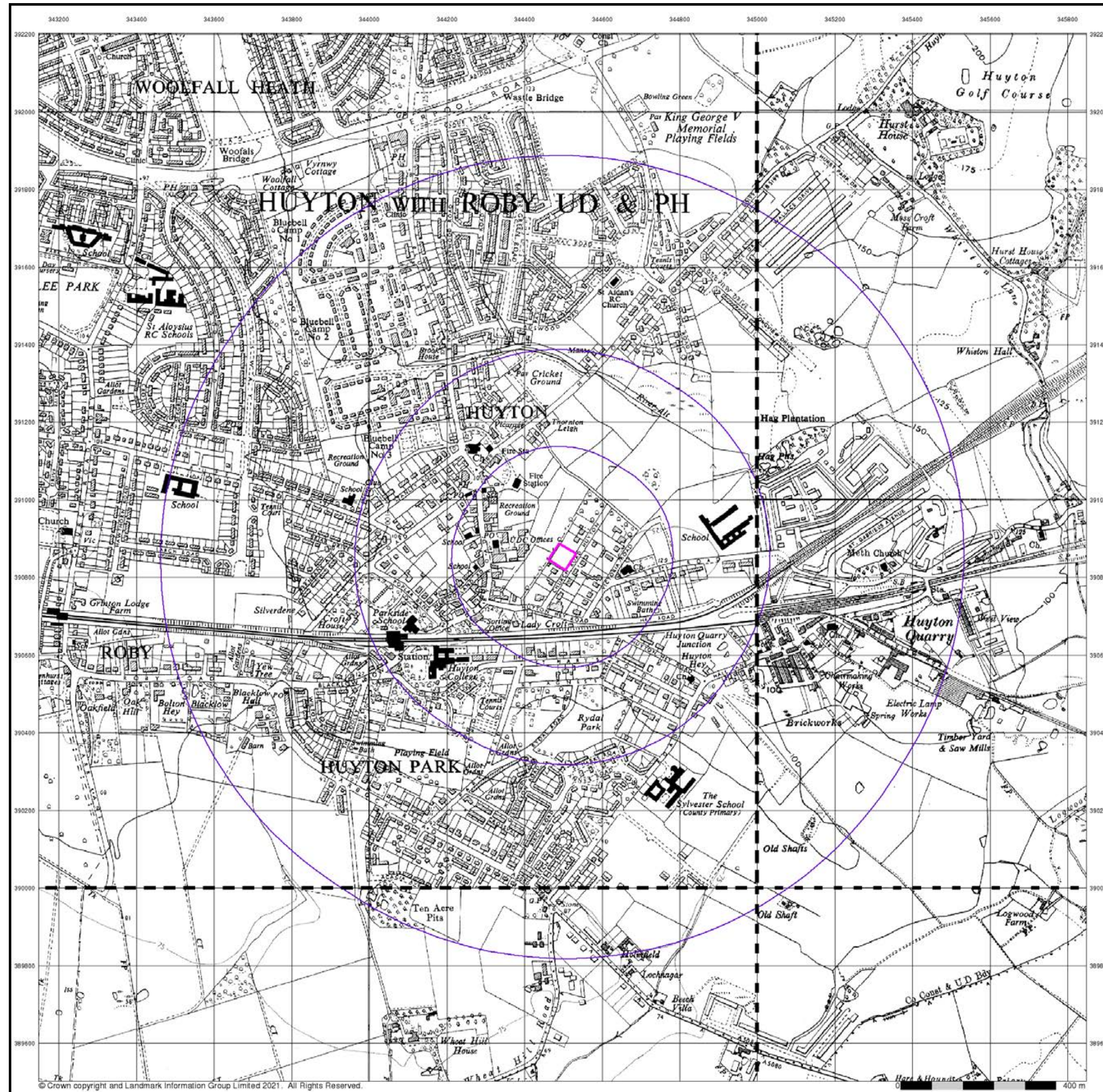


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Ordnance Survey Plan

Published 1955 - 1956

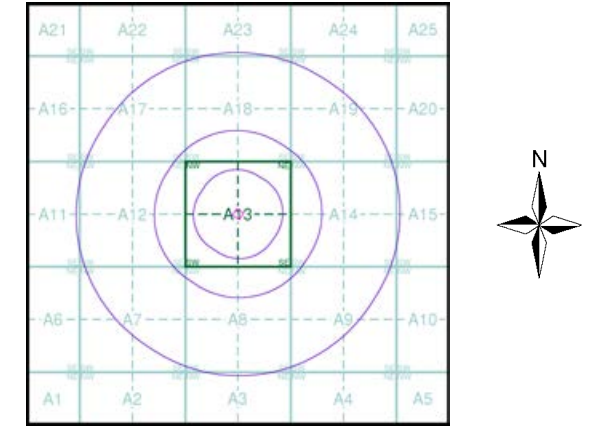
Source map scale - 1:10,000

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)

SJ49SW	SJ49SE
1956	1956
1:10,560	1:10,560
SJ48NW	SJ48NE
1956	1955
1:10,560	1:10,560

Historical Map - Slice A



Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
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Ordnance Survey Plan

Published 1965 - 1967

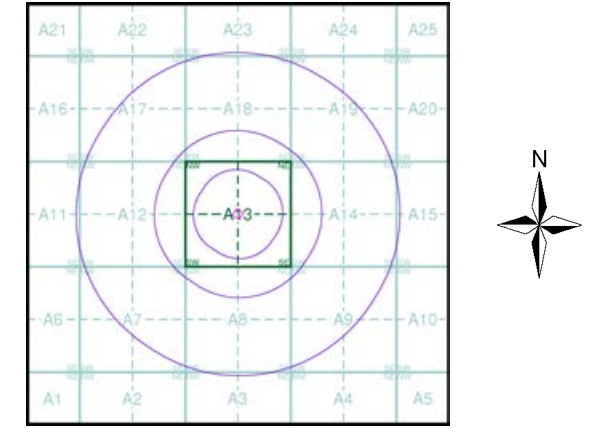
Source map scale - 1:10,000

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)

