# Phase I Geoenvironmental Site Assessment
# Former Boddingtons Site

Reference: 15-175-R1-2
Date: December 2021

# PHASE I GEOENVIRONMENTAL SITE ASSESSMENT

Former Boddingtons Site
Great Ducie Street
Manchester
M3 1PT

Prepared for:
**Latimer Developments Ltd**

**Report Ref: 15-175-R1-2**
**Date Issued: December 2021**

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## QUALITY ASSURANCE

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# EXECUTIVE SUMMARY

| | | |
|---|---|---|
| **Site Address** | Former Boddingtons Site, Great Ducie Street, Manchester, M3 1PT. | |
| **Grid Reference** | E 383790, N 399260 | |
| **Site Area** | 0.59 Ha. | |
| **Proposed Development** | E3P understands that Latimer Developments Ltd are involved with a proposed scheme to redevelop the site for residential use. Assael Architects have completed a feasibility study for a car-free development comprising 461 homes and commercial spaces. The development will comprise two main blocks with differing numbers of stories, between 1 story and 26 stories. | |
| **Current Site Use** | The site is currently used as a surface car parking with access gained via Francis Street to the northwest of the site.<br><br>The site is covered in hardstand with street lighting present along the boundaries of the site (except for the northern boundary which continues as a car park).<br><br>No structures are present on-site with the exception of parking meter huts. | |
| **Site History** | The subject site comprised buildings associated with print works along with Briddon Street and Nightingale Street in earliest mapping from 1848. By 1850 the site was named Strangeways Calico Print Works with several buildings, boilers and tanks on-site; terraced housing was present in the west of the site. In 1892 the site was named Strangeways Finishing Works with Albion Works present on the north-eastern boundary. Mapping from 1933 identified several industries on the site including boot repairs, rag and cotton warehouse, plumber, dentist, hotel, waterproof clothing factory, cotton goods warehouse, mortar mill, garage, quilt and clothing factory and an oil store. Terrace housing in the west of the site was demolished and replaced with a warehouse circa 1949-1951; by this time the site was part of Strangeways Brewery. Mapping dated 1978-1989 notes that Briddon Street and Nightingale Street were no longer present with large areas of the site cleared or demolished. The site then comprised the brewery and areas of hardstanding up until some point between 2006 and 2009 where the site was demolished and was subsequently utilised as a car park, which is still its current use. | |
| **Environmental Setting** | Drift Geology | Till – Diamicton (east of site)<br>No superficial drift deposits recorded by the BGS in the west of the site. |
| | Bedrock Geology | Chester Formation - SANDSTONE |
| | Faults | The Ardwick Fault is present across the site trending approximately north-west – south-east with the downthrow side present on the north-east of the fault. |
| | Hydrogeology | Secondary undifferentiated superficial aquifer in the east overlying a principal bedrock aquifer. The west of the site has been noted as a secondary A aquifer however drift deposits have not been recorded. |

| | | |
|---|---|---|
| **Environmental Setting *Cont.*** | Hydrogeology Cont. | Twenty-one groundwater abstraction licences are present within 500 m of the site. The closest is associated with the former brewery which is no longer present however E3P are not aware if any decommission of the abstraction points have been completed. |
| | Hydrology | No surface water features are present on site. The nearest surface water feature is the River Irwell located 156 m south-west. Based on the local topography and location of nearby surface water features, it is likely that any shallow groundwater if present will flow in a westerly direction towards the River Irwell. |
| | Flood Risk | The site is located in a Flood Zone 2. |
| **Utility Locations** | A formal drainage survey has not been completed; however, a review Survey Systems Utility plan (SSL:2 0838:200:1:1:TOPO:UTIL) and online records held by United Utilities the presence of a surface water drains across the site generally running in east-west and north-south trends. A water main is located in the south-west of the site.<br><br>Electricity infrastructure is present along the northern boundary and in the west and south-west of the site. BT infrastructure is present in the west of the site. | |
| **Landfill Sites and Ground Gases** | No landfill sites (current or historic) are located within 250 m of the site. The site has undergone some historic development and ground working, the Made Ground associated with the historic development may produce hazardous ground gases such as methane and carbon dioxide.<br><br>Potentially infilled land (water and non-water) associated with unknown filled ground has been identified between 23m and 248m from the site. | |
| **Radon** | Less than 1% of houses above the 'Action Level' – no special precautions required. | |
| **Coal Mining/Land Stability** | The site is located within a Coal Mining Reporting Area but not within a development high risk area. There are no mine entries, coal outcrops, past or probable shallow coal mine workings beneath or in close proximity to the site. The risk from underground coal workings is considered to be very low and no further works are deemed to be required in relation to coal mining. | |
| **Hazardous Installations** | No hazardous installations that could potentially prejudice the proposed construction of highly sensitive residential dwellings have been identified within influencing distance of the subject site. | |

| | |
|---|---|
| **Initial Conceptual Site Model** | Contaminant Sources<br>• Made Ground (historical industrial uses) – PAHs, heavy metals, TPHs, ACM, gases<br>• Historical industrial uses (spillages of fuel etc.) – PAHs, TPHs, Metals, SVOCs, VOCs<br>Pathways<br>• Direct contact and ingestion<br>• Volatilisation/indoor explosion<br>• Vapour inhalation<br>• Dust inhalation<br>Receptors<br>• Future site users and construction workers<br>• Buildings<br>• Underlying aquifer (Principal bedrock aquifer) |
| **Recommendations** | A detailed Phase II intrusive Geoenvironmental Site Assessment should be undertaken to confirm the findings of the initial conceptual site model and value engineer a development solution. |

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## DRAWING LIST

15-175-001 - Site Location Plan
15-175-002 - Proposed Development Plan
15-175-003 - Historical Features Plan
15-175-004 - Site Features Plan

# 1. INTRODUCTION

## 1.1. BACKGROUND

E3P Ltd has been commissioned by Latimer Develpoments Ltd (the client) to undertake a Phase I Geoenvironmental Site Assessment at the land to the east of Great Ducie Street, Manchester, M3 1PT. The site is land bound by a Travelodge and surface level car parking to the north, further surface level car parking and Dutton Street to the east, the under construction Manchester College to the south and Bury New Road / Great Ducie Street to the west.

