



PHASE I GEO-ENVIRONMENTAL SITE ASSESSMENT

Land off Palatine Road
Northenden
Greater Manchester
M22 4FY

Prepared for:

Gustav Bonnier Holdings Ltd



Report Ref: 13-092-r1
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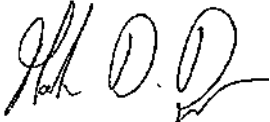
E3P

Heliport Business Park,
Liverpool Road,
Eccles,
Manchester,
M30 7RU

Tel : + 00 (0) 161 707 9612
<http://www.e3p.co.uk>

Registered in England
No.: 807255262

QUALITY ASSURANCE

REMARKS	FINAL
DATE	December 2018
PREPARED BY	R Hodnett
QUALIFICATIONS	BSc (Hons), FGS
SIGNATURE	
CHECKED BY	N Sellars
QUALIFICATIONS	MSci (Hons), FGS
SIGNATURE	
AUTHORISED BY	M Dyer
QUALIFICATIONS	BSc, FGS, AIEEMA, MIEEnvSc, CEnv
SIGNATURE	
PROJECT NUMBER	13-092
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EXECUTIVE SUMMARY		
Site Address	351 Palatine Road, Northenden, Greater Manchester, M22 4FY	
Grid Reference	E383010, N390190	
Site Area	0.11 Hectares	
Current Site Use	The subject site is an irregular shaped parcel of land approximately 7km south of Manchester City Centre and is currently occupied by a series of terraced buildings in the western sector of the site and an area of car parking in the eastern sector of the site. The building consists of a series of terraces comprising commercial units and a residential apartment. However currently only one commercial unit is occupied comprising a tea shop and salon; the residential unit above is currently vacant. The former restaurant has been unoccupied for approximately one month. The northern boundary of the site comprises a concrete fence and the neighbouring property, whilst the eastern boundary is bound by a concrete and wooden fence. There is no formal boundary to the south and the west of the site is bound by Palatine Road.	
Proposed Development	E3P understands that Gustav Bonnier Holdings Ltd are involved in the future redevelopment of the site for a ground floor commercial space with 16No. residential apartments over three floors.	
Environmental Setting	Drift Geology	Glaciofluvial Sheet Deposits, Devensian (Sand & Gravel).
	Bedrock Geology	Tarporley Siltstone Formation (Siltstone, Mudstone, Sandstone)
	Hydrogeology	Secondary A Aquifer overlying a Secondary B Aquifer (Bedrock Geology).
	Hydrology	No surface watercourses have been identified within influencing distance of the site.
	Flood Risk	The site is located within a currently defined Flood Risk Zone 2. A flood risk assessment will be required.
	Ecology	Mature and semi-mature trees present at the south eastern boundary of the site may provide habitat for wildlife.
	Compressible Ground and Subsidence Hazards	No hazard identified in data searches.
Site History	Historical mapping suggests that the site remained undeveloped until pre-1910 when terraced housing was built in the western sector of the site, with an access road to the north of the buildings and structures / garden plots located in the eastern sector of the site. The site has remained relatively unchanged with the exception of two small structures being present in the eastern sector before the entire site other than the terrace housing was utilised for car parking, where the site has remained in this configuration until present day.	
Utility Locations	A formal GPR survey has not been completed, however during the site walkover utility infrastructure was noted around the buildings with manholes located within the alley way to the north of the site.	
Landfill Sites & Ground Gases	No landfill or historic landfill sites are located within 500m of the site. The Envirocheck report indicates potentially infilled land (water) of unknown filled ground (pond, marsh, river, stream, dock etc) located 195m north east of the site from 1955 mapping.	



EXECUTIVE SUMMARY

Invasive Plant Species	A small area of suspected Japanese knotweed was identified during the site walkover along the northern boundary of the site, further investigation and treatment may be required.
Radon	Unaffected – No special precaution required.
Coal Mining / Land Stability	The site is not located within an area deemed to be at risk from ground instability arising from historic coal mining activities.

Geotechnical Risk

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the developed nature of the site, it is likely there will be significant Made Ground fill deposits and obstructions, especially beneath the existing buildings which contain basements. Existing buildings will require demolition with all relic foundations grubbing out, prior to the construction of the proposed development;
-  Following the removal of Made Ground deposits, the material will need to be appropriately reengineered to create a suitable development platform which will be subject to geotechnical testing; and,
-  Due to the anticipated presence of significant depths of Made Ground and the height of the proposed development, it is considered that an engineered foundation solution will be required for the proposed development.

Contaminated Land Risk Assessment

Human Health

Made Ground deposits associated with the existing and former structures on the site are a potential source of heavy metals and PAHs.

No historical industrial activities have been identified on site which would be a potential source of hydrocarbon contamination and no evidence was identified during the site walkover. However, there is a potential for historic spillages of hydrocarbon compounds to have occurred on the site, potentially associated with the scrap metal works formally located 90m east of the site.

Asbestos containing materials may be present within the building fabric of the current building on site and associated with the former structures in the eastern sector of the site. Due to the age of the building it is considered likely that ACM material will be present, therefore a pre-demolition asbestos survey will be required.

Controlled Waters

Any soluble phase contaminants identified within the soils could pose a potential risk to controlled waters. The underlying Secondary A Aquifer within the drift deposits could provide a pathway for any contaminants; however given the lack of a viable receptor within influencing distance of the site a complete pollutant linkage has not been identified, therefore a low risk to controlled waters is considered. However, a detailed controlled waters risk assessment will be required to satisfy the Environment Agency.

Ground Gas

The nature of the Made Ground is currently unknown; however, any organic materials present could be a potential source of methane and carbon dioxide. Carbon dioxide and methane have associated asphyxiation and explosive risks respectively and if present the risks can be appropriately mitigated through the careful design of building structures.

Recommendations

A detailed Phase II intrusive Geo-Environmental Ground Investigation should be undertaken in order to confirm the findings of the initial conceptual site model and value engineer a development solution.

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Appendix I Limitations

Appendix II Glossary

Appendix III Drawings

Drawing No 13-092-001 – Site Location Plan

Drawing No 13-092-002 – Proposed Development Plan

Drawing No 13-092-003 – Site Features Plan

Drawing No 13-092-004 – Historical Features Plan

Appendix IV Photographs

Appendix V Historical Maps

1. INTRODUCTION

1.1 Background

E3P Ltd has been commissioned by Calderpeel Architects, on behalf of their client, Gustav Bonnier Holdings Ltd, to undertake a Phase I Geo-Environmental Site Assessment at land off Palatine Road, Northenden, approximately 7km south of Manchester City Centre.

This report is required to determine potential contaminated land and geotechnical liabilities associated with a proposed future development.

1.2 Proposed Development

E3P understands that Gustav Bonnier Holdings Ltd are involved in the future redevelopment of the site, for a ground floor commercial space with 16No. residential apartments over three floors. Drawing 13-092-002 (Appendix III) identifies the proposed development layout.

A snapshot of the proposed development layout is indicated in Figure 1.1 below:

Figure 1.1 *Snapshot of Proposed Development*



1.3 Objectives

The objectives of the Geo-Environmental Investigation are to:

-  Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11));

-  Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors;
-  Assess the desk study information and where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs; and,
-  Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

1.4 Limitations

The limitations of this report are presented in Appendix I.

1.5 Sources of Information

Background information was sought from the following sources:

-  Envirocheck Search;
-  Historical mapping dated 1848 to 2018. A selection of historical maps are reproduced in Appendix V;
-  On-line planning records held by Manchester City Council;
-  Consultations with representatives of Manchester City Council;
-  Environment Agency Groundwater Vulnerability Map (www.environment-agency.gov.uk/wiyby);
-  Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007); and,
-  British Geological Survey Map.

1.6 Confidentiality

E3P has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

2. SITE SETTING

2.1 Site Details

Site Address	351 Palatine Road, Northenden, Greater Manchester, M22 4FY
National Grid Reference	E383010, N390190
Site Area	0.11 Hectares

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 13-092-001.

2.2 Current Site Use

E3P has undertaken a site walkover of the entire site and a description of the key findings is summarised in Table 2.1.

Table 2.1 Site Description

Occupancy/use	The subject site is an irregular shaped parcel of land approximately 7km south of Manchester City Centre and is currently occupied by a series of terraced buildings in the western sector of the site and an area of car parking in the eastern sector of the site. The building consists of a series of terraces comprising commercial units and a residential apartment. However currently only one commercial unit is occupied comprising a tea shop and salon; the residential unit above is currently vacant. The former restaurant has been unoccupied for approximately one month. The northern boundary of the site comprises a concrete fence and the neighbouring property, whilst the eastern boundary is bound by a concrete and wooden fence. There is no formal boundary to the south and the west of the site is bound by Palatine Road.
Structures	A row of brick terraces run along Palatine Road in the western sector of the site. The terraces are split into two buildings of which one is vacant (former restaurant) and the other is a teashop/salon with residential apartment above (vacant). There is a basement under the vacant restaurant approximately 3.00m x 3.00m and a basement is also present under the teashop with dimensions of approximately 4.00m x 4.00m. A small brick wall, approximately 1ft tall, runs along the eastern boundary of the site in front of the boundary wall.
Access	Pedestrian and vehicular access can be gained from Palatine Road via an alleyway to the north of the existing building, which leads to the car park in the eastern sector of the site. Pedestrians can access the commercial properties off Palatine Road and through rear entrances. The site is open to public access and the buildings are locked and secure.
Slope	The site is flat with no notable topographical variances.
Retaining structures	No retaining structures were identified during the site walkover.

Surface Cover (%)	Buildings:	60%
	Hardstand:	35%
	Soft cover:	5%
Vegetation/Ecology	Rough scrub vegetation is present in limited areas along the eastern boundary of the site. Circa. 12 No. mature and semi mature trees are present at the south eastern boundary of the site. Other trees located off site are overgrowing and encroaching into the eastern boundary of the site. A small area of suspected Japanese Knotweed was identified along the northern boundary of the site, further investigation and treatment may be required.	
Hazardous Material Storage	No Above Ground Storage Tanks (AST) or Underground Storage Tanks (UST) were observed at the site during the preliminary site walkover. A combi boiler was noted within the vacant building.	
Asbestos Containing Material (ACM)	No evidence of ACM was noted during the site walkover, however due to the age of the building it is likely that ACM will be contained within the building fabric. Due to the lack of any further structures on the site, it is unlikely there will be any further asbestos present on the site. A pre-demolition asbestos survey will be required within the existing buildings on site.	
Polychlorinated Biphenyls (PCBs)	There is no equipment identified which may contain PCBs within the site boundary or within close proximity of the site.	
Waste Storage	Potentially hazardous waste streams are unlikely to be generated at the site and none were observed during the preliminary site inspection.	
Drainage	A formal drainage survey has not been completed, however during the site walkover, drainage infrastructure was noted to run along the existing building and evidence of gas infrastructure was identified at the entrance to the site.	

2.3 Surrounding Area

The surrounding area land uses are summarised in Table 2.2.

Table 2.2 ***Surrounding Land Uses***

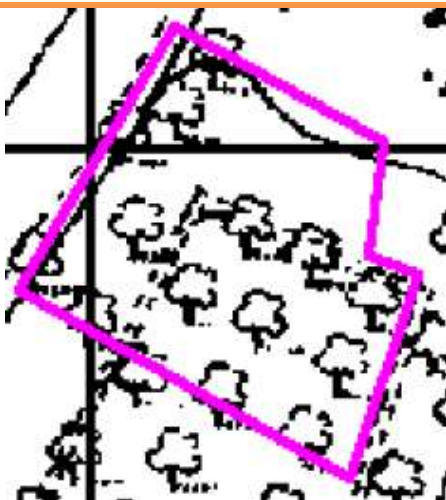
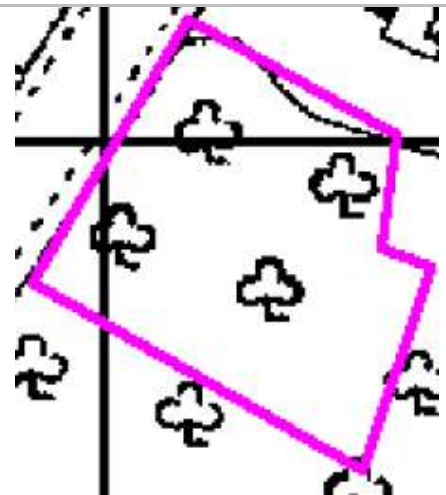
DIRECTION	LAND USE
North	Commercial units with residences above.
East	Residential units
South	Commercial units with residences above (adjoined to buildings currently on the subject site)
West	Palatine Road (B5167), Commercial Units.

3. SITE HISTORY

3.1 On-Site Historical Development

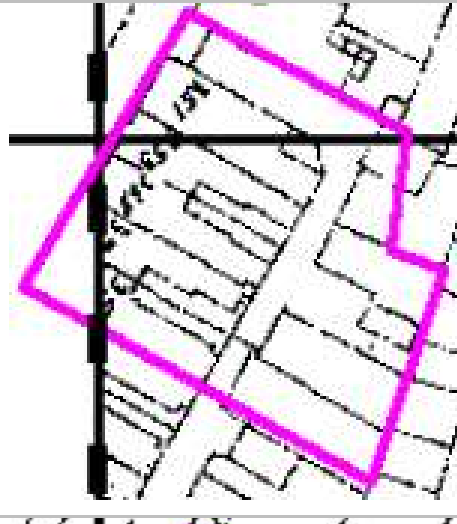
A review of historical mapping pertinent to the site is summarised in Table 3.1 below. In addition, historical site features are presented on Drawing No 13-092-004 in Appendix III.

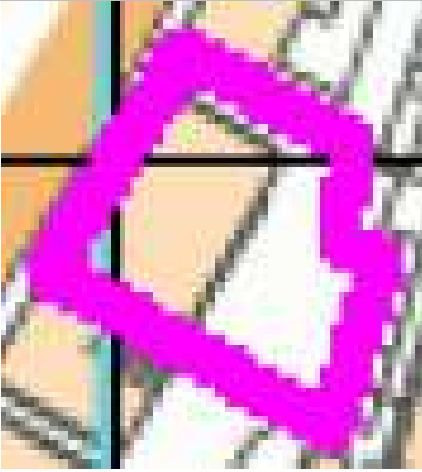
Table 3.1 *Site Historical Development*

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1872-1877 1:2,500	The site is shown to comprise undeveloped agricultural land with field boundaries dissecting the northern and central sectors of the site. The central and southern sector contains planted trees in a series of rows. Sporadic trees are also present in the western and northern sectors of the site.	
1898	The field boundary in the central sector of the site has been removed, as have a number of the trees with orchard trees now located sparsely across the site.	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1910	A series of five properties in the form of terraced housing have been constructed in the western sector of the site, adjacent to Palatine Road. An access road from Palatine Road runs along the north and eastern sides of the terraces. Furthermore, a series structures or garden plots are now present in the eastern sector of the site and a small square structure partly encroaches within the north eastern boundary.	
1922	There are no significant changes to the subject site.	
1934-1935	The boundaries of the structures / garden plots in the eastern sector of the site have been altered slightly. There are no other significant changes to the subject site.	



MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1955-1959	No significant changes other than minor alterations to the structures / garden plots in the eastern sector of the site.	
1975-1976	There are no significant changes to the subject site.	
1992	Two small structures are now present along the eastern boundary of the site. The road to the rear of the terrace building has been widened to create an open area of hardstanding, presumably utilised for car parking.	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
2000	The satellite image shows the terraces unchanged in the western sector of the site and the majority of the remainder of the site comprising a car parking area. Mature trees are also present at the north eastern and south eastern boundaries.	
2018 1:10,000	The terraces remain in the western sector of the site with a car parking area in the eastern sector of the site.	