SJ49SW	SJ49SE
1965	1966
1:10,560	1:10,560
SJ48NW	SJ48NE
1967	1967
1:10,560	1:10,560

Historical Map - Slice A

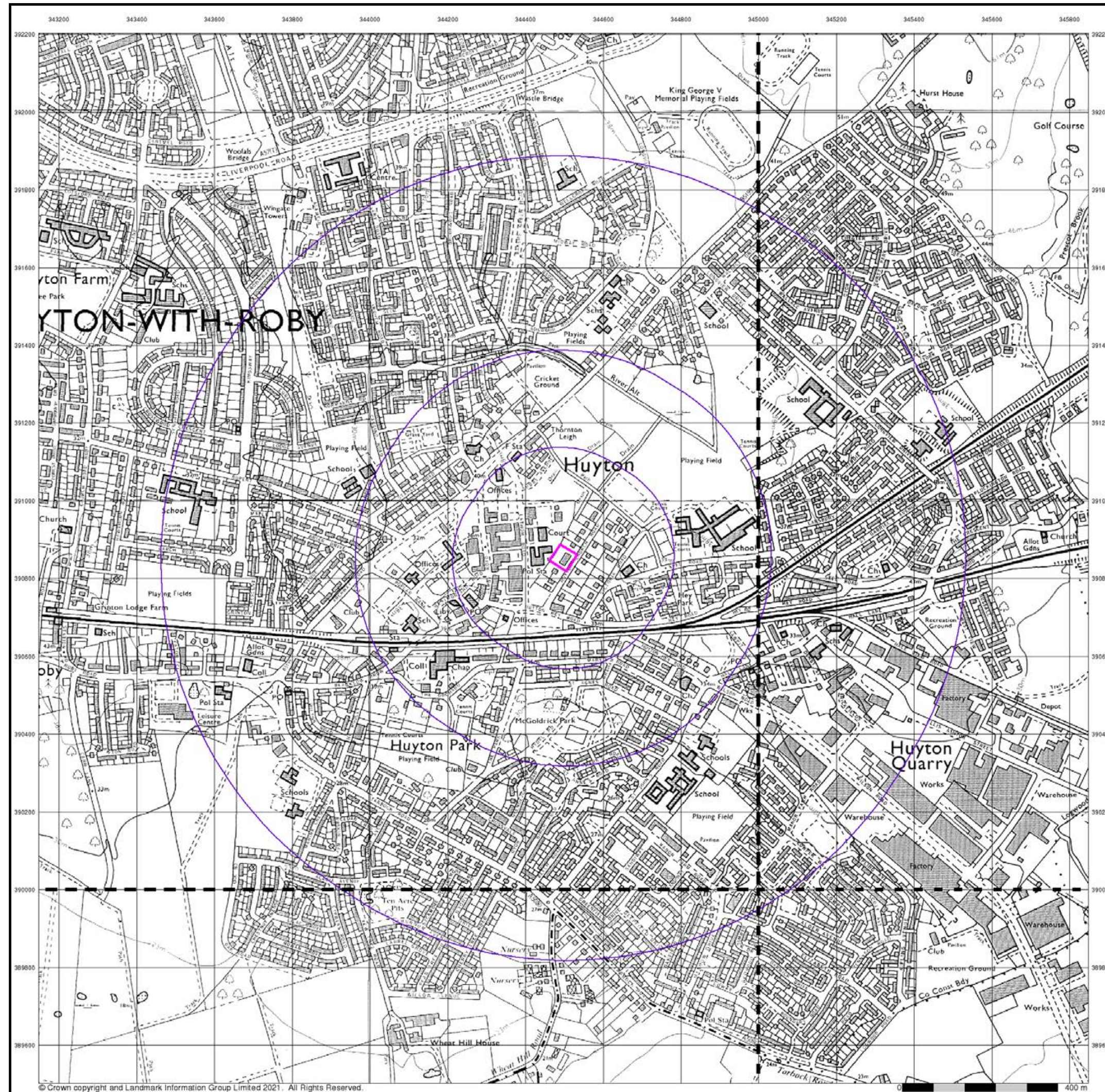


Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1974 - 1978

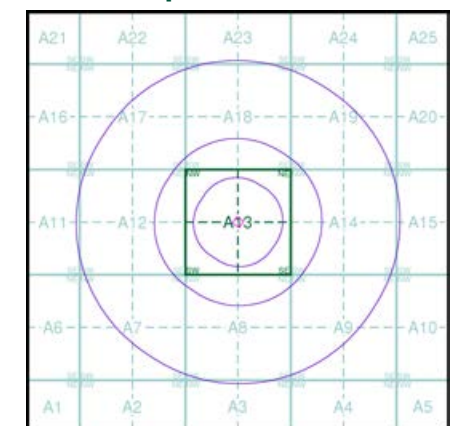
Source map scale - 1:10,000

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)

SJ49SW	SJ49SE
1978	1978
1:10,000	1:10,000
SJ48NW	SJ48NE
1974	1977
1:10,000	1:10,000

Historical Map - Slice A



Order Details

Order Number: 279992997_1_1
Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH



10k Raster Mapping

Published 1999

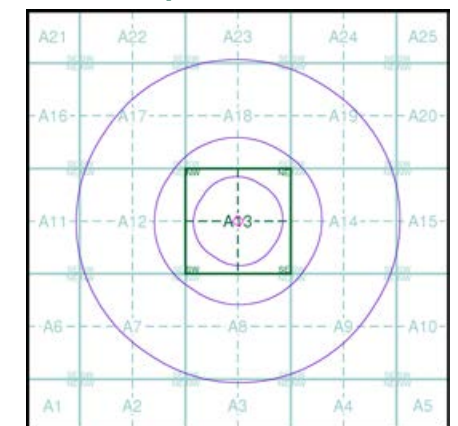
Source map scale - 1:10,000

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)

SJ49SW	SJ49SE
1999	1999
1:10,000	1:10,000
I	
SJ48NW	SJ48NE
1999	1999
1:10,000	1:10,000

Historical Map - Slice A



Order Details

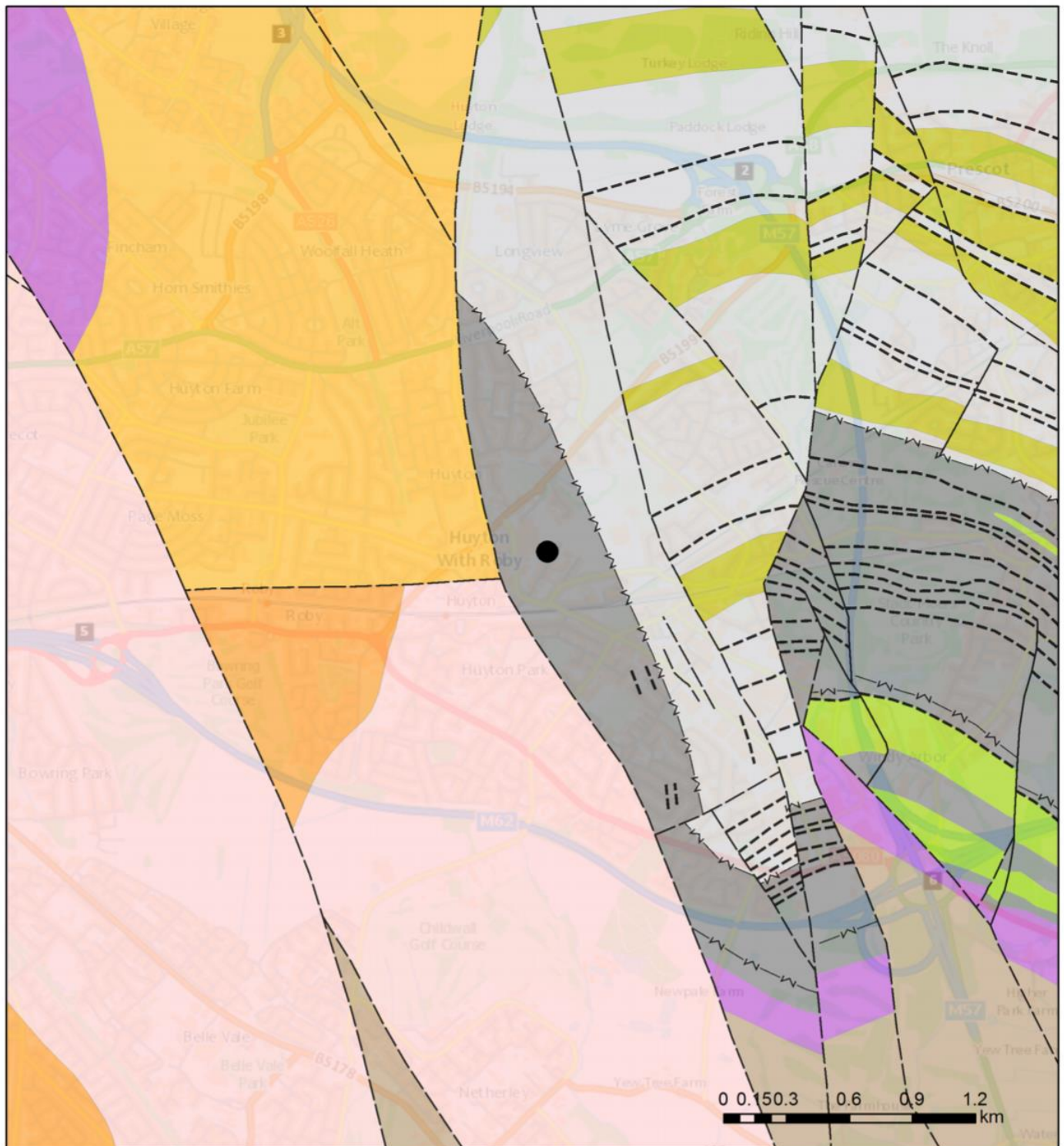
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Customer Ref: ES080621
National Grid Reference: 344500, 390850
Slice: A
Site Area (Ha): 0.26
Search Buffer (m): 1000

Site Details

23, Huyton Church Road, LIVERPOOL, L36 5SH

Appendix D – Geological Maps

Bedrock Geology



Bedrock geology 1:50,000 scale

- [WILMSLOW SANDSTONE FORMATION - SANDSTONE](#)
- [PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE](#)
- [ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE](#)
- [KINNERTON SANDSTONE FORMATION - SANDSTONE](#)
- [PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE](#)
- [CHESTER FORMATION - SANDSTONE](#)
- [CHESTER FORMATION - SANDSTONE, PEBBLY \(GRAVELLY\)](#)
- [CANNEL ROCK \(SOUTH LANCASHIRE\) - SANDSTONE](#)
- [PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE](#)

Linear features 1:50,000 scale

- Coal_seam_Inf
- Fault_Inf_Crossmark_on_downthrow_side
- Fault_Obs_Crossmark_on_downthrow_side
- Marine_band