This report is required to determine potential contaminated land liabilities and geotechnical constraints as part of a proposed site redevelopment

## 1.2. PROPOSED DEVELOPMENT

E3P understands that Latimer Developments Ltd are involved with a proposed scheme to redevelop the site for residential use. Assael Architects have completed a feasibility study for a car free development comprising 442 homes and commercial spaces. The development will comprise two main blocks with differing number of stories, between 1 story and 27 stories.

The site forms part of the adopted Great Ducie Street Strategic Regeneration Framework Masterplan, bringing forward the redevelopment of the former Boddingtons Brewery demolished circa 10 years ago. The site has been purchased from LTE Group (trading as Manchester College) who are delivering a new college facility on the southern part of the site, this is due for completion by summer 2022.

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

FIGURE 1.1 SNAPSHOT OF PROPOSED DEVELOPMENT



## 1.3. OBJECTIVES

- The objectives of the geoenvironmental investigation are as follows:
- Review historical plans, geology, hydrogeology, site sensitivity, floodplain issues, mining records and any local authority information available in order to complete a desk study in line with Environment Agency (EA) document Land Contamination: Risk Management (LC:RM) (2019)
- 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.
- Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

## 1.4. SOURCES OF INFORMATION

Background information was sought from the following sources:

- Envirocheck Search;
- Historical mapping dated 1848 to 2021. 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;
- Magic Map Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007);
- British Geological Survey Map;
- Groundsure IO database;
- https://zeticauxo.com/downloads-and-resources/risk-maps/; and,
- https://flood-map-for-planning.service.gov.uk.

## 1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

## 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.

## 1.7. RISK CLASSIFICATION

E3P has utilised the available data to classify the site on the basis of its likely contaminated land liability and potential for geotechnical constraints in relation to the site development. The risk classification definitions are summarised in Table 1.1.

TABLE 1.1 RISK CLASSIFICATION

| RISK | DEFINITION |
|---|---|
| **Low** | There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property. |
| **Low Moderate** | There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use.<br><br>However, minor issues may require further consideration in the event of future redevelopment of the site. |
| **Moderate** | Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities.<br><br>The risks identified are unlikely to pose an immediate significant issue but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the site will likely require further site investigation. |
| **Moderate High** | Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that require further assessment, including intrusive ground investigations. |
| **High** | Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine to level of risk and associated liability. |

# 2. SITE SETTING

## 2.1. SITE DETAILS

| | |
|---|---|
| **Site Address** | Former Boddingtons Site, Great Ducie Street, Manchester, M3 1PT. |
| **National Grid Reference** | E 383790, N 399260 |
| **Site Area** | 0.59 Ha. |

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 15-175-001.

## 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 a rectangular shaped parcel of land that makes up an area of a larger active car park. At the time of the walkover, an area in the southwest corner of the site was being used as a site compound with hoarding and site cabins for the development to the south of the site for the adjacent development. | |
| **Surface Cover (%)** | **Buildings** | 5% |
| | **Hardstand** | 95% |
| | **Soft Cover** | 0% |
| **Structures** | The site is hardstanding with the only structure present being a small car parking payment booth located along the western boundary.<br><br>No further structures have been identified within the site boundary. | |
| **Access** | Pedestrian access to site can be gained via Francis Street to the north and Great Ducie Street to the west through pedestrian gates. Vehicle access is gained via Francis Street to the north through a barrier system. | |
| **Slope** | The site is has been historically levelled and as such is level with no slope present. | |
| **Retaining Structures** | A 4.00-5.00 m high brick retaining wall is present along the north-eastern boundary of the site. Along the eastern boundary immediately adjacent to the site a slope is present with a further brick retaining wall also present behind or on top of the slope. | |
| **Vegetation/Ecology** | Scrub vegetation and sporadic semi-mature trees are present along the periphery of the eastern boundary. However, due to the site comprising hardstanding across the site, no vegetation is present within the site boundary. | |
| **Hazardous Material Storage** | No above-ground storage tanks (ASTs) or underground storage tanks (USTs) were observed at the site during the preliminary site walkover. However, due to the industrial history of the site, the presence of historic underground tanks and hazardous materials storage cannot be discounted on the site. | |

| | |
|---|---|
| **Asbestos-Containing Material (ACM)** | No evidence of ACM was noted across the site during the site walkover. Given the historical industrial uses of the site, the presence of ACM within underlying Made Ground materials can not be discounted at this time. |
| **Polychlorinated Biphenyls (PCBs)** | There is no equipment identified that may contain PCBs within the site boundary; however, there is an electric substation to the north of the site adjacent to Francis Street, however, it is not anticipated to be a risk to the subject 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, a review Survey Systems Utility plan (SSL:2 0838:200:1:1:TOPO:UTIL) and online records held by United Utilities the presence of surface water drains across the site generally running in east-west and north-south trends. A water main is located in the southwest of the site. |