3.2 Off-Site Historical Development

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250m radius of the site is summarised in Table 3.2 overleaf.

Table 3.2 Surrounding Potentially Contaminative Land Uses.

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Pond <i>Then residential units</i>	50m	Pre 1872-Pre 1910 Pre 1910-Present	East
Breakers Yard (scrap metal works) <i>Then residential units</i>	90m	Pre 1984-Pre 1992 Pre 1992-Present	East
Tank <i>...Then no longer marked</i>	175m	Pre 1955 – Pre 1980 Pre 1980 - Present	North East
Breakers Yard (scrap metal works) <i>Then residential units</i>	185m	Pre 1984-Pre 2018 Pre 2018-Present	East
Northenden Mill (corn) <i>Then car park</i>	180m	Pre 1872-Pre 1975 Pre 1975-Present	North East
Electrical Sub Station	180m	Pre 1959-Present	North East
Garage <i>Then fuel station</i>	180m	Pre 1955-Pre 1959 Pre 1959-Present	North
Graveyard	220m	Pre 1872-Present	South East
Laundry services <i>Then vehicle garage</i>	220m	Pre 1922-Pre 1992 Pre 1992-Present	South West
Gravel Pit / Shingle <i>...Then Shingle</i> <i>...Then no longer marked</i>	231m	Pre 1877 – Pre 1980 Pre 1980 – Pre 1989 Pre 1989 - Present	North East
Garage <i>...Then no longer marked</i>	250m	Pre 1955 – Pre 1978 Pre 1978 - Present	North

3.3 Planning History

E3P has undertaken a detailed search of on-line planning records held by Manchester City Council which has identified an application for the '*Installation of canopy to front of premises and elevational alterations including installation of new entrance doors and glazing*' made for the properties on site in 2010 Ref. No: 092672/FO/2010/S2 and for '*Installation of new shop front and elevational alterations*' made by Palatine Bar and Restaurant in 2011 Ref. No: 095729/FO/2011/S2.

No other planning application information pertinent to the site has been identified during the search.

4. ENVIRONMENTAL SETTING

4.1 Geology and Hydrogeology

The British Geological Survey (BGS) map for the site, (1:50,000, Solid & Drift edition) and online records indicates the site is underlain by the geological sequence presented in Table 4.1.

Table 4.1 Summary of Underlying Geology

GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	Glaciofluvial Sheet Deposits, Devensian	Sand and Gravel	Secondary A Aquifer
Solid	Tarporley Siltstone Formation	Siltstone, Mudstone and Sandstone	Secondary B Aquifer

Table 4.2 Summary of BGS Borehole Records

LOCATION	DEPTH	MADE GROUND	DRIFT	SOLID
80m East	6.15m	Rubble <0.50m	Interbedded clay and sand <4.30m	Weathered to hard red Marl <6.15m
100m South	3.81m	Soil <0.15m	Gravel <1.83m Sand <3.81m	N/A
110m East	6.15m	Rubble and sand <1.10m	Clayey sand and gravel overlying clay <4.40m	Weathered to hard red Marl <6.15m

The Envirocheck Report indicates that the site is not located within a Groundwater Source Protection Zone. Furthermore, there is only one groundwater abstraction within 1km of the site located 959m east of the site which is used for spray irrigation of a golf course and not for potable use.

Historical mappings has identified pumps and wells within 250m of the subject site.

Based on the local topography and the location of surface watercourses, it is considered likely that shallow groundwater, if present, will flow in a north easterly direction, following the topographical gradient towards The River Mersey to the north east.

4.2 Geotechnical Data

Geotechnical Data presented within a commercially available environmental database is summarised within Table 4.3 overleaf.

Table 4.3 Summary of Geotechnical Data

HAZARD	DESIGNATION
Shrink-Swell Clay	Very Low Risk
Landslides	Very Low Risk
Ground Dissolution	No Hazard
Compressible Ground	No Hazard
Collapsible Deposits	Very Low Risk
Running Sand	Very Low Risk

4.3 Coal Mining

The Envirocheck Report states the site is in an area which may not be affected by coal mining.

The Coal Authority operates a risk based approach to the assessment of potential instability issues associated with future development of land located within the pre-defined Coal Authority Consultation Areas. This risk based approach sub-divides the potential risk into 'Low & High' Risk Categories.

To determine the initial risk classification of the proposed development site, a search of the Coal Authority Gazetteer (<http://mapapps2.bgs.ac.uk/coalauthority/home.html>) has been undertaken to assess the locality of the proposed development in relation to known or potential areas of mining risk.

The results of this search confirmed that the proposed development site is not located within a coal mining reporting area and therefore deemed to at a **Low Risk** from historic mine workings therefore no further assessment is required.

4.4 Brine Workings

The site is not situated in an area affected by brine pumping / extraction or rock salt mining.

4.5 Hydrology

Surface water features within 250m of the subject site are summarised in Table 4.4.

Table 4.4 Surface Water Features

SURFACE WATER FEATURE	QUALITY	DISTANCE (m)	DIRECTION
River Mersey	Fair	210m	North East

The site is located within a currently defined Flood Risk Zone 2; defined as land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year. The Envirocheck Report states the site does not have potential for groundwater flooding to occur, however a flood risk assessment will be required.

4.6 Radon Risk Potential

The Envirocheck Report indicates the site is situated in an area where less than 1% of homes are above the Action Level and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions.

4.7 Industrial Land Uses

There is one Contemporary Trade Directory Entry listed on the site, this was for Home Direct UK and was classified as an Electrical Goods Sales, Manufacturers & Wholesalers, however is now inactive.

Twenty four other entries are listed within 250m of the site with the majority relating to dry cleaning, hardware, printers, car dealers, domestic appliance servicing & repairs, garage services, metal product fabrication and a petrol filling station which is located 179m north of the site.

Only four of these entries are currently active, the closest of which is for domestic appliance servicing and is 109m south east of the site.

4.8 Sensitive Land Uses

The closest residential properties are located adjacent to the south of the site; the building is adjoined with the existing building on the site. Residential buildings with associated gardens are located adjacent to the eastern boundary.

No other environmentally sensitive land uses have been identified within close proximity to the site.

4.9 Site Sensitivity Assessment

The site is assessed to be located within a **Moderate** sensitivity setting as discussed within Table 4.5 overleaf.

Table 4.5 Site Sensitivity Assessment

SENSITIVITY PROFILE	DISCUSSION	RATING
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The site is not located within a groundwater source protection zone.	LOW
Distance to the closest groundwater abstraction point.	The closest groundwater abstraction point is located circa. 959m East of the site, used for spray irrigation on a golf course and is not for potable use.	LOW
Aquifer Classification in Superficial Drift Deposits.	Secondary A Aquifer	MODERATE
Aquifer classification in Bedrock.	Secondary B Aquifer	LOW
Is the site underlain by low permeability Drift to depths in excess of 10.0m?	BGS boreholes records (80m E) confirm the presence of both granular and cohesive material within the drift deposits.	MODERATE
Is the site located within 50m of a surface watercourse?	The nearest surface watercourse, The River Mersey, is located circa. 210m North East of the site. Therefore the risk to surface water is negligible given the absence of a viable receptor within influencing distance of the site.	LOW
Sensitive land uses within close proximity (e.g. residential, school, nursery, local nature reserves etc.)	The building currently on the subject site is adjoined to off-site properties which are to remain in-situ for commercial and residential use. Other residential properties are situated within close proximity of the site.	MODERATE
Overall Site Environmental Sensitivity		MODERATE

4.10 Preliminary Geotechnical Assessment

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the developed nature of the site, it is likely there will be significant Made Ground fill deposits and obstructions, especially beneath the existing buildings which contain basements. Existing buildings will require demolition with all relic foundations grubbing out, prior to the construction of the proposed development;
-  Following the removal of Made Ground deposits, the material will need to be appropriately reengineered to create a suitable development platform which will be subject to geotechnical testing; and,
-  Due to the anticipated presence of significant depths of Made Ground and the height of the proposed development, it is considered that an engineered foundation solution will be required for the proposed development.

4.1 Unexploded Ordnance

The regional unexploded bomb risk map from Zetica indicates that the site is in an area at moderate risk from possible Unexploded Ordnance (UXO) resulting from the Second World War. (Zetica, 2014).

5. CONSULTATIONS

5.1 Contaminated Land Officer

E3P contacted the Environmental Health Department at Manchester City Council who have been unable to respond within the reporting timescales. Upon receipt of the search information, E3P will issue any pertinent information and / or use the information to inform the development of any intrusive investigation proposals.

5.2 Landfill Sites and Waste Treatment Sites

There are no landfill or waste treatment sites within 500m of the subject site. The nearest historical landfill site is located 572m north of the site names Former Northenden Sewage Works, and was recorded as receiving Deposited Waste included Inert, Industrial, Commercial and Household Waste, and Liquid Sludge. It was operational between 1950 and 1965.

The Envirocheck report indicates potentially infilled land (water) of unknown filled ground (pond, marsh, river, stream, dock etc) located 195m north east of the site from 1955 mapping.

5.3 Regulatory Database

The information summarised in Table 5.1 overleaf has been obtained from a commercially available environmental database. The summary table only includes records from within 250m of the subject site and not otherwise detailed in the report.

Table 5.1 Summary of Environmental Data

RECORD	ENTRIES WITHIN 250m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified (N/A).
Authorised industrial processes (IPC/IPPC/LAPPC).	3	One entry from 1999 for a petrol filling station 179m north of the site related to Local Authority Air Pollution Control. The other two entries were for dry cleaners relating to Local Authority Pollution Prevention and Control in 2007 and 2008.
Fuel Stations Entries	1	Rss St Hildas fuel station (Esso) is located 179m north of the subject site and is active.
Licensed radioactive substances	0	N/A
Enforcements, prohibitions or prosecutions	0	N/A
Discharge Consents	0	N/A
Pollution Incidents	0	N/A
Consents issued under the Planning (Hazardous Substances) Act 1990	0	N/A
Control of Major Accident Hazard (COMAH) sites	0	N/A

6. INITIAL CONCEPTUAL SITE MODEL

6.1 Initial CSM

In accordance with Environment Agency, CLR 11 (2004) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P Ltd has developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 6.1.

Table 6.1 Initial Conceptual Site Model

SOURCE	PATHWAY	RECEPTOR
Human Health		
Heavy metals / PAH associated within Made Ground	Dermal Contact and Ingestion Consumption of Home-grown Produce	Construction Workers Residential End Users
Discussion: Made Ground deposits associated with existing and former structures on the site are a potential source of heavy metals and PAHs. Heavy metals and non-volatile PAHs may pose a short-term risk to construction workers who may be exposed to impacted soils during earthworks. Construction works must be undertaken using the appropriate Personal Protective Equipment (PPE) to remove this risk. Future residential end users may be exposed to impacted soils within landscaped areas, however it is understood that the current proposed development does not incorporate any landscaped areas which would mitigate the risk to future residents and commercial end users. Should a risk be identified and any landscaped areas were to be incorporated into the proposed development, it may be necessary to provide a cover system designed in accordance with BRE465 <i>Cover systems for land regeneration - thickness of cover systems for contaminated land</i>.		
Volatile hydrocarbon compounds associated within Made Ground	Volatilisation / Accumulation, Vapour Inhalation	Construction Workers, Residential End Users
Discussion: No historical industrial activities have been identified on site which would be a potential source of hydrocarbon contamination and no evidence was identified during the site walkover. However, there is a potential for historic spillages of hydrocarbon compounds to have occurred on the site, potentially associated with the scrap metal works formally located 90m east of the site. Hydrocarbon compounds may be present within any Made Ground deposits on-site. Hydrocarbon compounds may pose a risk to construction workers if they come into contact with impacted soils during further earthworks, however appropriate PPE will ensure they are at no unacceptable risk. Future residential may be at risk from potential vapours through indoor inhalation.		
Asbestos Containing Materials (ACM) within Made Ground	Fibre / Dust Inhalation	Construction Workers Residential End Users Third Party Property
Discussion: Due to the age of the current buildings on-site it is considered likely that ACM material will be present within the building fabric, as well as within the former structures in the eastern sector of the site, therefore a pre-demolition asbestos survey will be required. The associated risks to the proposed end users would be through the inhalation of asbestos fibres through the disturbance of impacted soils that may be present beneath the site after demolition; however, following the pre demolition asbestos survey the risk will be greatly reduced given that any		

SOURCE	PATHWAY	RECEPTOR
ACM's identified during the survey will be removed prior to demolition by a licensed operative in a compliant manner. In the event that impacted Made Ground is identified on site, these soils should be managed in accordance with guidance stated in CIRIA 733 and placed within an area of low sensitivity or removed from site.		
Hazardous Ground Gases		
Methane and Carbon Dioxide associated with possible on-site fill material	Inhalation Accumulation	Construction Workers Residential End Users
Discussion: Potential Made Ground underlying the site which can contain varying amounts of organic material such as timber which may result in the generation of hazardous ground gases such as carbon dioxide and methane. Ground gases pose an asphyxiation or explosive risk to construction workers and site end users where they can accumulate within confined spaces such as service entries and/or foundations. Should a ground gas risk be identified to end users, the risks can be mitigated through the adoption of suitable control measures within the building construction using guidance presented within CIRIA 665 (Assessing Risk Posed by Hazardous Ground Gases to Buildings) and BS8485 (Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments).		
Controlled Waters		
Hydrocarbon compounds associated within Made Ground	Vertical Migration	Secondary A Aquifer
Discussion: Any soluble phase contaminants identified on the site could pose a potential risk to controlled waters. The underlying Secondary A Aquifer within the drift deposits could provide a pathway for any contaminants; however given the lack of a viable receptor within influencing distance of the site a complete pollutant linkage has not been identified, therefore a low risk to controlled waters is considered. However, a detailed controlled waters risk assessment will be required to satisfy the Environment Agency		
Buildings and Infrastructure		
pH & Sulphate	Corrosion of Concrete	Foundations / Concrete
Discussion Presence of pH and sulphate within potential Made Ground deposits may result in corrosion of buried concrete within the proposed development. Assessment must be undertaken to confirm the levels of pH and sulphate within the underlying strata and in particular any Made Ground deposits so that a concrete classification can be determined.		
Ecology		
None Identified	N/A	N/A
Discussion No significant ecological receptors are identified.		

7. CONCLUSIONS AND RECOMMENDATIONS

Site Summary

The site remained undeveloped until pre 1910 when terraced housing was built in the western sector of the site, with an access road to the north of the building and structures / garden plots located in the eastern sector of the site. The site has remained relatively unchanged with the exception of two small structures being present in the eastern sector before this sector of the site was utilised for car parking.

The site currently comprises a vacant former restaurant which occupies the majority of the buildings on-site, along with a tea shop/salon (occupied) and residential apartment above (vacant) in the northern terrace.

These uses are considered to have the potential to be sources of heavy metal, polycyclic aromatic hydrocarbon (PAH), petroleum hydrocarbon, asbestos and ground gas impact to the sub-surface.