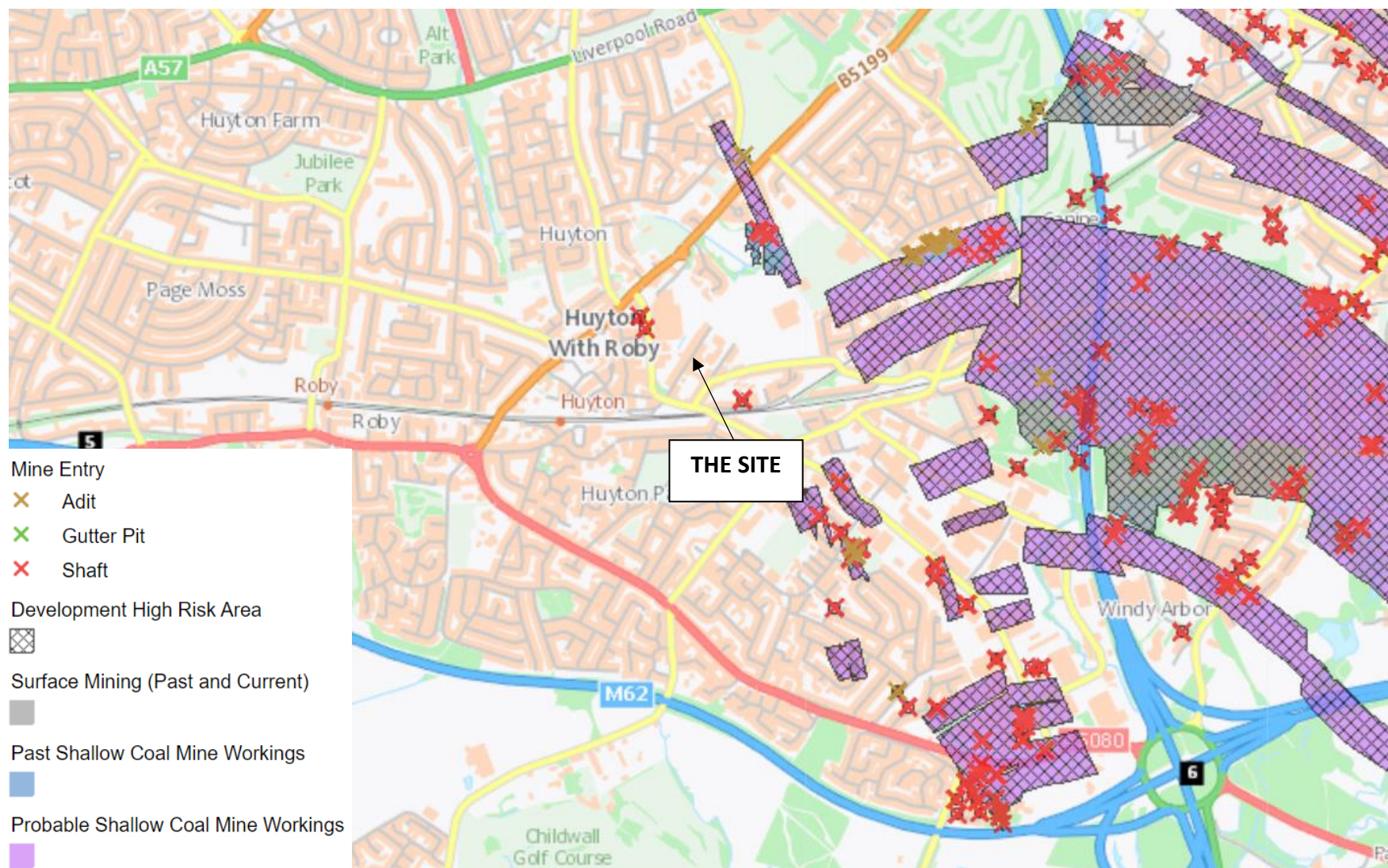
Superficial Geology



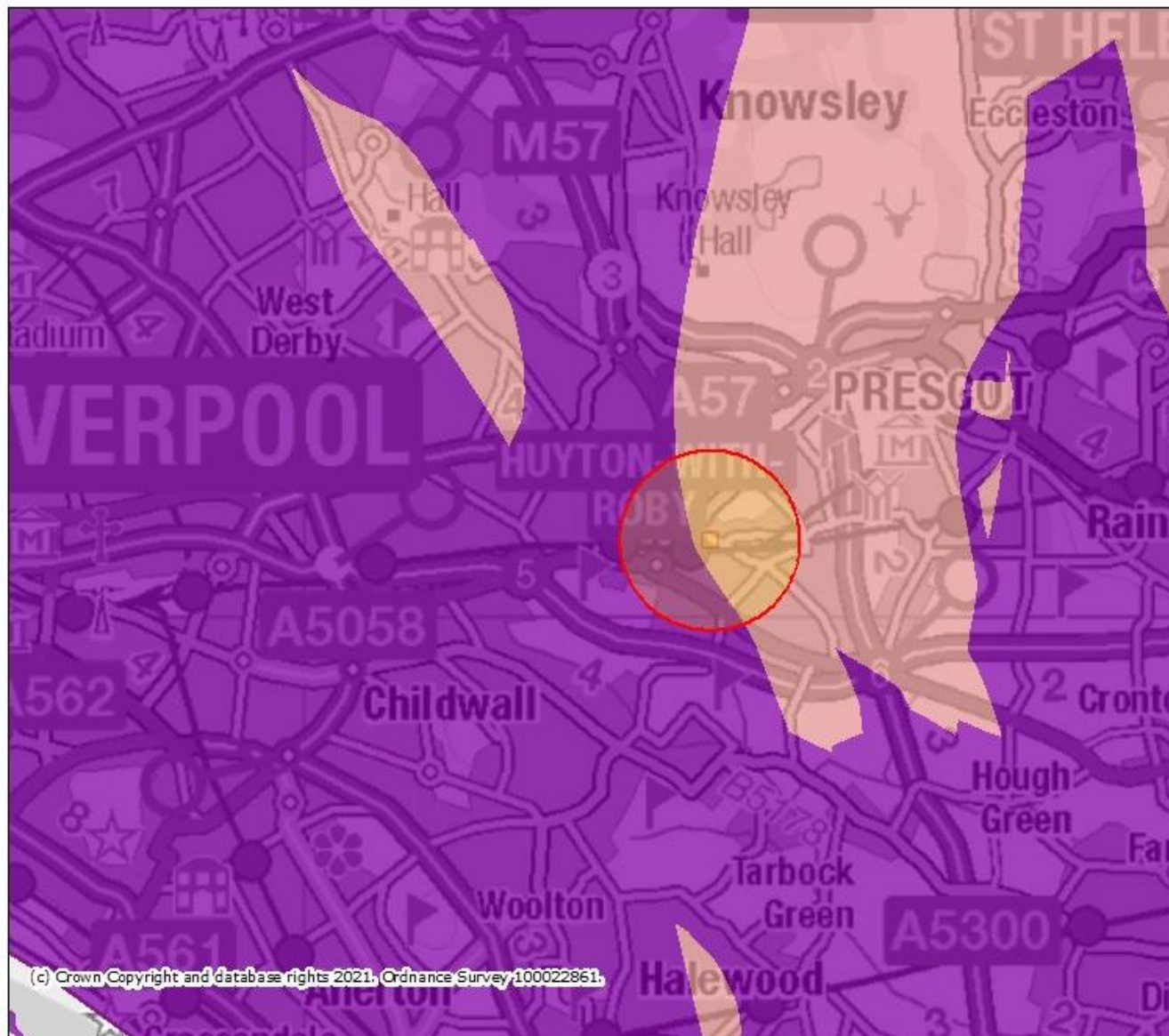
Superficial deposits 1:50,000 scale

- GLACIOFLUVIAL DEPOSITS, DEVENSIAN - SAND AND GRAVEL
- TILL, DEVENSIAN - DIAMICTON
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- ALLUVIAL FAN DEPOSITS - SAND AND GRAVEL
- SHIRDLEY HILL SAND FORMATION - SAND