## 2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

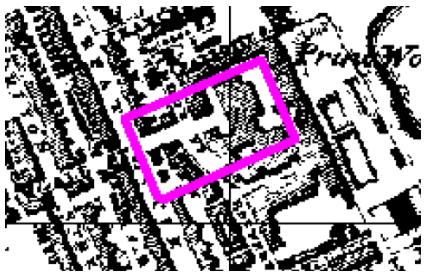
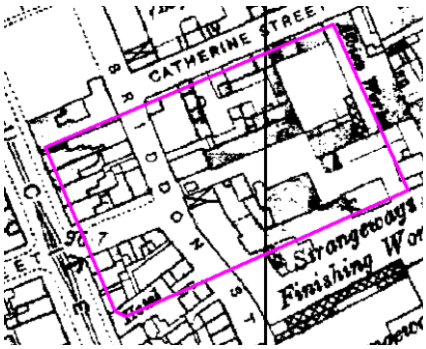
| DIRECTION | LAND USE |
|---|---|
| **North** | Travelodge (Hotel), car parking, Francis Street and industrial and commercial units beyond. |
| **East** | Industrial and commercial units. |
| **South** | Active construction site (Manchester College Site) with A6042 and AO Arena. |
| **West** | Great Ducie Street with industrial and commercial units. |

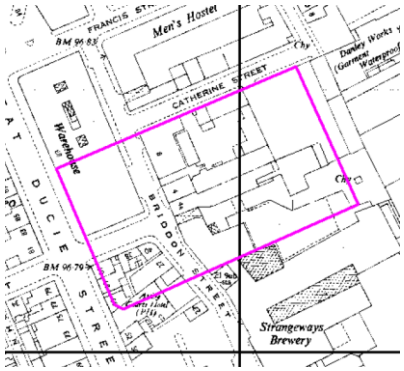
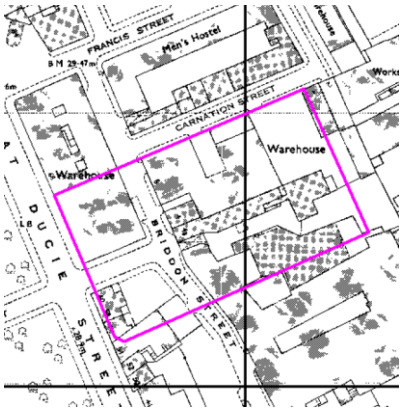
# 3. SITE HISTORY

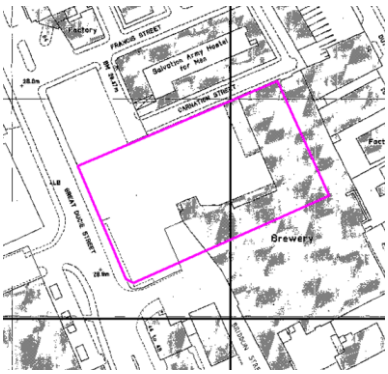
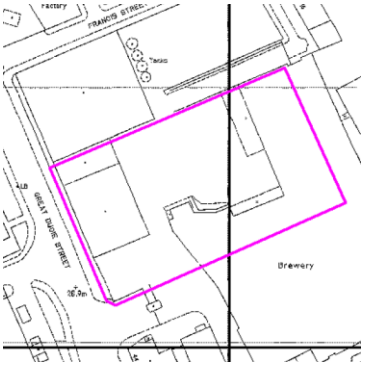
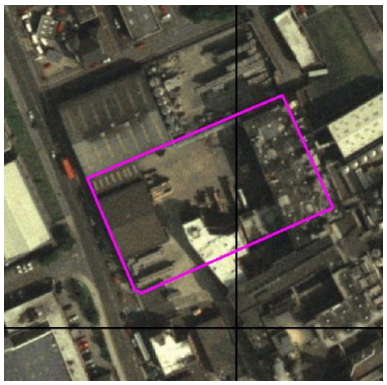
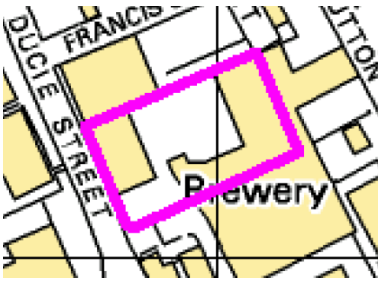
## 3.1. ON-SITE HISTORICAL DEVELOPMENT

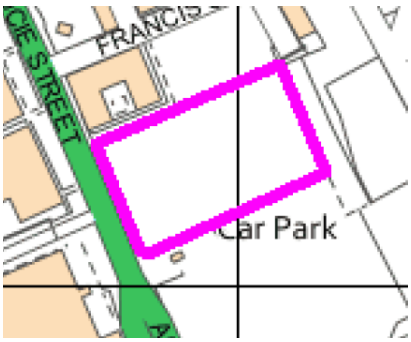
A review of historical mapping and historical aerial imagery pertinent to the site is summarised in Table 3.1. In addition, historical site features are presented in Drawing No 15-175-003 in Appendix III.