Contamination Issues

Human Health	Made Ground deposits associated with the existing and former structures on the site are a potential source of heavy metals and PAHs. No historical industrial activities have been identified on site which would be a potential source of hydrocarbon contamination and no evidence was identified during the site walkover. However there is a potential for historic spillages of hydrocarbon compounds to have occurred on the site, potentially associated with the scrap metal works formally located 90m east of the site. Asbestos containing materials may be present within the building fabric of the current building on site and associated with the former structures in the eastern sector of the site. Due to the age of the building it is considered likely that ACM material will be present, therefore a pre-demolition asbestos survey will be required.
Controlled Waters	Any soluble phase contaminants identified on the site could pose a potential risk to controlled waters. The underlying Secondary A Aquifer within the drift deposits could provide a pathway for any contaminants; however given the lack of a viable receptor within influencing distance of the site a complete pollutant linkage has not been identified, therefore a low risk to controlled waters is considered. However, a detailed controlled waters risk assessment will be required to satisfy the Environment Agency.
Ground Gas	The nature of the Made Ground is currently unknown; however any organic materials present could be a potential source of methane and carbon dioxide. Carbon dioxide and methane have associated asphyxiation and explosive risks respectively and if present the risks can be appropriately mitigated through the careful design of building structures.
Potable Waters	Based on existing information, it is considered the site will be suitable for PE water supply pipework.

Geotechnical Issues

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the developed nature of the site, it is likely there will be significant Made Ground fill deposits and obstructions, especially beneath the existing buildings which contain basements. Existing buildings will require demolition with all relic foundations grubbing out, prior to the construction of the proposed development;
-  Following the removal of Made Ground deposits, the material will need to be appropriately reengineered to create a suitable development platform which will be subject to geotechnical testing; and,
-  Due to the anticipated presence of significant depths of Made Ground and the height of the proposed development, it is considered that an engineered foundation solution will be required for the proposed development.

END OF REPORT

APPENDIX I LIMITATIONS



1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.
10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.



APPENDIX II GLOSSARY



TERMS

AST	Above Ground Storage Tank	SGV	Soil Guideline Value
BGS	British Geological Survey	SPH	Separate Phase Hydrocarbon
BSI	British Standards Institute	TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group)
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes	SPT	Standard Penetration Test
CIEH	Chartered Institute of Environmental Health	SVOC	Semi Volatile Organic Compound
CIRIA	Construction Industry Research Association	UST	Underground Storage Tank
CLEA	Contaminated Land Exposure Assessment	VCCs	Vibro Concrete Columns
CSM	Conceptual Site Model	VOC	Volatile Organic Compound
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)	WTE	Water Table Elevation
DWS	Drinking Water Standard	m	Metres
EA	Environment Agency	km	Kilometres
EQS	Environmental Quality Standard	%	Percent
GAC	General Assessment Criteria	%v/v	Percent volume in air
GL	Ground Level	mb	Milli Bars (atmospheric pressure)
GSV	Gas Screening Value	l/hr	Litres per hour
HCV	Health Criteria Value	µg/l	Micrograms per Litre (parts per billion)
ICSM	Initial Conceptual Site Model	ppb	Parts Per Billion
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)	mg/kg	Milligrams per kilogram (parts per million)
ND	Not Detected	ppm	Parts Per Million
LMRL	Lower Method Reporting Limit	mg/m³	Milligram per metre cubed
NR	Not Recorded	m bgl	Metres Below Ground Level
PAH	Polycyclic Aromatic Hydrocarbon	m bcl	Metre Below Cover Level
PCB	Poly-Chlorinated Biphenyl	mAOD	Metres Above Ordnance Datum (sea level)
PID	Photo Ionisation Detector	kN/m²	Kilo Newtons per metre squared
QA	Quality Assurance	µm	Micro metre
SGV	Soil Guideline Value		

APPENDIX III DRAWINGS





SITE



**Drawing 13-092-001
Site Location Plan**





Key:

Notes:

P1	-	17.12.2018	DRAFT	HM	RH
Phase	Revision	Date	Issue	Drawn	Authorised
Calderpeel			Job No:	13-092	Date: 17.12.2018
			Drawing No:	002	Scale: NTS
Job Title: Palentine Road, Northenden			Drawing Title: Proposed Development Plan		



Environmental Engineering Partnerships Ltd
City Helport & Business Centre
Eccles, Manchester, M30 7RU
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk

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Key:

Site Features

- Teashop/Salon (Occupied) With Residential Apartment Above (Unoccupied)
- Former Restaurant (Unoccupied)
- Potential Japanese Knotweed
- Staircase
- Brick Wall
- Ivy
- Treeline
- Wooden Structure Sheltered Seating
- Car Parking
- Basement
- Manhole
- Bin Storage
- Asphalt

Notes:

P1	R1	14.12.2018	REVISION	HM	RH
P1	-	11.12.2018	DRAFT	HM	RH
Phase	Revision	Date	Issue	Drawn	Authorised

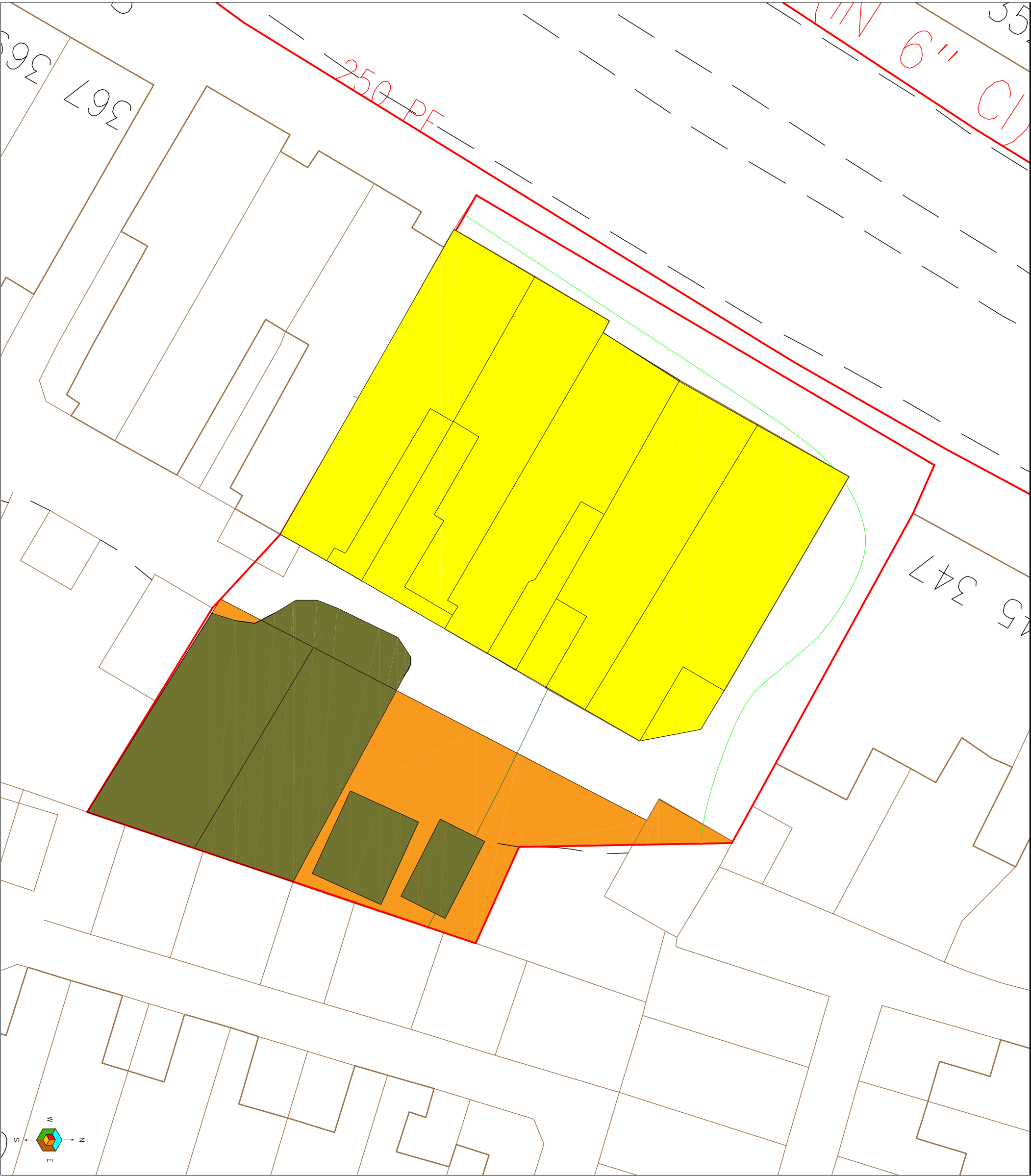
Client:	Job No:	Date:
Calderpeel	13-092	14.12.2018
Drawing No:	Scale:	
003	NTS	

Job Title:	Drawing Title:
Palentine Road, Northenden	Site Features Plan



Environmental Engineering Partnerships Ltd
City Helport & Business Centre
Eccles, Manchester, M30 7RU
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk





Key:

Historic Features

- Former Field Boundary (Pre 1872 - Pre 1898)
- Former Field Boundary (Pre 1872 - Pre 1910)
- Residential And Commercial Properties (Pre 1910 - Present)
- Handstanding (Pre 1910 - Pre 1959)
- Handstanding (Pre 1959 - Present)

Notes:

P1	-	17.12.2018	DRAFT	HM	RH
Phase	Revision	Date	Issue	Drawn	Authorised
Client:	Calderpeel	Job No:	13-092	Date:	17.12.2018
		Drawing No:	003	Scale:	NTS

Job Title:	Palentine Road, Northenden	Drawing Title:	Historic Features Plan
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APPENDIX IV PHOTOGRAPHS





**PLATE 1 – FRONT OF THE TERRACED BUILDING FROM PALATINE ROAD
LOOKING SOUTH-WEST**



PLATE 2 – ACCESS FROM PALATINE ROAD TO THE NORTH OF THE BUILDING



PLATE 3 – ACCESS ROAD FROM PALATINE ROAD TO THE EASTERN SECTOR OF THE SITE



PLATE 4 – CAR PARK IN THE EASTERN SECTOR OF THE SITE LOOKING SOUTH





PLATE 5 – CAR PARK IN THE EASTERN SECTOR OF THE SITE LOOKING NORTH



PLATE 6 – REAR OF THE TERRACED BUILDING LOOKING WEST

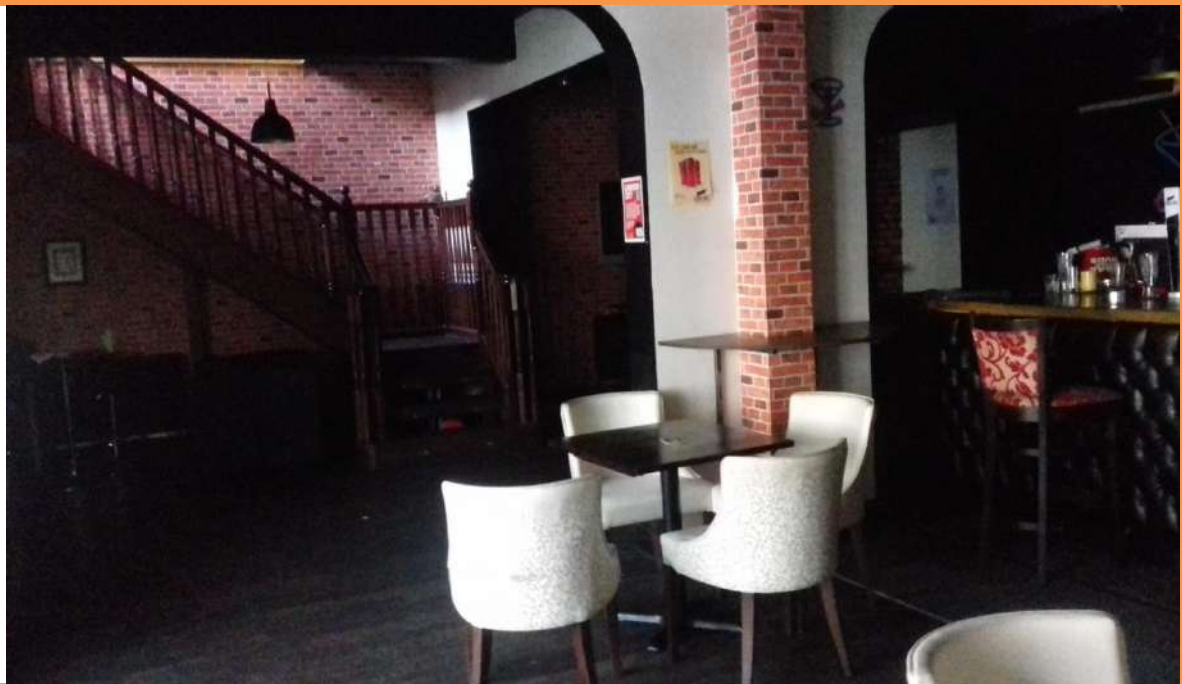


PLATE 7 – INTERIOR OF VACANT RESTAURANT (GROUND FLOOR)



PLATE 8 – INTERIOR OF VACANT RESTAURANT (FIRST FLOOR)