Appendix E – Coal Mining Summary Map



Bedrock Aquifer



Legend

Aquifer Designation Map (Bedrock) (England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unproductive

Projection = OSGB36

xmin = 329100

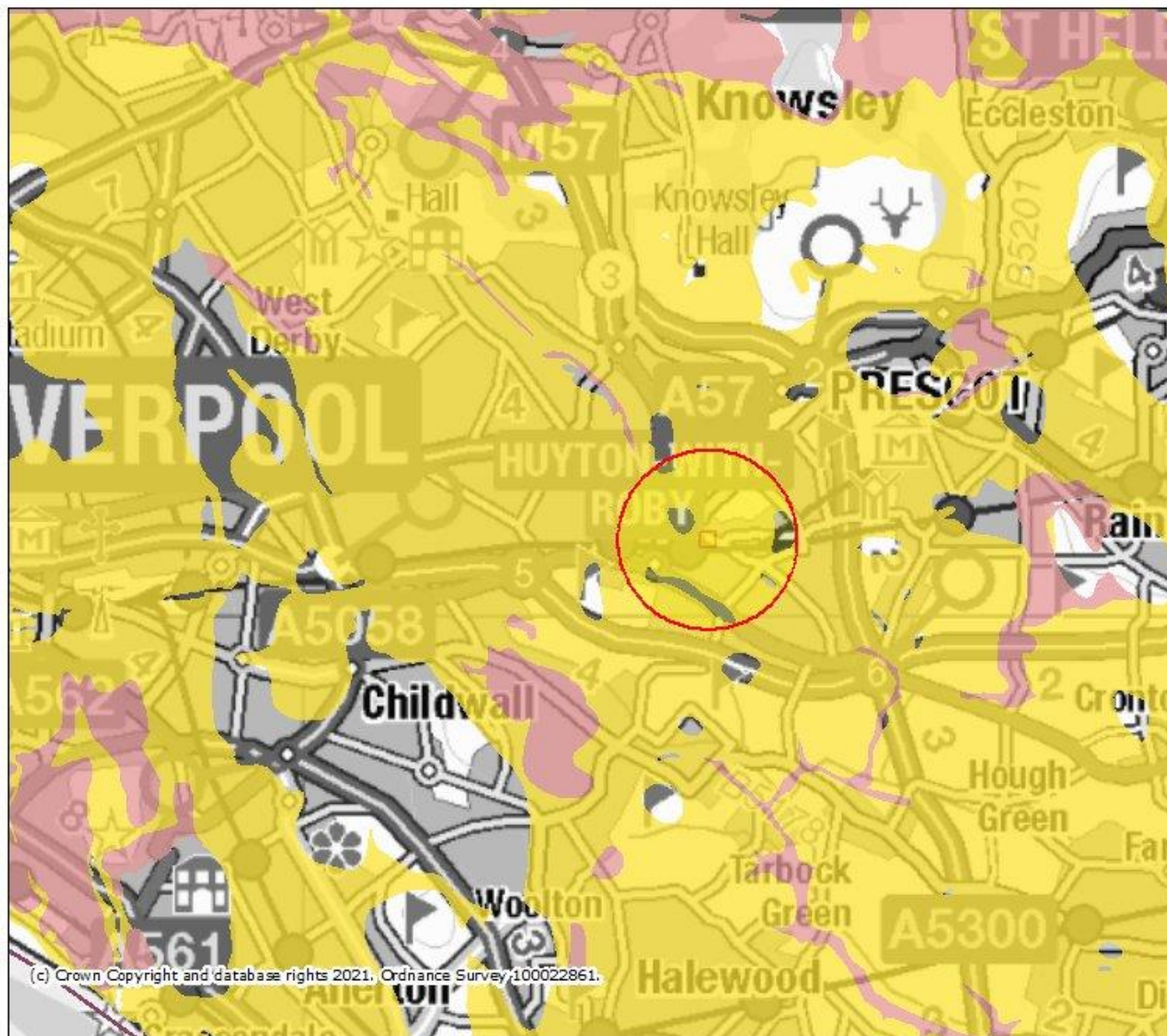
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xmax = 357400

ymax = 400000

Map produced by MAGiC on 7 June, 2021.