TABLE 3.1 HISTORICAL DEVELOPMENT

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1848**<br>**1:10,560** | The site is occupied with several unspecified buildings related to a Print Works with Briddon Street and Nightingale Street in the west sector of the site. |  |
| **1850**<br>**1:1,056** | The site comprises terraced housing in the west of the site. The majority of the site comprises buildings, boilers and tanks associated with Strangeways Calico Print Works. |  |
| **1892**<br>**1:2,500** | The site configuration has changed in the centre of the site and is now part of the wider Strangeways Finishing Works. The north-eastern boundary comprises part of the Albion Works. The configuration of buildings in the southwestern corner has been altered. |  |
| **1908**<br>**1:2,500** | The Albion Works is noted as Albion Works (Cotton Waste). The configuration of buildings in the south of the site has changed. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| 1933 | Mapping dated 1933 provided by Landmark has detailed specific industries taking place on-site, as well as materials with which buildings were constructed. Asbestos has been noted in buildings in the east of the site. Industries on-site include boot repairs, rag and cotton warehouse, plumber, dentist, hotel, waterproof clothing factory, cotton goods warehouse, mortar mill, garage, quilt and clothing factory and an oil store. |  |
| 1949-1951<br>1:1,250 | The north western sector of the site now comprises part of a warehouse. The Albion Works is no longer present. The site now appears to be part of Strangeways Brewery. |  |
| 1952 | Mapping dated 1952 provided by Landmark has shown the mortar mill to no longer be present and a lorry yard now present in the north-east of the site. Buildings in the south of the site are associated with Boddingtons Brewery and includes crates and bottles stores, cask washing building and cask yard. Buildings in the centre of the site have altered in configuration and include an electric shop, paint store, polishing shop, furniture store, paper warehouse joiners shop, printers and clothing factory. |  |
| 1968-1990<br>1:1,250 | The northern sector now comprises a warehouse. Buildings in the southwestern corner of the site are no longer present. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1978-1989**<br>**1:1,250** | The majority of the site has been demolished or cleared. Briddon Street and Nightingale Street are no longer present. The site now comprises part of the wider Brewery noted to the south of the subject site.<br><br>Additional mapping from this period shows that Briddon Street and Nightingale Street were no longer present at some point between 1985 and 1989. |  |
| **1996**<br>**1:1,250** | Two unspecified buildings are now present in the west of the site. |  |
| **2000**<br>**Historical Aerial Photography** | No significant changes to the site. |  |
| **2006**<br>**1:10,000** | No significant changes to the site. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **2021**<br>**1:10,000** | The site has been cleared and noted to be part of a car park.<br><br>Aerial imagery from Google Earth has indicated that the site was cleared at some point between 2006 and 2009. |  |

## 3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 100 m radius of the site is summarised in Table 3.2.

TABLE 3.2 SURROUNDING HISTORICAL DEVELOPMENT

| SURROUNDING FEATURE | DISTANCE | DATES | DIRECTION |
|---|---|---|---|
| **Strangeways Finishing Works**<br>Then: no longer marked | 0 m | Pre 1891-Pre 1951<br>Pre 1951-Present | South |
| **Electricity Substation**<br>Then: no longer marked | 0 m | Pre 1951-Pre1975<br>Pre 1975-Present | South |
| **Albion Works**<br>Then: no longer marked | 0 m | Pre 1891-Pre 1951<br>Pre 1951-Present | East |
| **Warehouse**<br>Then: no longer marked | 0 m | Pre 1951-Pre 1987<br>Pre 1987-Present | North-West |
| **Brewery (Strangeways Brewery)**<br>Then: Brewery extended north<br>Then: no longer marked | 0-28 m | Pre 1850-Pre 1951<br>Pre 1951-Pre 2021<br>Pre 2021-Present | South |
| **Chimney**<br>Then: no longer marked | 3 m | Pre 1951-Pre 1975<br>Pre 1975-Present | East |
| **Chimney**<br>Then: no longer marked | 9 m | Pre 1951-Pre 1975<br>Pre 1975-Present | North |
| **Timber Yard (x2)**<br>Then: no longer marked | 10 m | Pre 1850–Pre 1891<br>Pre 1892–Present | North |
| **Danley Works (Garment Waterproofing)**<br>Then: Works<br>Then: no longer marked | 11 m | Pre 1951-Pre 1975<br><br>Pre 1975-Pre 1987<br>Pre 1987-Present | East |
| **Mop & Duster Factory**<br>Then: Warehouse<br>Then: no longer marked | 12 m | Pre 1952-Pre 1975<br>Pre 1975-Pre 1987<br>Pre 1987-Present | East |
| **Tanks**<br>Then: no longer marked | 14 m | Pre 1987-Pre 1999<br>Pre 1999-Present | North |