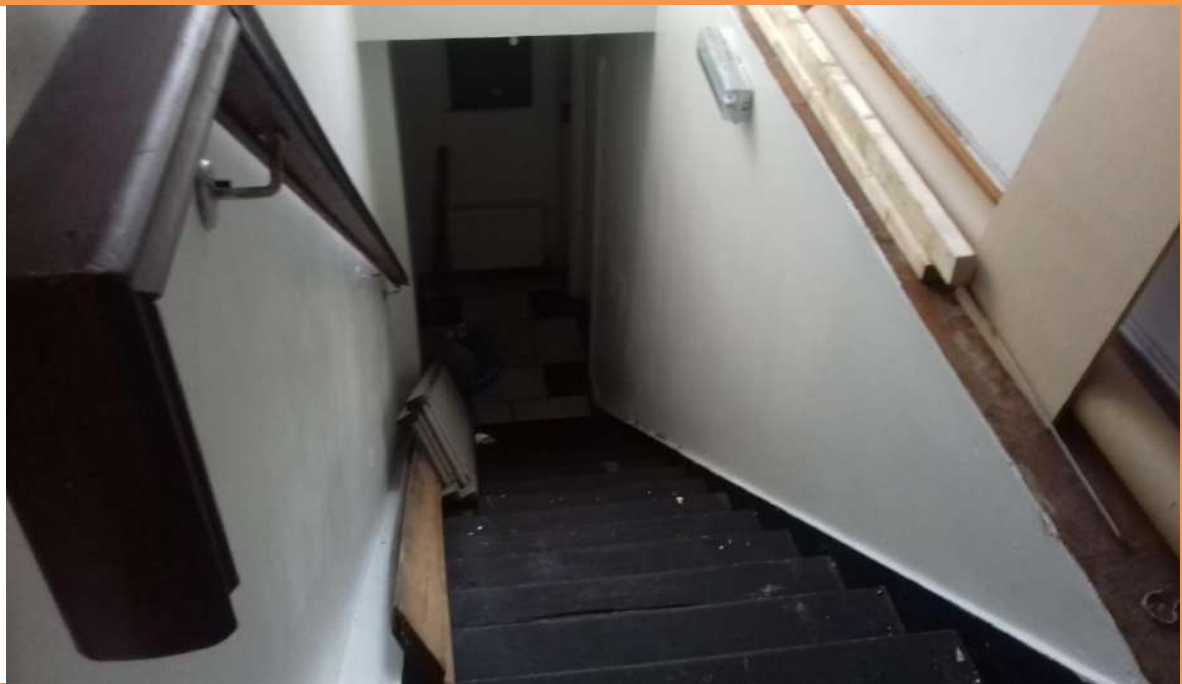


PLATE 9 – STAIRCASE FROM GROUND FLOOR TO FIRST FLOOR OF RESTAURANT



PLATE 10 – SMALL BRICK WALL ALONG EASTERN BOUNDARY





PLATE 11 – SUSPECTED KNOTWEED ALONG NORTHERN BOUNDARY



PLATE 12 – EVIDENCE OF FLY-TIPPING AT NORTH EASTERN BOUNDARY

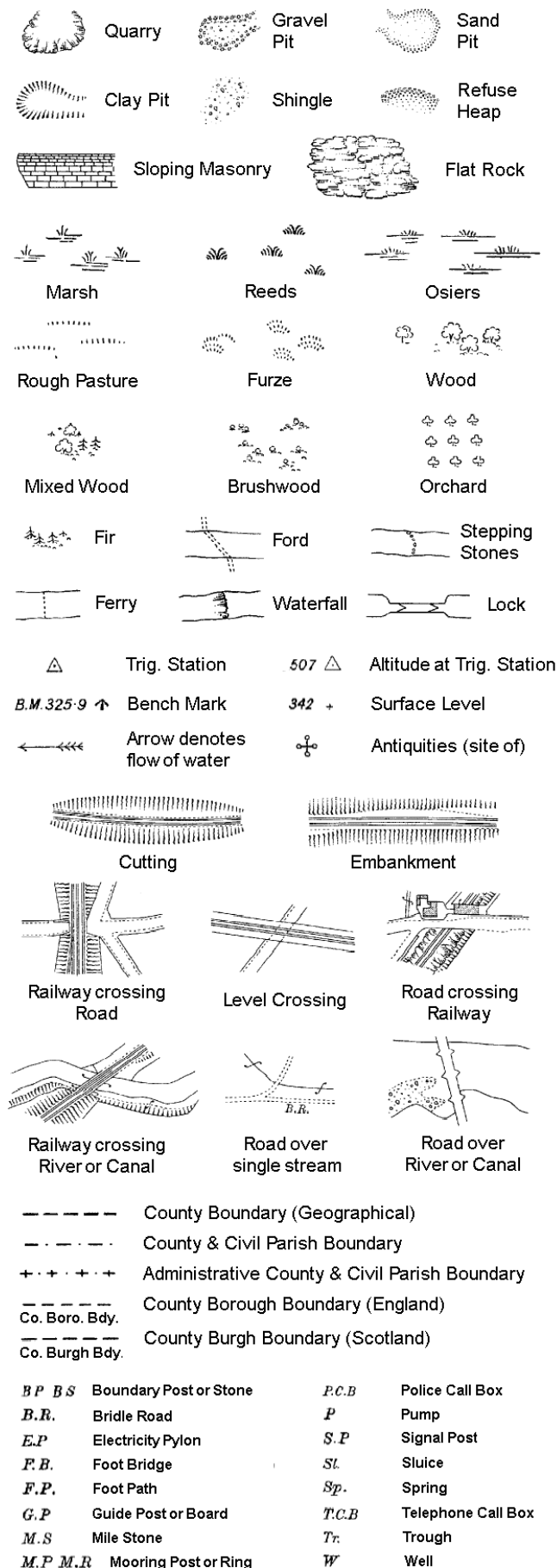


APPENDIX V HISTORICAL MAPS

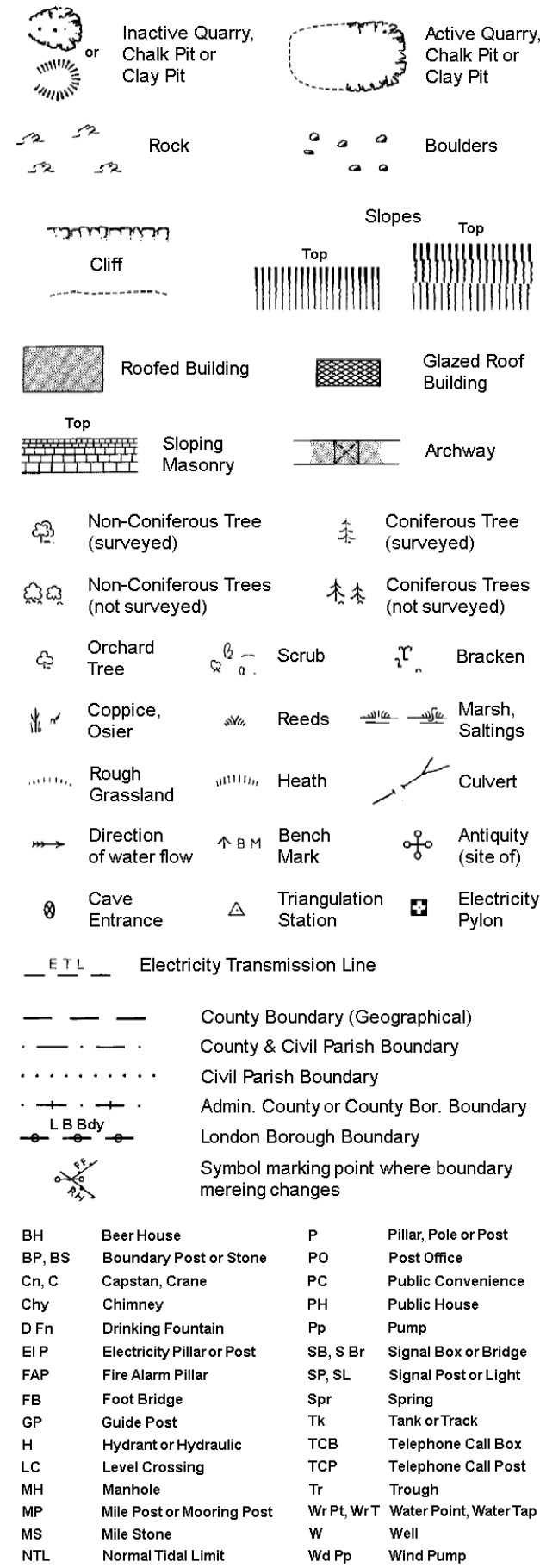


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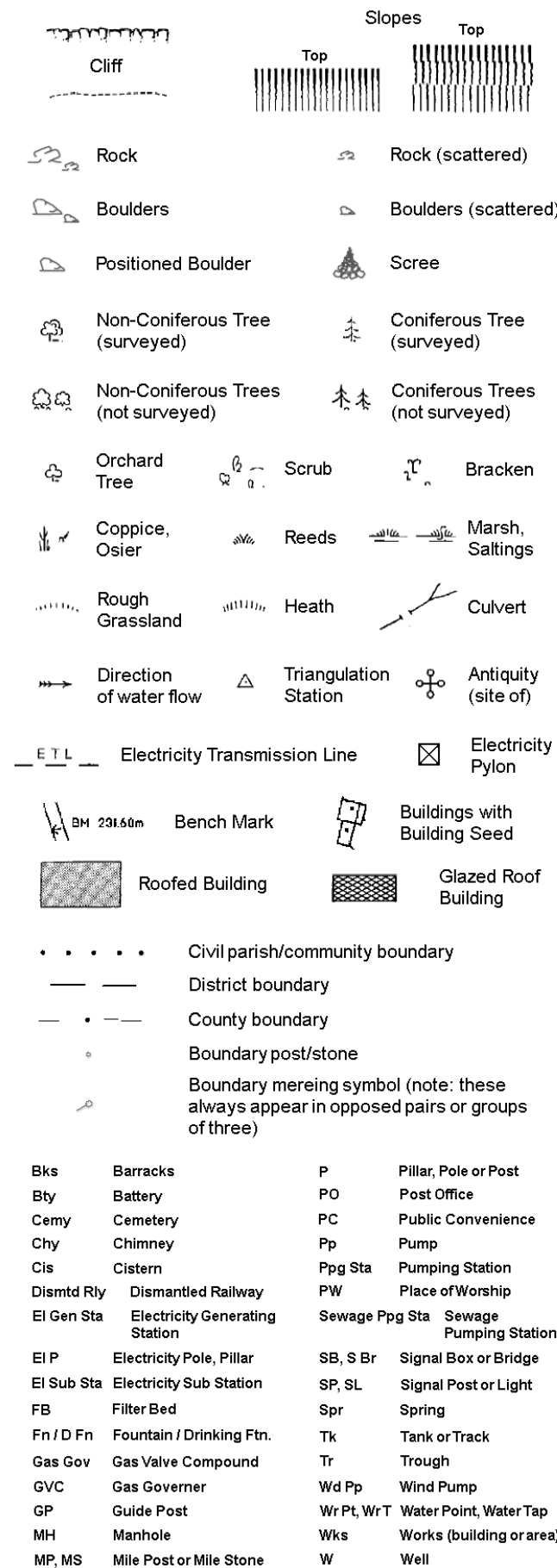
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Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



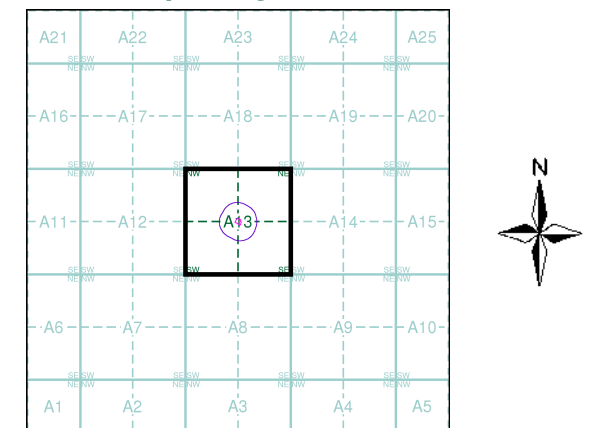
Large-Scale National Grid Data 1:2,500 and 1:1,250



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
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Lancashire And Furness	1:2,500	1893 - 1894	3
Cheshire	1:2,500	1898	4
Lancashire And Furness	1:2,500	1907	5
Cheshire	1:2,500	1910	6
Lancashire And Furness	1:2,500	1922	7
Lancashire And Furness	1:2,500	1934 - 1935	8
Ordnance Survey Plan	1:1,250	1955 - 1959	9
Ordnance Survey Plan	1:2,500	1956 - 1961	10
Ordnance Survey Plan	1:1,250	1959 - 1989	11
Ordnance Survey Plan	1:2,500	1961	12
Ordnance Survey Plan	1:1,250	1967 - 1978	13
Additional SIMs	1:1,250	1967 - 1992	14
Supply of Unpublished Survey Information	1:1,250	1975 - 1976	15
Additional SIMs	1:1,250	1984 - 1989	16
Large-Scale National Grid Data	1:1,250	1992	17
Additional SIMs	1:1,250	1992	18
Large-Scale National Grid Data	1:1,250	1996	19
Historical Aerial Photography	1:2,500	2000	20

Historical Map - Segment A13



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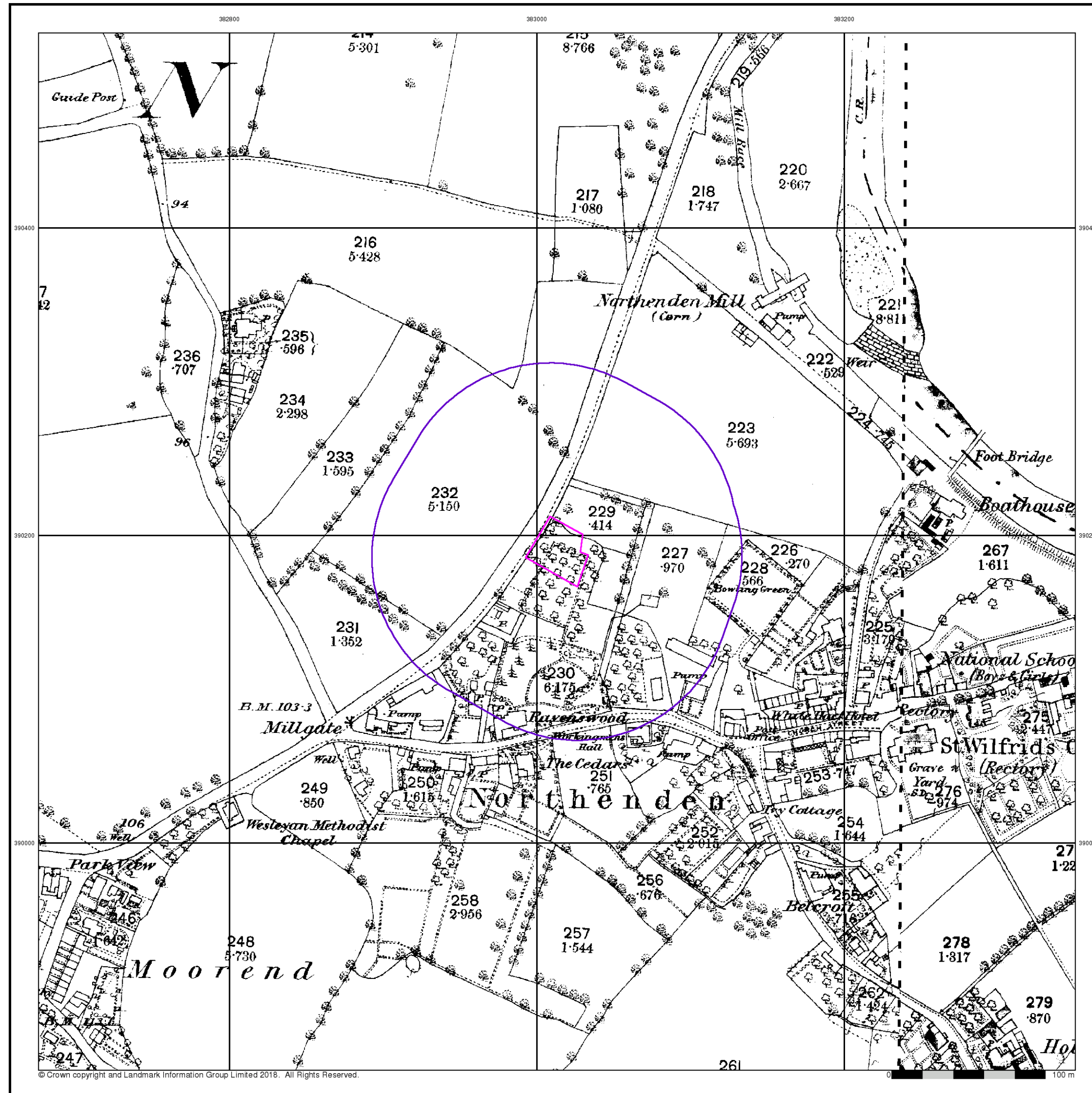
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Site Details

Palatine Road, MANCHESTER, M22 4FY



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Web: www.envirocheck.co.uk



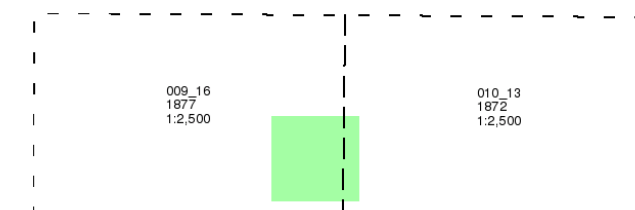
Cheshire

Published 1872 - 1877

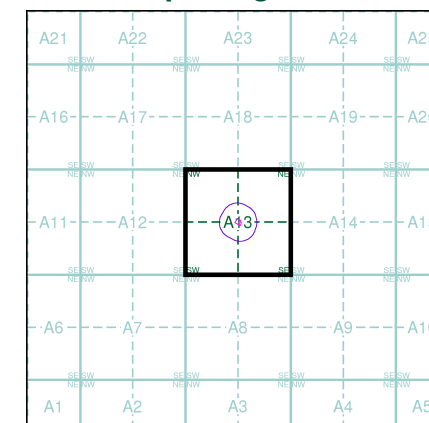
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered 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