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**Legend****Aquifer Designation Map
(Superficial Drift) (England)**

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive

Projection = OSGB36

xmin = 329100

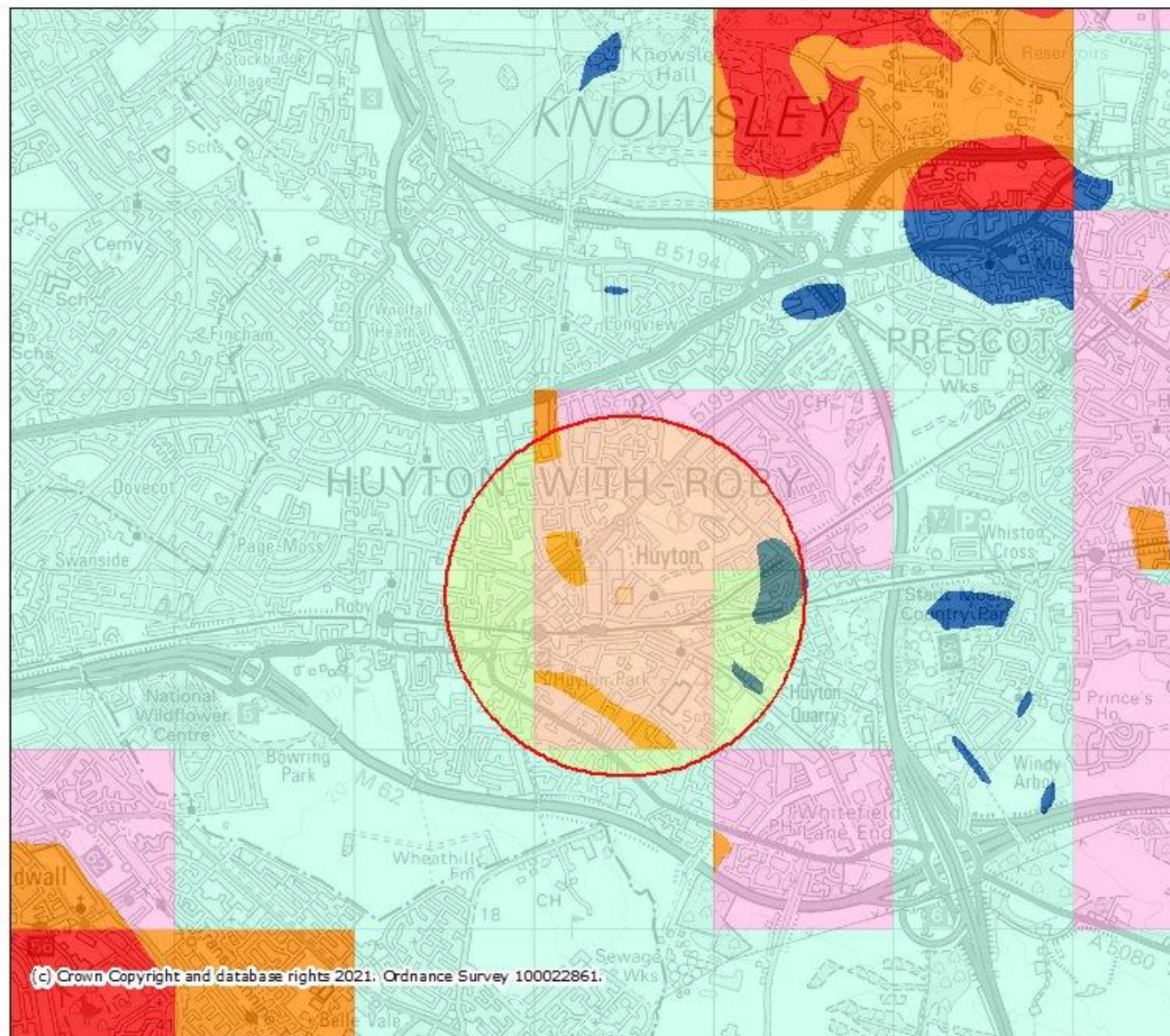
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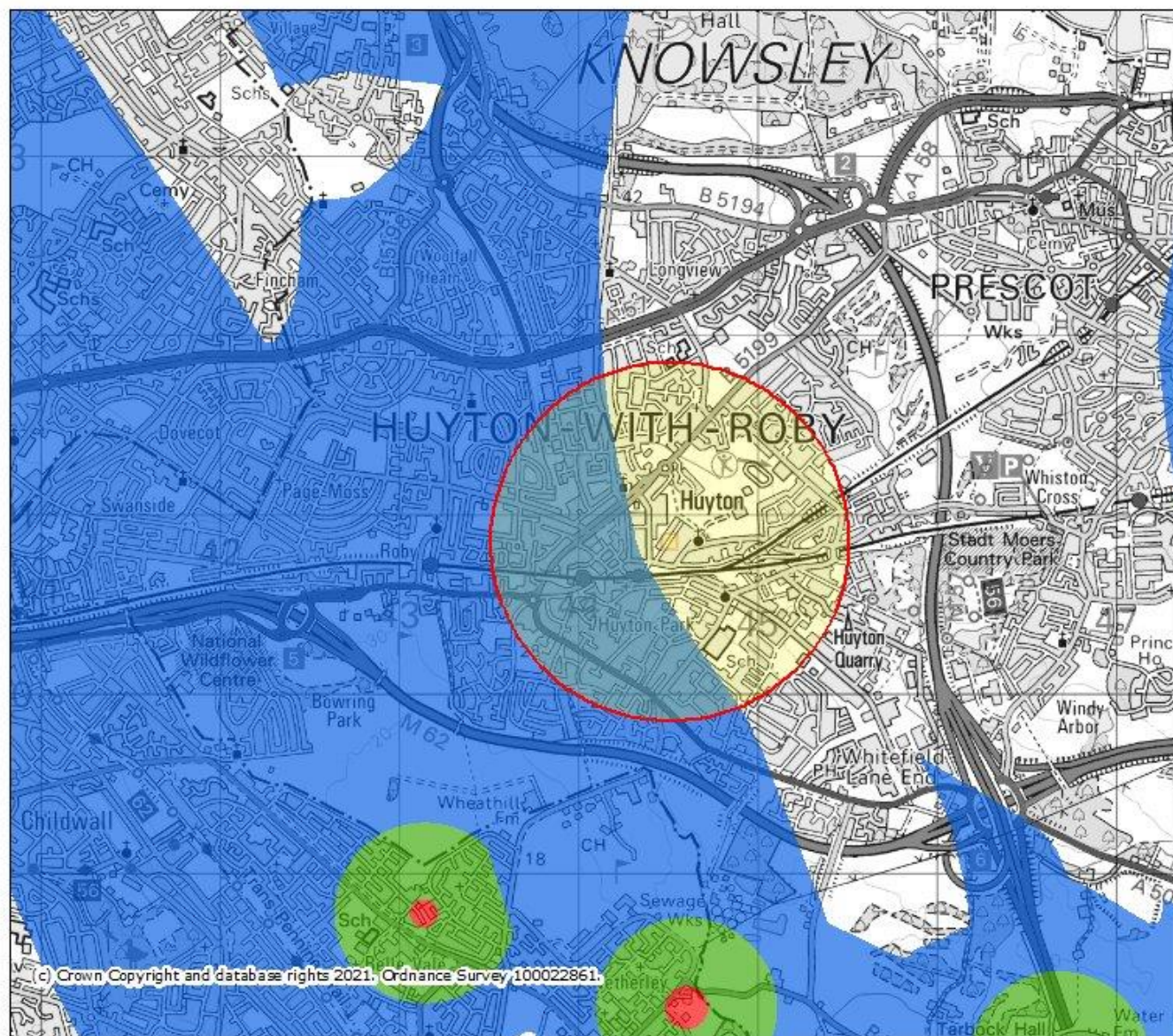
xmax = 357400