| SURROUNDING FEATURE | DISTANCE | DATES | DIRECTION |
|---|---|---|---|
| **Iron Works**<br>Then: Engineering Works<br>Then: no longer marked | 14 m | Pre 1890-Pre 1908<br>Pre 1908-Pre 1951<br>Pre 1951-Present | East |
| **Chimney (x3)**<br>Then: no longer marked | 21 m | Pre 1891-Pre 1908<br>Pre 1908-Present | East |
| **Factory**<br>Then: no longer marked | 22 m | Pre 1987-Pre 1996<br>Pre 1996-Present | East |
| **Clarence Hot Works**<br>Then: no longer marked | 25 m | Pre 1891-Pre 1908<br>Pre 1908-Present | North |
| **Tanks**<br>Then: no longer marked | 28-55 m | Pre 1987-Pre 2021<br>Pre 2021-Present | South/South-East |
| **Carriage Works**<br>Then: no longer marked | 30 m | Pre 1908-Pre 1933<br>Pre 1933-Present | South-East |
| **Warehouse**<br>Then: Egmont House | 35 m | Pre 1987-Pre 1992<br>Pre 1992-Present | South-West |
| **Garage**<br>Then: no longer marked | 38 m | Pre 1951-Pre1987<br>Pre 1987-Present | South-East |
| **Clothing Works**<br>Then: Works | 42 m | Pre 1952-Pre 1975<br>Pre 1975-Present | North |
| **Factory (x2)** | 50 m | Pre 1987-Present | North |
| **Garages**<br>Then: no longer marked | 61 m | Pre 1952-Pre 1975<br>Pre 1975-Present | North |
| **Cabinet Makers**<br>Then: Motor Repair Works<br>Then: no longer marked | 62 m | Pre 1951-Pre 1975<br>Pre 1975-Pre 1987<br>Pre 1987-Present | South-East |
| **Works**<br>Then: Factory | 63 m | Pre 1975-Pre 1987<br>Pre 1987-Present | North |
| **Tank**<br>Then: no longer marked | 64 m | Pre 1891-Pre 1952<br>Pre 1952-Present | South |
| **Tank**<br>Then: no longer marked | 64 m | Pre 1891-Pre 1908<br>Pre 1908-Present | North |
| **Works**<br>Then: no longer recorded | 66 m | Pre 1975-Pre 1987<br>Pre 1987-Present | North-East |
| **Tanks**<br>Then: no longer marked | 70 m | Pre 1951-Pre 1975<br>Pre 1975-Present | East |
| **Chimney**<br>Then: no longer marked | 73 m | Pre 1891-Pre 1975<br>Pre 1975-Present | South |
| **Depot** | 73 m | Pre 1987-Present | North |
| **Timber Yard**<br>Then: no longer recorded | 80 m | Pre 1850–Pre 1891<br>Pre 1892–Present | South-East |
| **Oil Works**<br>Then: Works | 80 m | Pre 1951-Pre 1975<br>Pre 1975-Present | East |

| SURROUNDING FEATURE | DISTANCE | DATES | DIRECTION |
|---|---|---|---|
| **Clothing Works**<br>Then: no longer recorded | 85 m | Pre 1975-Pre 1987<br>Pre 1987-Present | South-East |
| **Printing Works**<br>Then: Warehouse<br>Then: no longer marked | 87 m | Pre 1951-Pre 1975<br>Pre 1975-Pre 1992<br>Pre 1992-Present | East |
| **Clothing Factory**<br>Then: Factory | 95 m | Pre 1975-Pre 1987<br>Pre 1987-Present | North-East |
| **Timber Yard**<br>Then: no longer recorded | 100 m | Pre 1850–Pre 1891<br>Pre 1892–Present | South-West |

Mapping dated 1933 and 1952 provided by Landmark shows details of the subject site and the immediate surrounding area. Snapshots of the mapping are presented in Appendix V.

The detailed mapping has identified a series of industries in close proximity to the site including:

- Boot Warehouse;
- Waterproof Clothing Factories;
- Engine Waste, Sponge, Cloths, Wipers and Duster Stores;
- Candle & Lampwicks & Cotton Factory;
- Foundry;
- Motor Engineers; and,
- Garage and Repairs;
- Boddington Breweries.

## 3.3. PLANNING HISTORY

E3P has undertaken a review of online planning records held by Manchester City Council and 21 previous applications have been noted for the subject site which have included the retention of a surface level car park; a single storey extension to a boiler house; installations of waste and storage tanks; conversion of disused Public House into a private bar for functions including welfare facilities and offices; widening of site entrance and erection of gatehouse and fence; change of use of ground floor from wine and spirit store to reception, offices and new entrance; elevation changes; illuminated signs; new windows and fire escape door; installation of rough beer vessels; erection of boundary fencing; and, installation of canteen and dining room.

# 4. ENVIRONMENTAL SETTING

## 4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map (Sheet 85) for the site, (1:50,000, Solid editions) and online records indicate 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** | East of site - Glacial Till | DIAMICTON | Secondary undifferentiated |
| | West of Site – No superficial deposits recorded. | N/A | Secondary A |
| **Solid** | Chester Formation | SANDSTONE | Principal Aquifer |

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

| LOCATION | DEPTH | MADE GROUND | DRIFT | SOLID |
|---|---|---|---|---|
| **28 m SE** SJ89NW1471 | 7.60m | <1.84m (Hardcore and rubble fill) | CLAY 1.84-4.46m GRAVEL 4.46-6.23m | SANDSTONE >6.23m |

TABLE 4.3 FAULTING

| LOCATION | DESCRIPTION |
|---|---|
| **On site** | Ardwick Fault. Trending approximately north west – south east with the downthrow side present on the north east of the fault |
| **400m NE** | Un-named Fault. Trending approximately north west – south east with the downthrow side present on the north east of the fault |

The Envirocheck report indicates that the site is not located within a groundwater source protection zone. However, there are 21 groundwater abstraction licences within 500 m of the site. Within 51 m of the subject site (the closest located 8 m from the site), 17 groundwater abstraction points are operated by Interbrew UK Ltd all associated with breweries/wine, drinking, cooking, sanitary and washing uses and Strangeways Brewery which is no longer operational or present. E3P are not aware of any records detailing the abstraction wells being decommissioned. Two further groundwater abstraction points are associated with Joseph Holt Ltd 480 m north of the site and utilised for process water and general cooling associated with Derby Brewery. 498 m north of the site two groundwater abstraction points are associated with Lancashire Dairies Ltd at Derby Street, Cheetham, utilised for drinking, cooking, sanitary, washing and general cooling. No permit end dates have been provided for any of the identified groundwater abstraction points.