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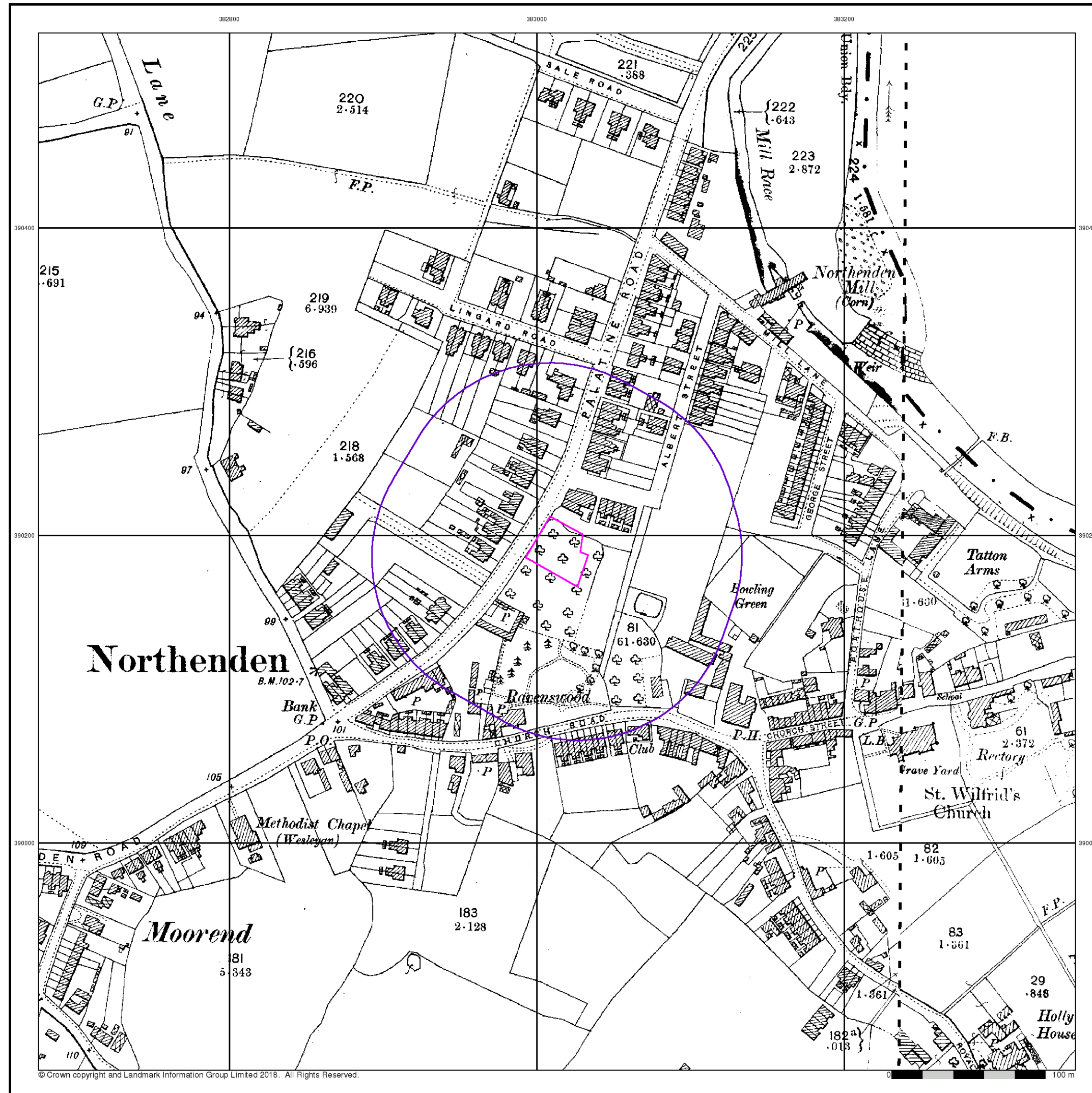
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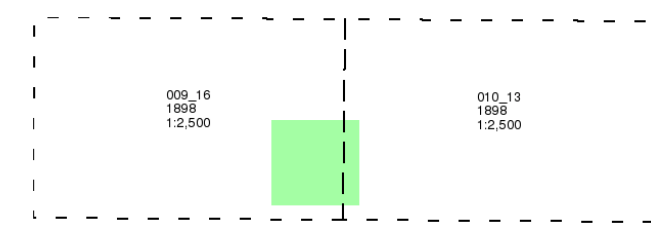
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Published 1898

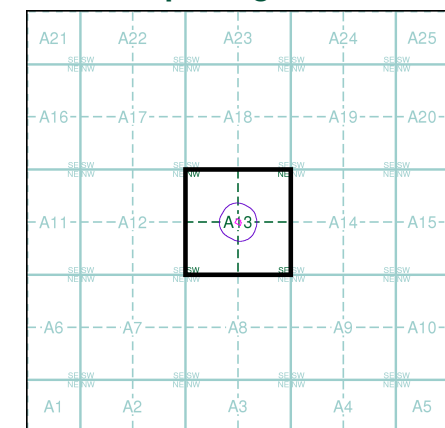
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Map Name(s) and Date(s)



Historical Map - Segment A13



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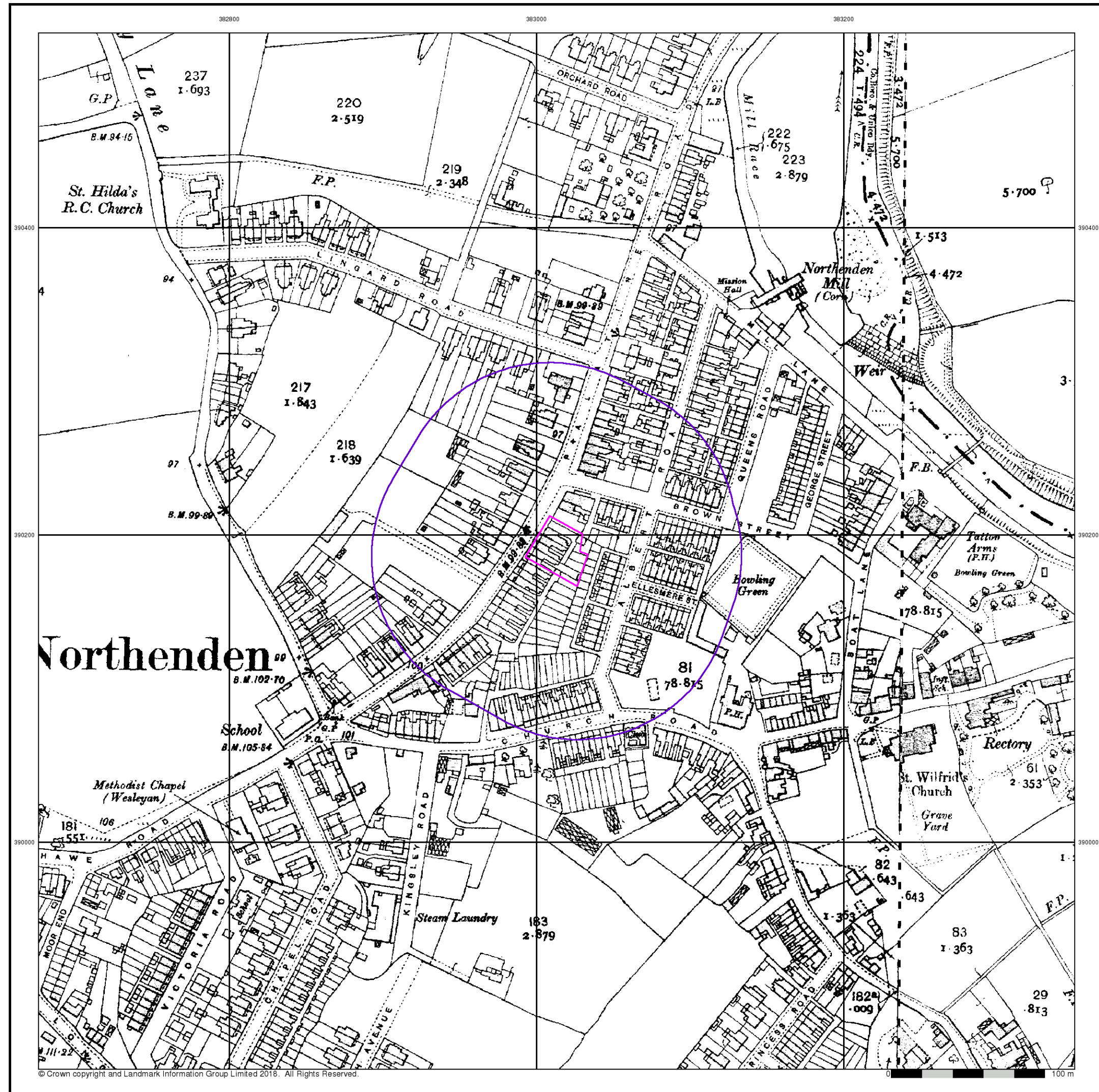
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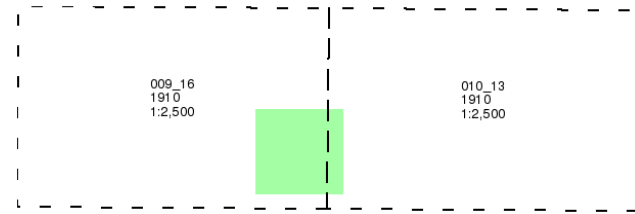
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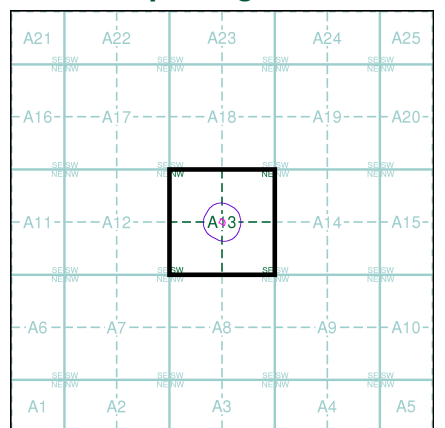
Cheshire
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Map Name(s) and Date(s)

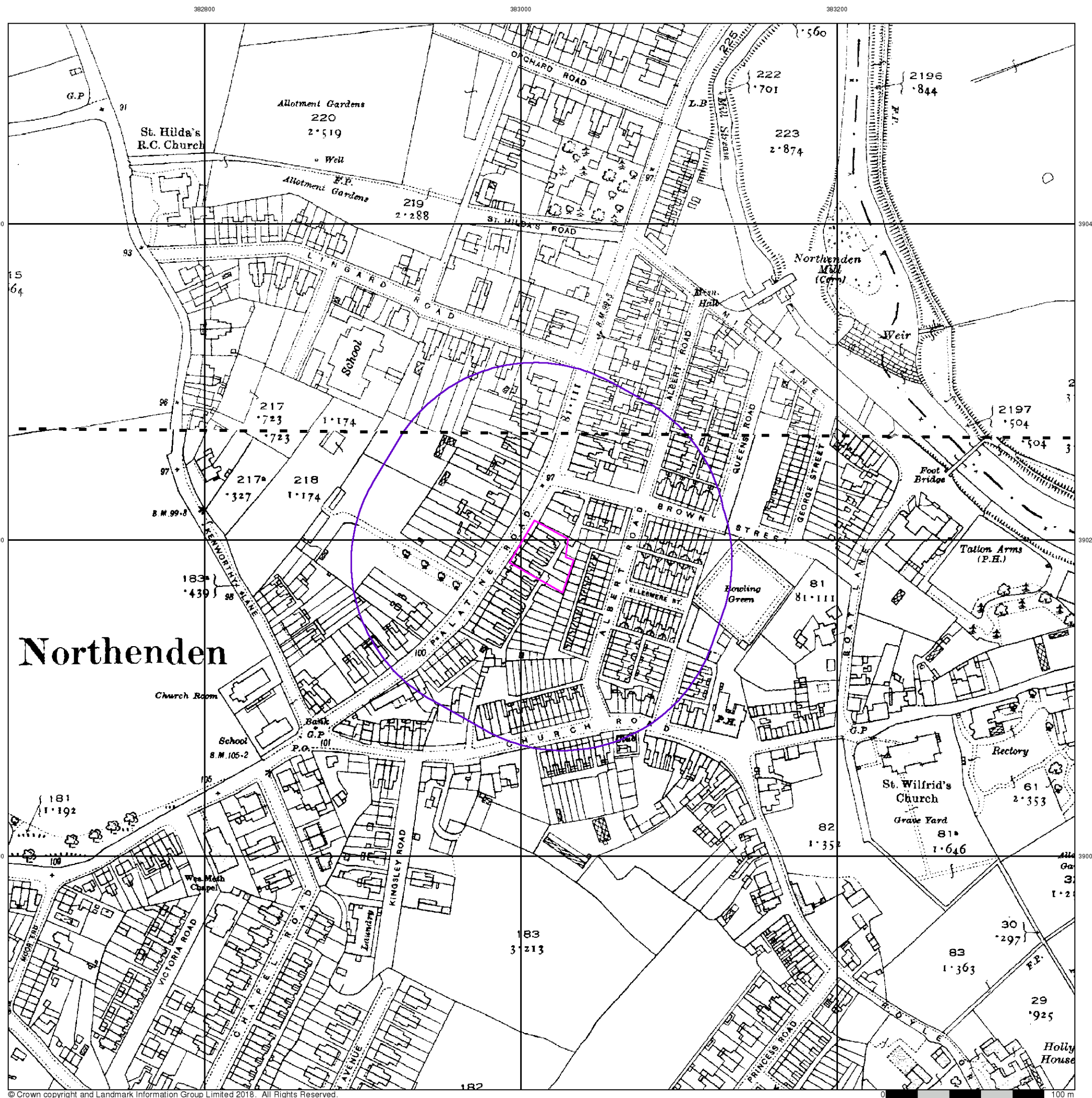


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Site Details
Palatine Road, MANCHESTER, M22 4FY



Lancashire And Furness

Published 1922

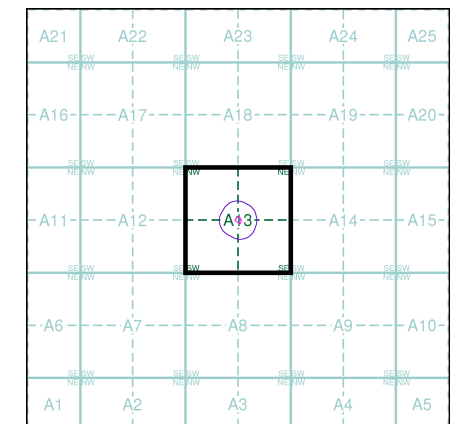
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Map Name(s) and Date(s)