ymax = 400000

Map produced by MAGiC on 7 June, 2021.

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**Legend****Source Protection Zones merged (England)**

- Zone I - Inner Protection Zone
- Zone I - Subsurface Activity
- Zone II - Outer Protection Zone
- Zone II - Subsurface Activity
- Zone III - Total Catchment
- Zone III - Subsurface Activity
- Zone of Special Interest

Projection = OSGB36

xmin = 337000

ymin = 386500

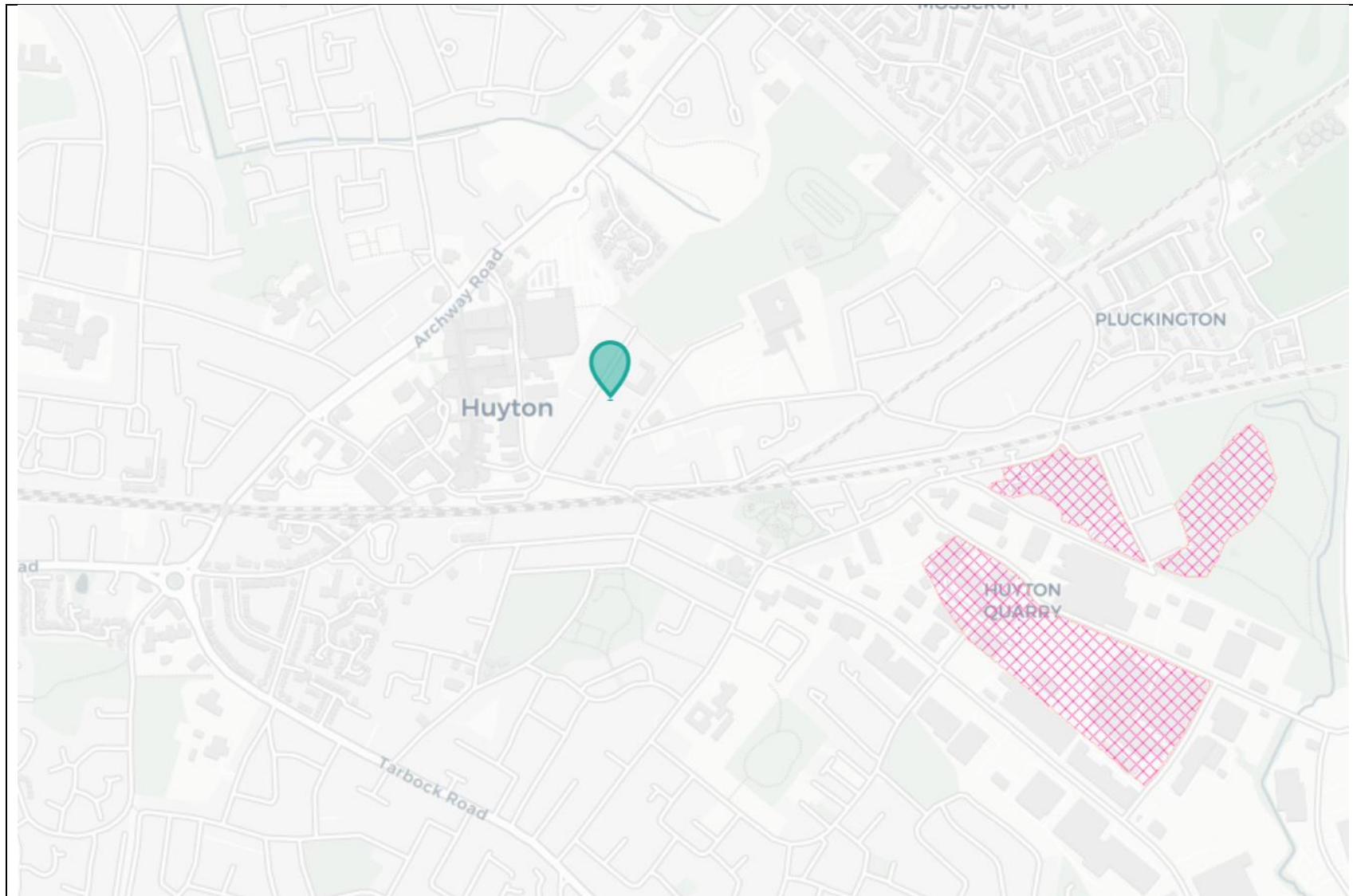
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ymax = 395400