Based on the local topography and location of nearby surface water features, it is likely that any shallow groundwater if present will flow in a westerly direction towards the River Irwell.

## 4.2. NATURAL LANDFORM AND GEOMORPHOLOGY

Based on the initial geological assessment, a review of available topographic data and pertinent mapping, E3P has undertaken a preliminary geomorphological assessment of the landform and its possible mechanism for formation.

Due to the historical industrial uses on-site, it is likely the site has been artificially levelled as to create a development platform and thus the current level topography is unlikely to be representative of the original landform. The natural landform is likely to have sloped downhill to the west where a river cut through clay deposits. A retaining wall in the east of the site is indicative of the site either being cut historically to provide a level development platform or the surrounding area filled.

It is likely that the historical cut and fill works has resulted in a significant thickness of Made Ground overlying the natural glacial till on site. Additionally, significant underground obstructions are likely to be present associated with former development on site.

## 4.3. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.4.

TABLE 4.4 SUMMARY OF GEOTECHNICAL DATA

| HAZARD | DESIGNATION |
|---|---|
| **Shrink-Swell Clay** | No hazard - very low risk |
| **Landslides** | Very Low risk |
| **Ground Dissolution** | No hazard |
| **Compressible Ground** | No hazard |
| **Collapsible Deposits** | Very low risk |
| **Running Sand** | Very low – low risk |

## 4.4. COAL MINING

The Envirocheck report states the site is in an area that may be affected by coal mining.

A Coal Authority (CA) mining report was obtained (Ref: 51002694223001) dated 14th October 2021.

The CA operates a risk-based approach to the assessment of potential instability issues associated with the future development of land located within the predefined CA consultation areas. This risk-based approach subdivides the potential risk into “low” and “high” risk categories.

The risk categories can be defined as:

***Low-Risk Sites*** – Deemed to be land where coal mining has taken place, however, it was at such depth not to pose a risk to new development and it, therefore, contains no known recorded risks and as such no further assessment is required.

For low-risk sites, the CA categorically states:

> *If your proposed development is within the Development Low Risk Area there is no need for you to submit any coal mining information with your planning application and The Coal Authority will not be consulted by the LPA. The LPA will include our Standing Advice as an informative note within the decision notice.*

***High-Risk Sites*** – Deemed to be landholdings located within an area known to contain legacy risks that include:

- Mine entries (shaft or adit);
- Shallow coal workings (recorded and probable);
- Workable coal seam outcrops;
- Mine gas sites and areas;
- Recorded coal-mining-related hazards;
- Geological features (fissures and break lines); and
- Former surface mining sites (sometimes using historic opencast extraction methods).

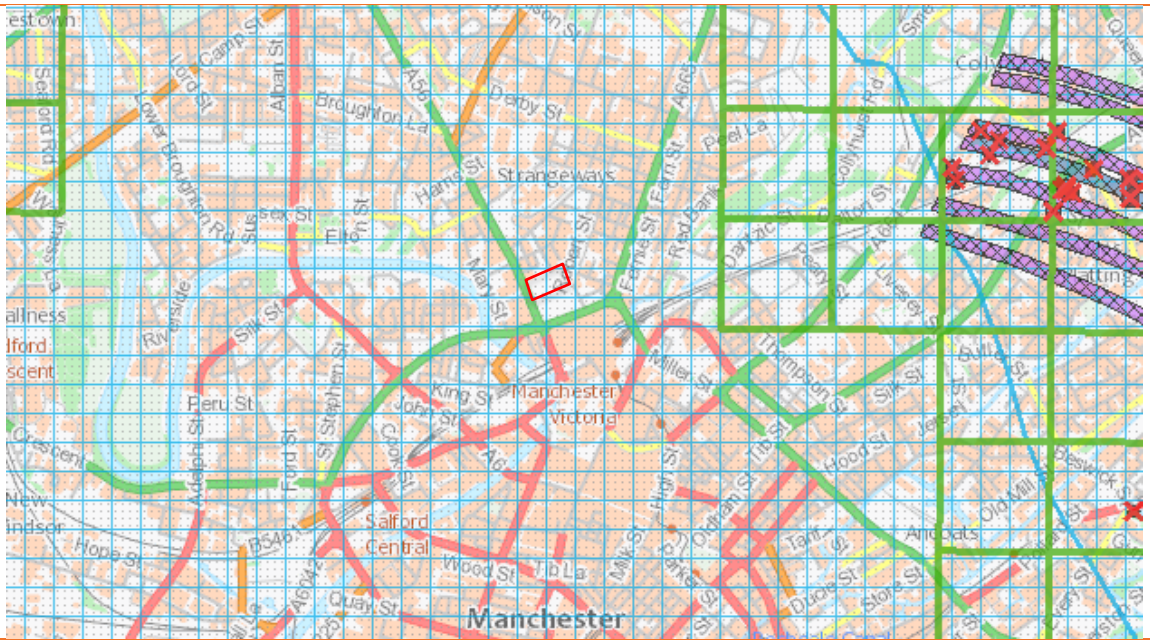
## 4.5. COAL MINING INFORMATION

Prior to the enactment of the Coal Mines Regulation Act (1872), which came into force on the 1st January 1883, there was no statutory requirement to record the extent of abandoned mine workings and as such the CA has no knowledge of extensive workings throughout the UK Coal Fields where shallow workings are present at a depth that could result in a subsidence event in the future (through successive cavitation) associated with failure of the support mechanism.

To determine if a site may have unrecorded or recorded coal mine workings requires the consideration of a wide range of information and E3P has completed a review of relevant information in relation to potential coal mining activities.