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1:2,500
111_14
1922
1:2,500

Historical Map - Segment A13



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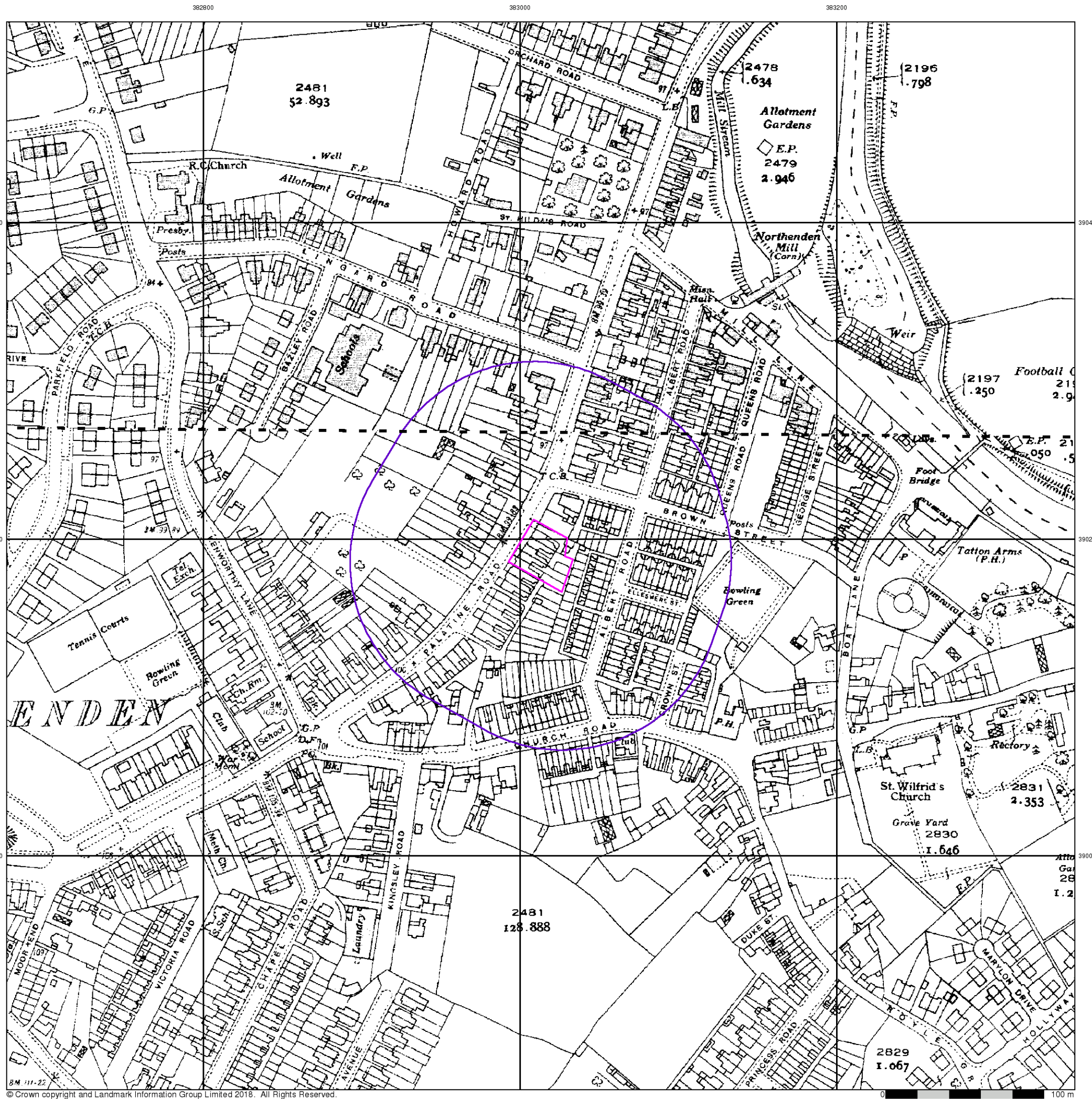
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Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

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Lancashire And Furness

Published 1934 - 1935

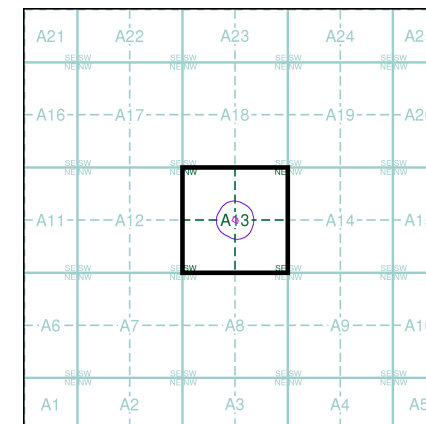
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Historical Map - Segment A13



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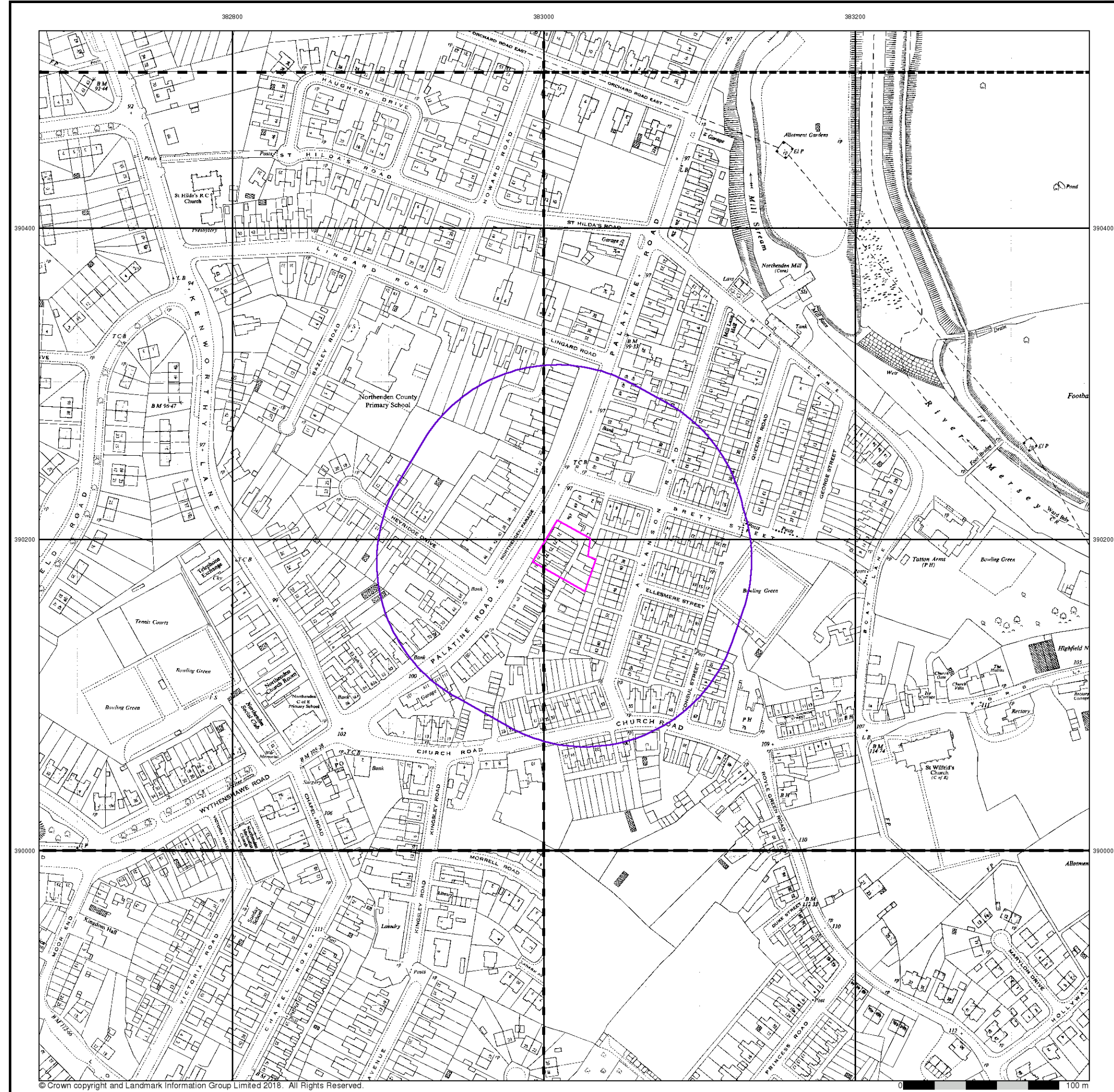
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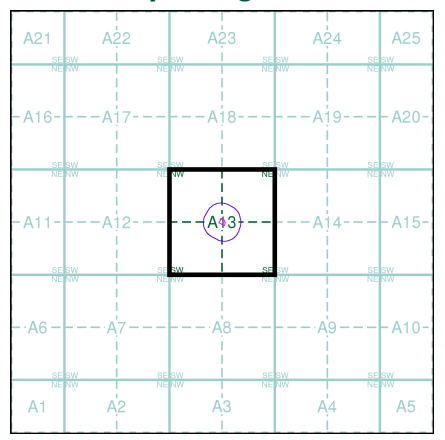
Ordnance Survey Plan
Published 1955 - 1959
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Map Name(s) and Date(s)

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SJ8290SES	SJ8390SW
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1:1,250	1:1,250
SJ8289NES	SJ8389NW
1959	1956
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

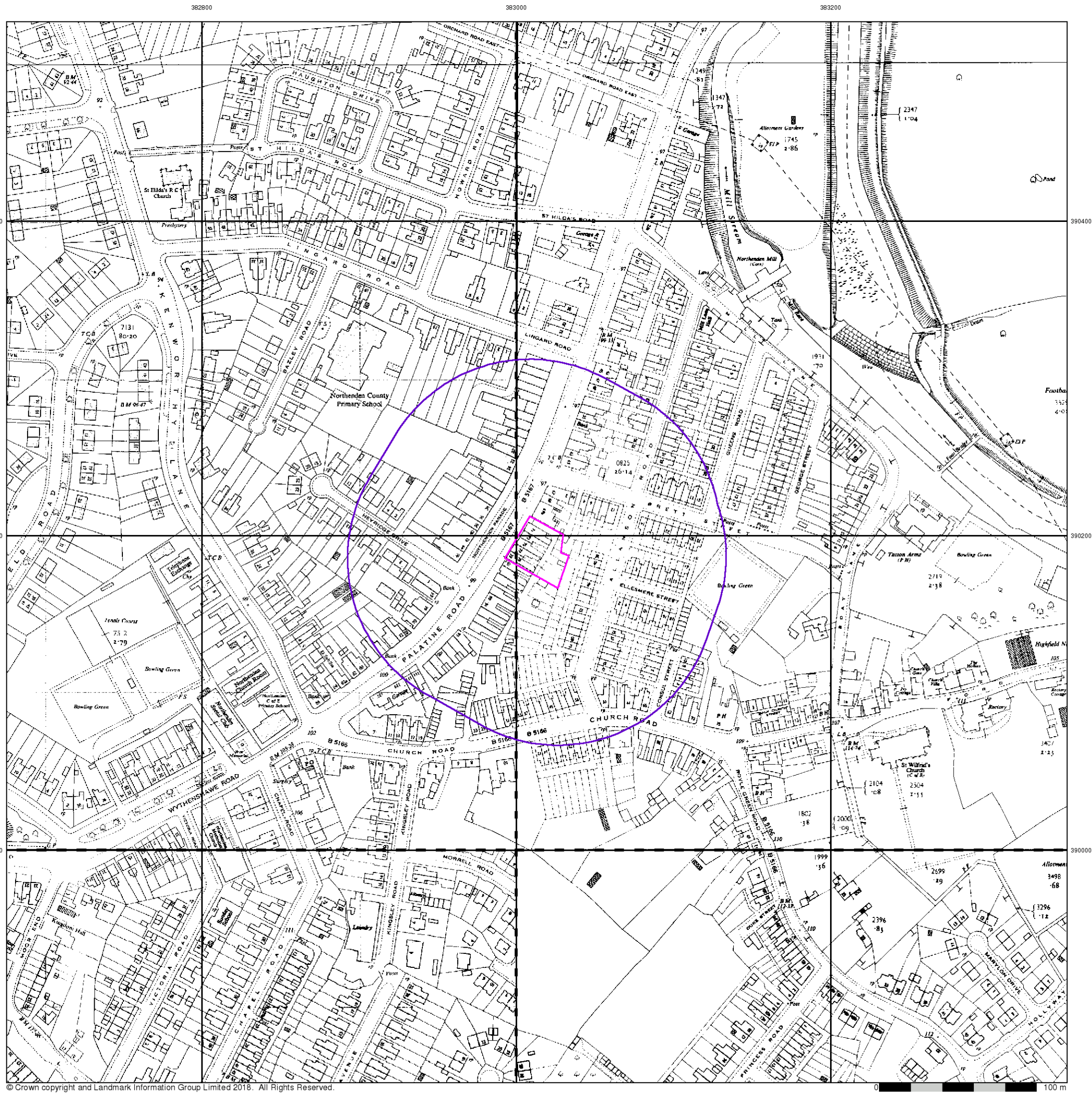
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Palatine Road, MANCHESTER, M22 4FY



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



Ordnance Survey Plan

Published 1956 - 1961

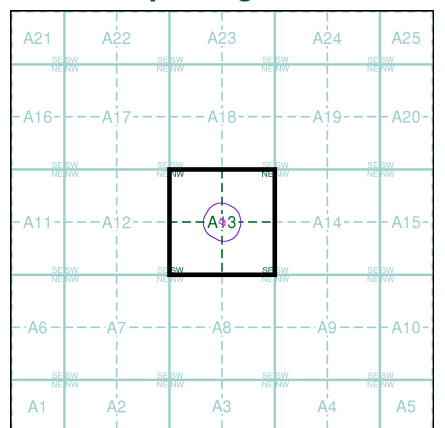
Source map scale - 1:2,500

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)

SJ8290	SJ8390
1957	1956
12,500	12,500
SJ8289	SJ8389
1961	1957
12,500	12,500

Historical Map - Segment A13



Order Details

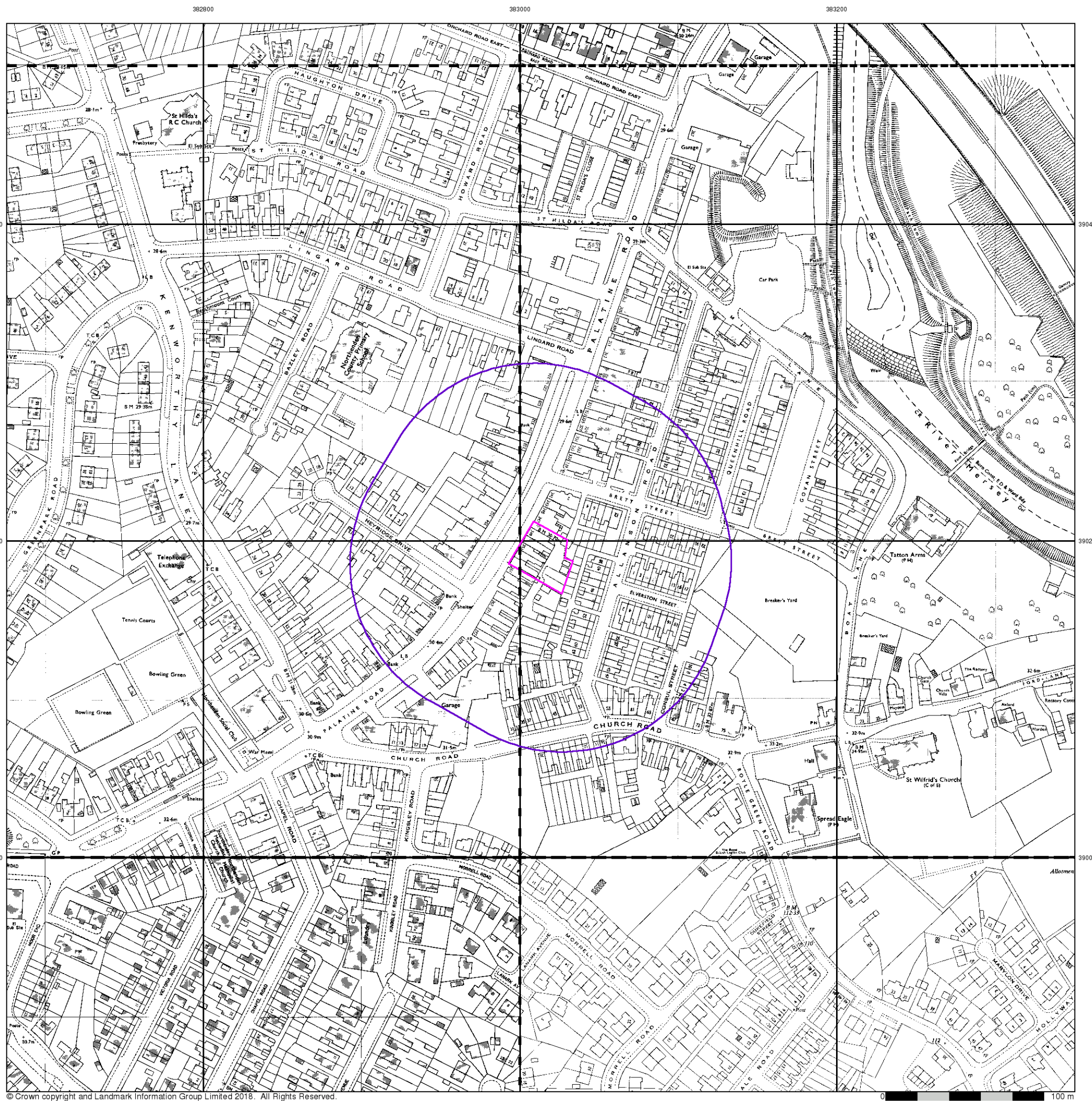
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
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Ordnance Survey Plan