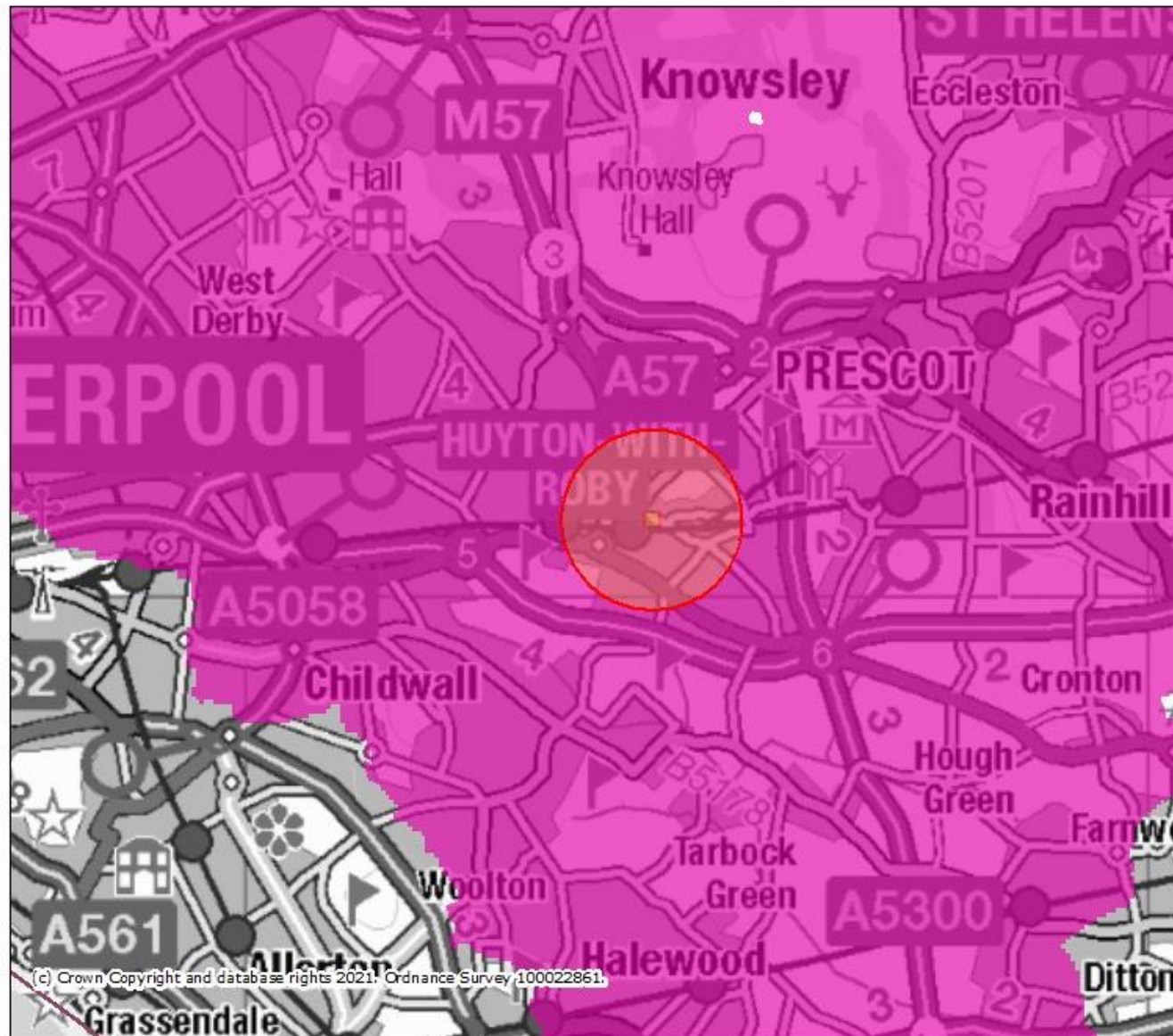
Map produced by MAGIC on 7 June, 2021.

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Appendix G – Historic Landfill Map



Nitrate Vulnerable Zones



Legend

- Nitrate Vulnerable Zones
- 2017 Designations (England)

Projection = OSGB36

xmin = 329800

ymin = 381900

xmax = 358000

ymax = 399700

Map produced by MAGIC on 7 June, 2021.

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