In the first instance, E3P has reviewed the Coal Authority Online Viewer and an excerpt of this is presented in Figure 4.3. This map shows that the site lies within a coal mining reporting area but not within a development high risk area. Furthermore, there are no coal seams or mine entries on the subject site or in close proximity to the site. No past or probable shallow coal mine workings have been identified within or in close proximity of the site.

FIGURE 4.1 EXCERPT OF THE COAL AUTHORITY ONLINE VIEWER




As the site is within an area affected by Coal Mining E3P have consulted with the Coal Authority who have provided a Consultant Coal Mining Report for the site (ref: 51002694223001).

Table 4.5 provides a summary of pertinent coal mining information with this report.

TABLE 4.5 COAL MINING INFORMATION

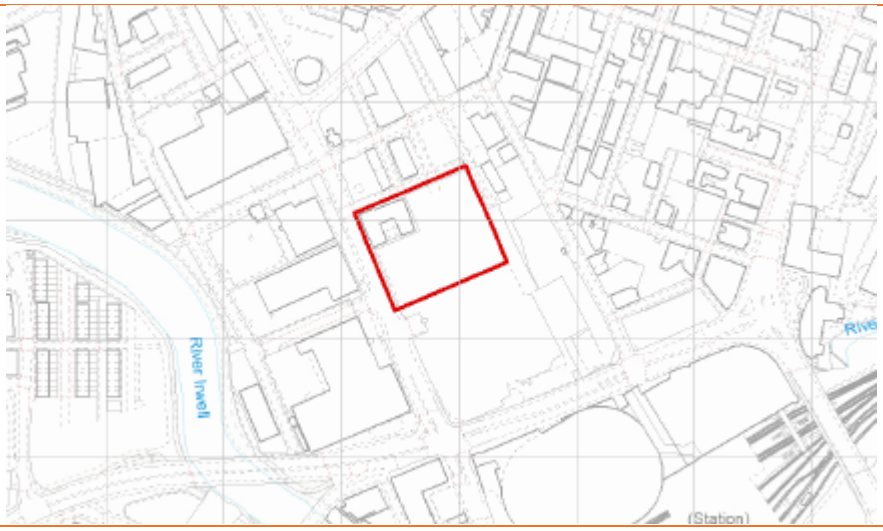
| SOURCES OF INFORMATION | SUMMARY |
|---|---|
| **Known Past Underground Mining** | No past mining recorded. |
| **Probable Unrecorded workings** | None. |
| **Spine Roadways at Shallow Depth** | None recorded. |
| **Mine Entries within 100m of the site** | None recorded on or within 100m of the subject site. |
| **Mine Abandonment plans** | None available. |
| **Known outcrops** | No outcrops recorded. |
| **Faults / Fissures** | No faults, fissures or breaklines recorded. BGS mapping has identified the Ardwick Fault underlying the site. |
| **Opencast mines** | None recorded within 500m of the site. |
| **Coal Authority Managed Tips** | None recorded within 500m of the site. |
| **Remediated Sites** | None recorded within 50m of the site. |
| **Coal Mining Subsidence** | None recorded. |

| SOURCES OF INFORMATION | SUMMARY |
|---|---|
| **Mine Gas** | None recorded within 500m of the site. |
| **Mine Water** | None recorded within 500m of the site. |
| **Future Underground Mining** | None recorded. |
| **British Geological Survey Mapping** | The 1:10,000 nor the 1: 50,0000 geological mapping for the area has not identified any features associated with coal mining. |
| **Review of Coal Authority Archive** | No CA archives/mine abandonment plans are made available. |
| **Historical Ordnance Survey Mapping** | A review of the 1:10,000 Ordnance Survey mapping from circa 1850, which has records of mine workings that predate the Mining & Regulation Act of 1872, has not identified any features indicative of historical mine workings in proximity to the application site. |
| **Historical Site Investigations** | E3P has not been provided with any historic site investigation reports. |

### 4.5.1. COAL AUTHORITY PLAN

The Coal Authority plan referenced: MR-LARGE-PLOT-51002694223001 has not identified any features associated with Coal Mining within the site boundary or in close proximity to the site.

FIGURE 4.2 COAL AUTHORITY PLAN FOR THE SITE




## 4.6. COAL MINING RISK ASSESSMENT

This risk assessment comprises a desk-based review of all available information on coal mining issues that are relevant to the application site deemed to be located within a high-risk area. This includes:

- Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues

have influenced the proposed development; and

- Demonstrating to the local planning authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

The coal mining risk assessment is summarised in Table 4.6.

TABLE 4.6 SUMMARY OF COAL MINING RISK ASSESSMENT

| COAL MINING RISK ASSESSMENT | YES/NO | RISK ASSESSMENT |
|---|---|---|
| Recorded Underground Coal Mining at Shallow Depth (< 30 m) | No | Very Low |
| Recorded Underground Coal Mining at Shallow Depth (> 30 m) | No | Very Low |
| Evidence of Unrecorded Surface Extraction of Coal Outcrop | No | Very Low |
| Unrecorded Underground Coal Mining at Shallow Depth (< 30 m) | No | Very Low |
| Mine Entries (Shaft/Adits) | No | Very Low |
| Coal Mining Geology – Fractures/Fissures | No | Very Low |
| Recorded Gas Emissions | No | Very Low |
| Recorded Mining Surface Hazard | No | Very Low |
| Surface Mining (Opencast) | No | Very Low |

Based on the above, a very low risk of unrecorded coal mining at shallow depth has been identified. No further works are considered necessary.