Published 1959 - 1989

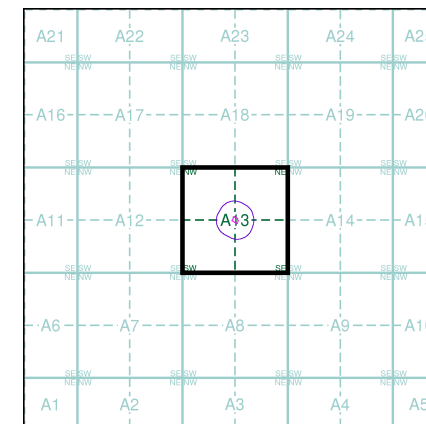
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SJ8290NES	SJ8390NW
1967	1982
1:1,250	1:1,250
SJ8290SES	SJ8390SW
1975	1980
1:1,250	1:1,250
SJ8289NES	SJ8389NW
1989	1959
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

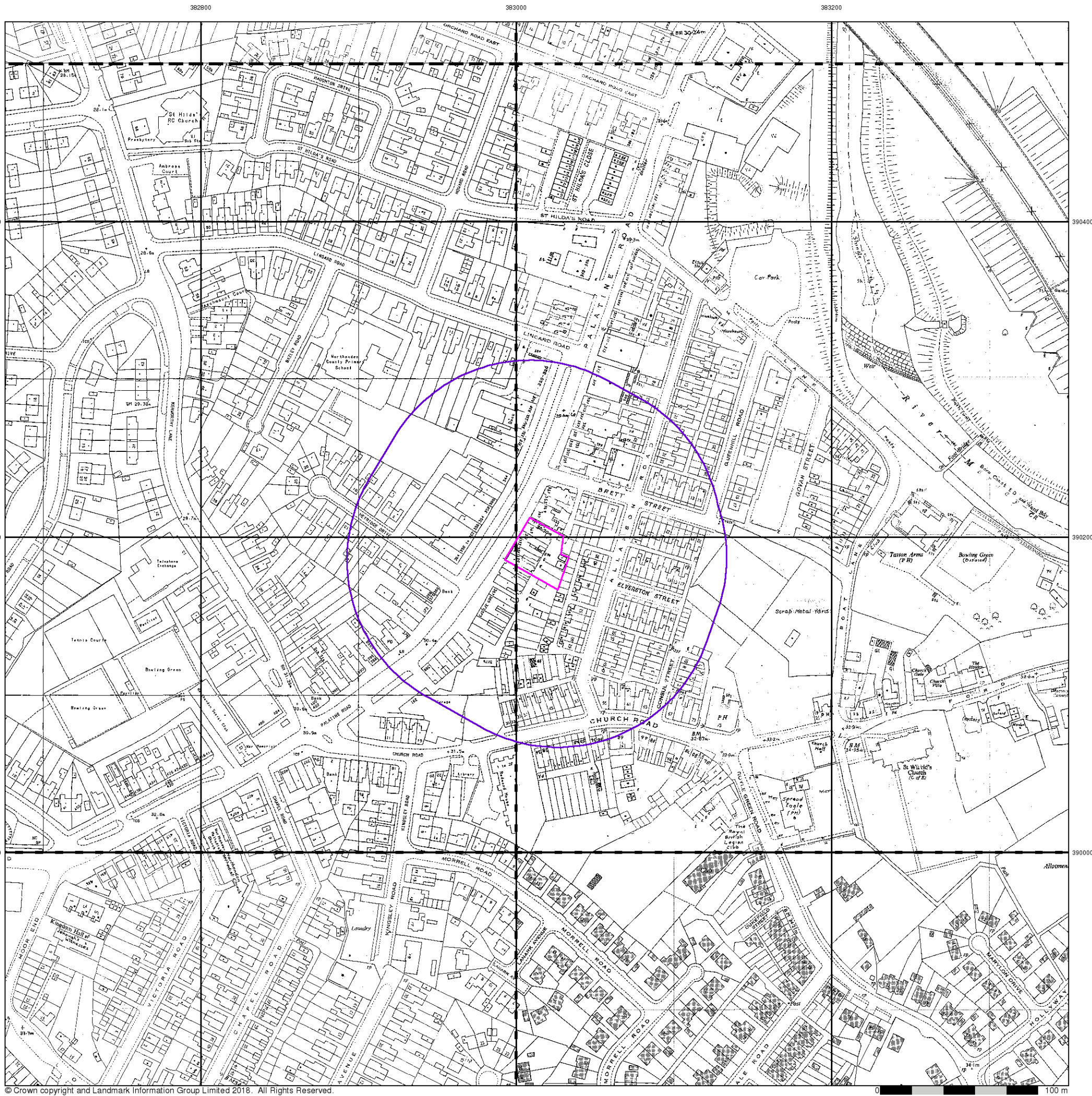
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

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Additional SIMs

Published 1967 - 1992

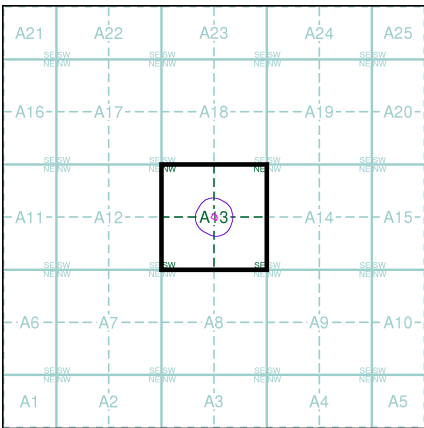
Source map scale - 1:1,250

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)

SJ8290NE	SJ8390NW
1977	1978
1:1,250	1:1,250
SJ8290SE	SJ8390SW
1992	1978
1:1,250	1:1,250
SJ8289NE	SJ8389NW
1981	1967
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

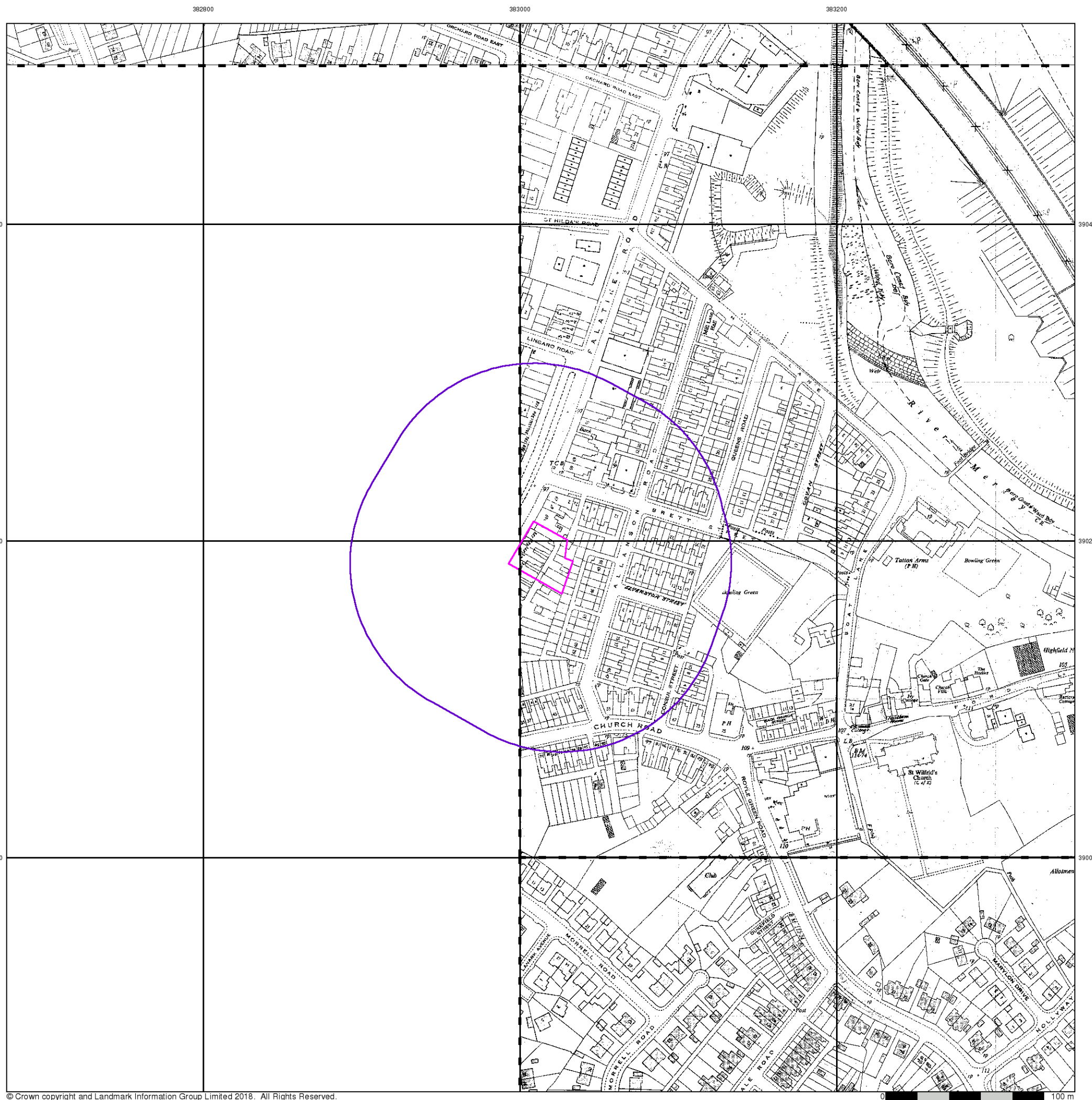
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
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Supply of Unpublished Survey Information

Published 1975 - 1976

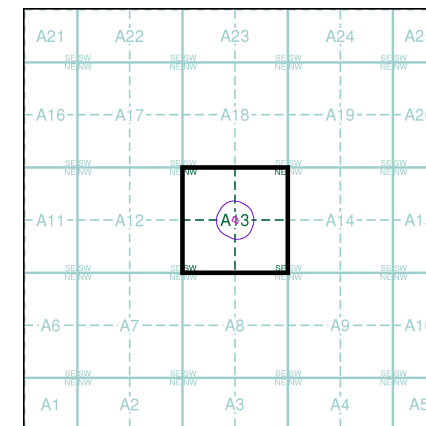
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

BJ8290NE	BJ8390NW
1975	1976
1:1,250	1:1,250
-	
BJ8390SW	
1975	
1:1,250	
BJ8389NW	
1975	
1:1,250	

Historical Map - Segment A13



Order Details

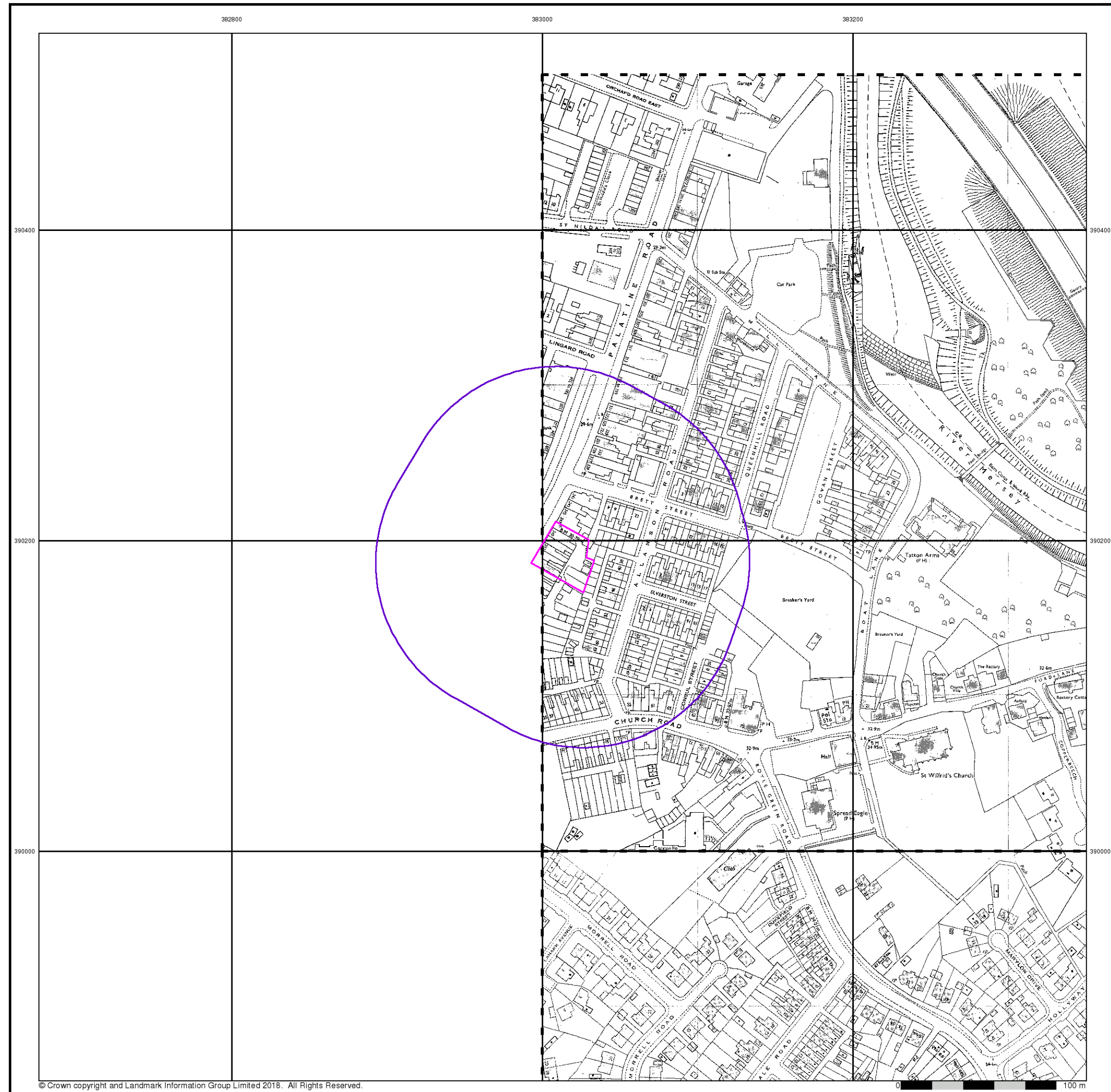
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
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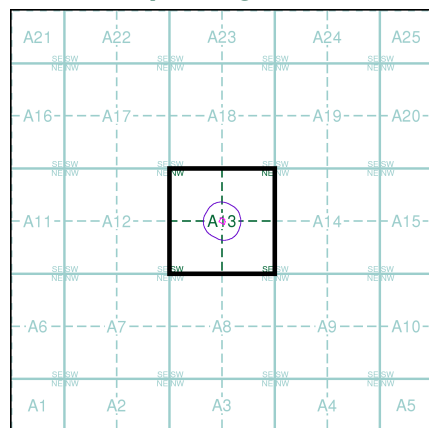
Additional SIMs
Published 1984 - 1989
Source map scale - 1:1,250

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)

SJ8390SW
1989
1:1,250
SJ8389NW
1984
1:1,250

Historical Map - Segment A13

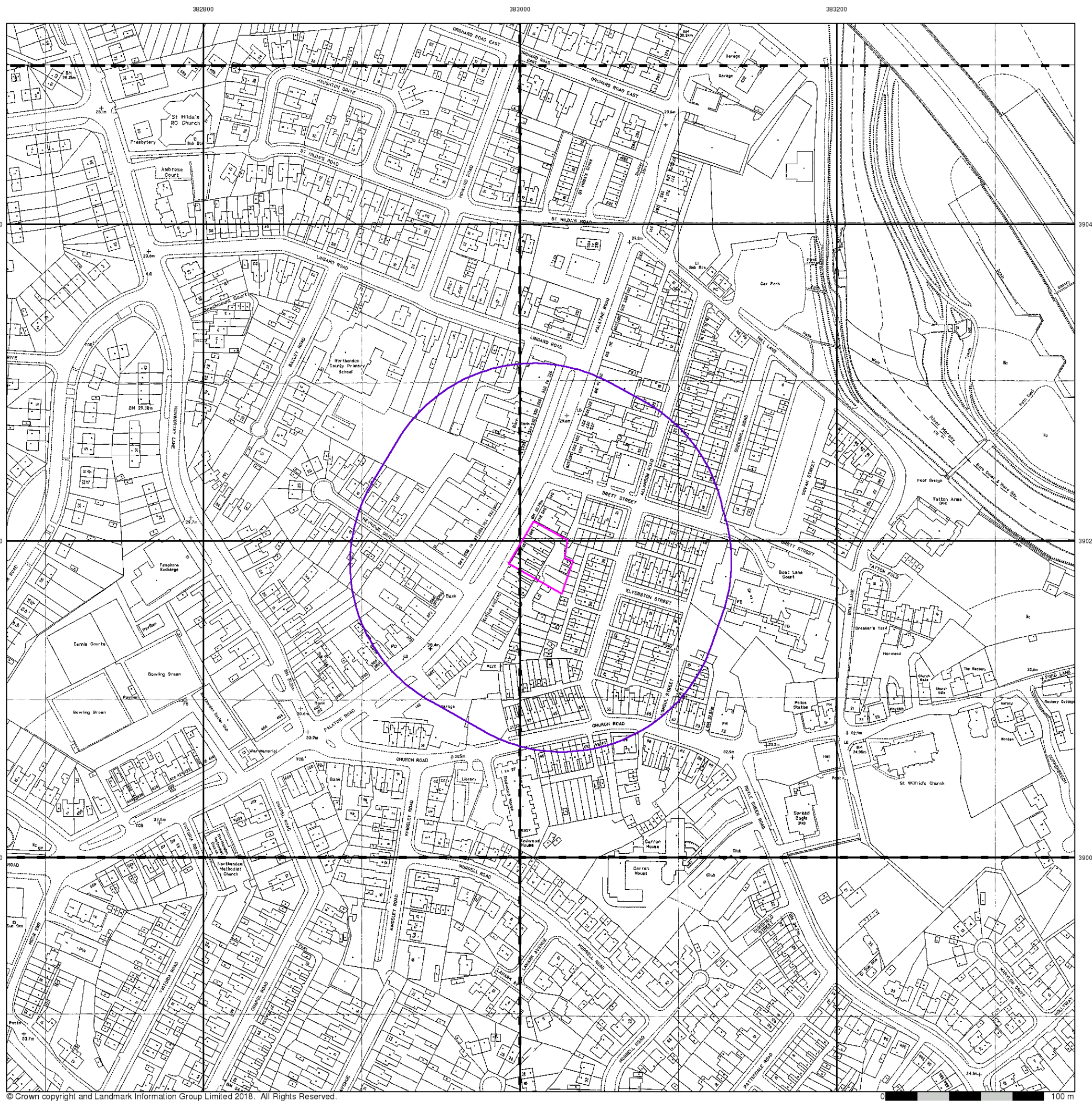


Order Details
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
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Large-Scale National Grid Data

Published 1992

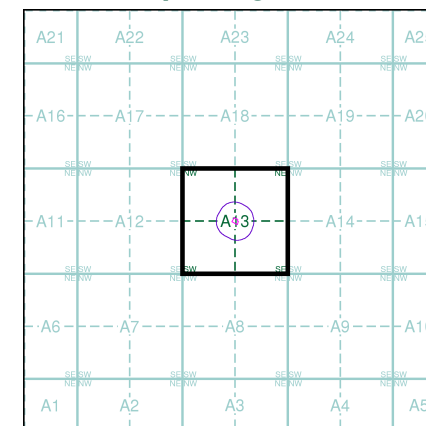
Source map scale - 1:1,250

'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)

BJ8290NE	BJ8390NW
1992	1992
1:1,250	1:1,250
BJ8290SE	BJ8390SW
1992	1992
1:1,250	1:1,250
BJ8289NE	BJ8389NW
1992	1992
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

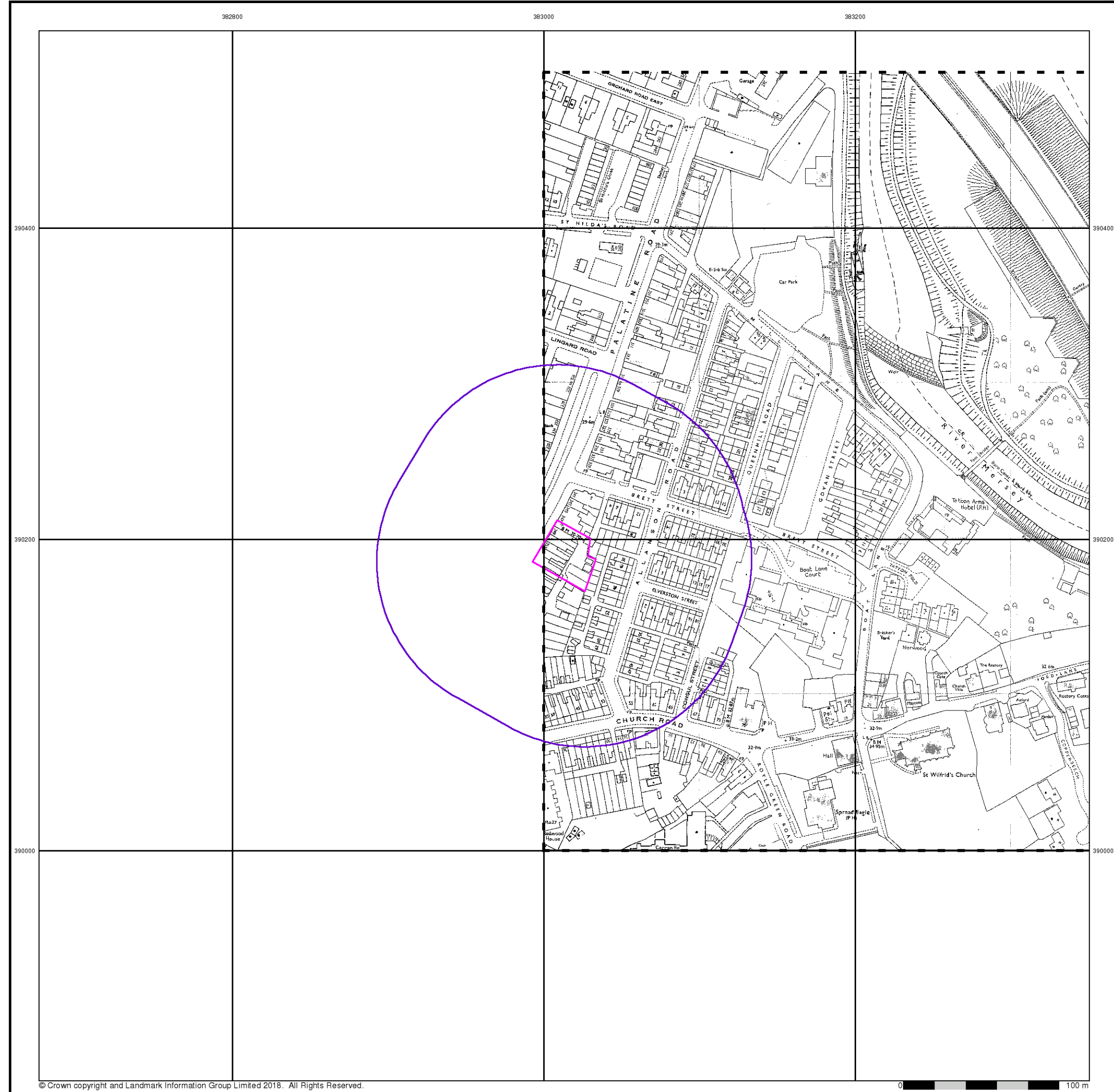
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

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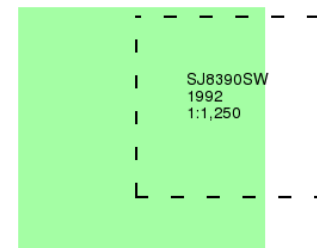
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



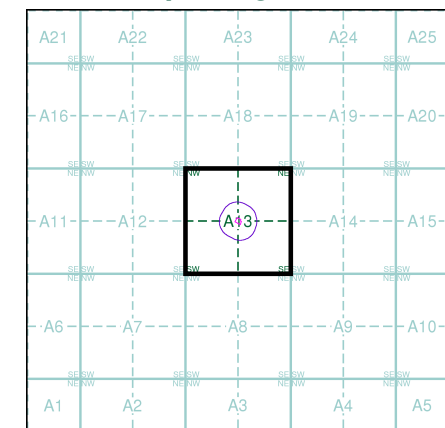
Additional SIMs
Published 1992
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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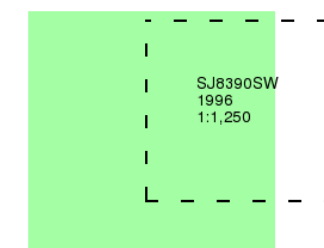
Large-Scale National Grid Data

Published 1996

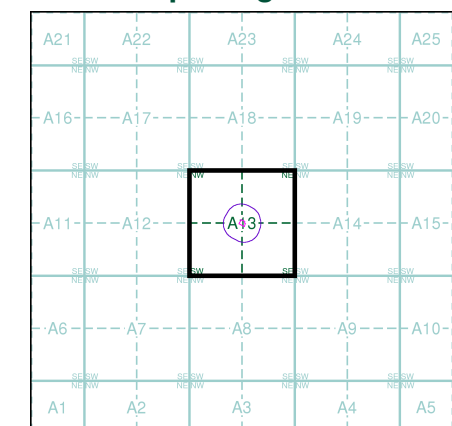
Source map scale - 1:1,250

'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)



Historical Map - Segment A13



Order Details

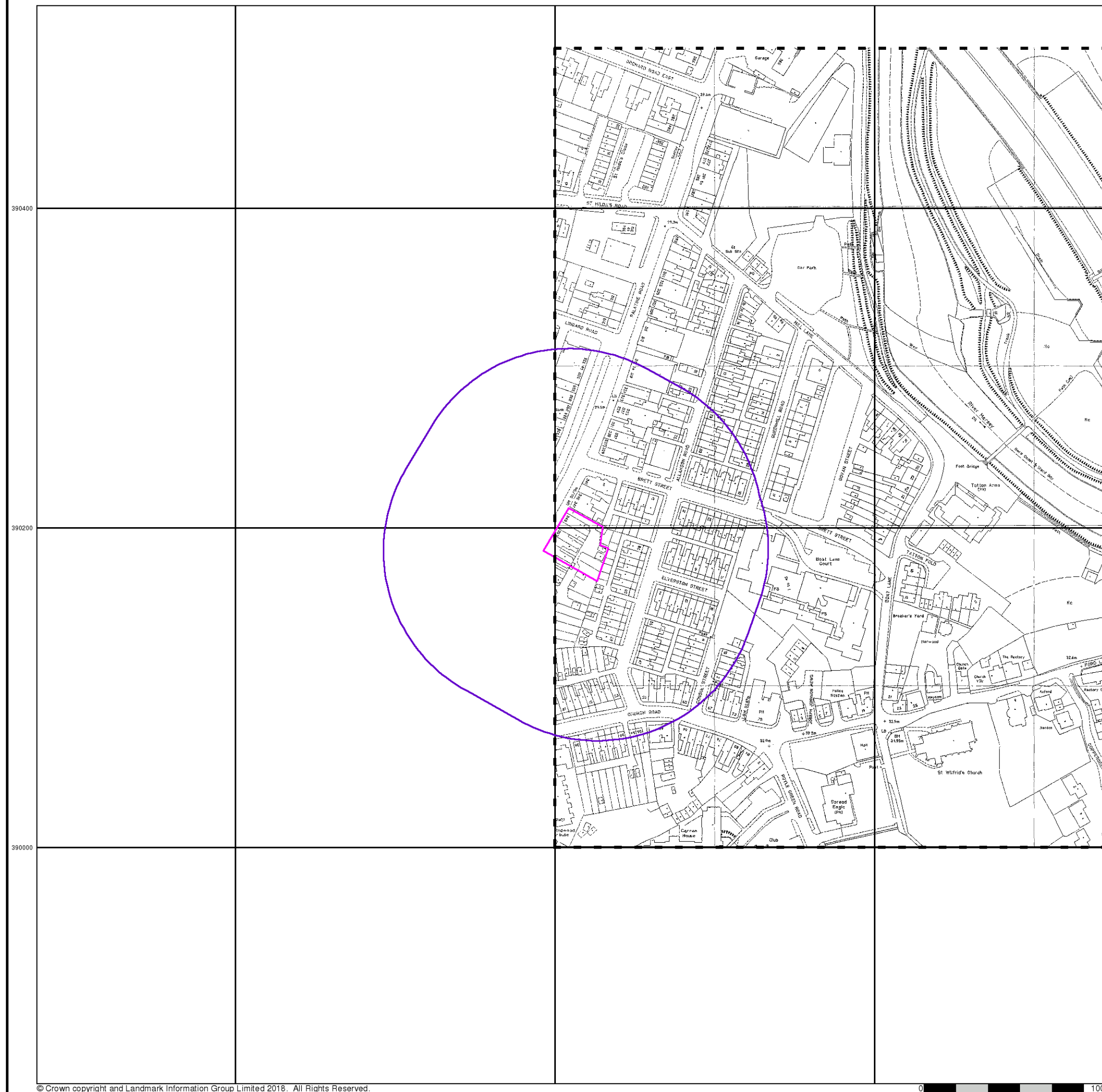
Order Number: 188686890_1_1
Customer Ref: 13092-31005-BH
National Grid Reference: 383010, 390190
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382800

383000

383200

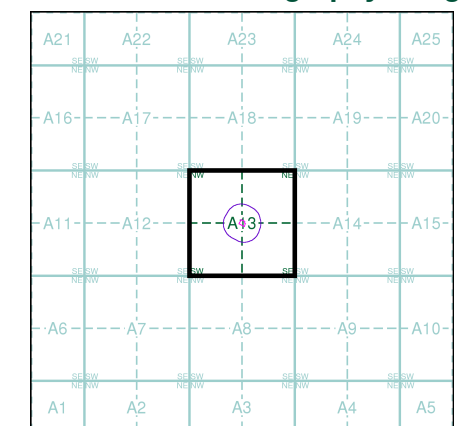


Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number: 188686890_1_1
 Customer Ref: 13092-31005-BH
 National Grid Reference: 383010, 390190
 Slice: A
 Site Area (Ha): 0.11
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