## 4.7. 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.

## 4.8. PRELIMINARY GEOTECHNICAL ASSESSMENT

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

- Given the highly developed nature of the site, it is likely there will be significant depths of Made Ground fill deposits and obstructions. All hardstanding and relict foundations will require grubbing out, prior to the construction of the proposed development.

- The eastern boundary of the site comprises a brick retaining wall and an embankment with a brick retaining wall. Consideration of this feature should be undertaken when designing the proposed development to ensure undermining of these features does not occur.

- The site is generally topographically level and in order to construct the proposed development, it is considered that minimal earthworks will be required to create a level developable platform and will largely comprise the removal of all hardstanding and underground obstructions.

- The eastern sector of the site is shown to be underlain by Glacial Till, whilst no drift deposits have been mapped in the western sector of the site. An investigation will be required in order to delineate the extent and thickness of these deposits and undertake in-situ geotechnical testing to determine the likely foundation solution for any structures or infrastructure in these areas.

- Given the varying nature of the geology, there is a potential for unacceptable levels of total and differential settlement where foundations or infrastructure span geologies.

- The presence of low permeability glacial till may indicate that perched groundwater could be present at a shallow depth, depending on the thickness of Made Ground deposits. A ground investigation to determine the geological sequence as detailed above, could also be used to assess the groundwater levels.

## 4.9. HYDROLOGY

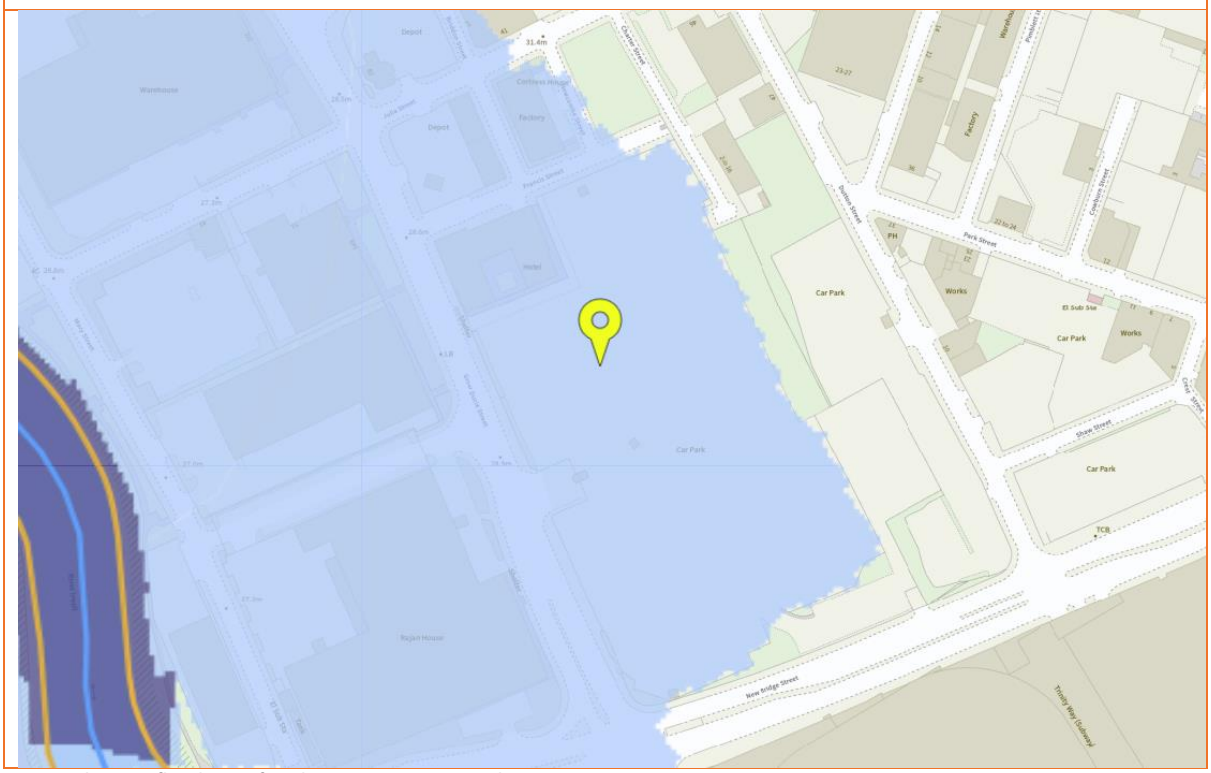
Surface water features within 250 m of the subject site are summarised in Table 4.7.

TABLE 4.7 SURFACE WATER FEATURES

| SURFACE WATER FEATURE | QUALITY | DISTANCE (m) | DIRECTION |
|---|---|---|---|
| River Irwell | Poor | 156 m | South-West |
| River Irk | Poor | 213 m | South-East |

The site is predominantly 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; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. In addition, the Envirocheck report states there is a potential for groundwater flooding of property situated below ground level. The western corner of the site has been assessed as being in an area for the potential for groundwater flooding to occur at the surface. The Environment Agency (EA) Flood Risk Map for the site is presented in Figure 4.3.

FIGURE 4.3 EA FLOOD RISK MAP




Source - https://flood-map-for-planning.service.gov.uk/

## 4.10. INDUSTRIAL LAND USES

The site is located within a predominantly industrial and commercial area; there are five active contemporary trade directory entries within 250 m of the subject site which are summarised within Table 4.8:

TABLE 4.8 CONTEMPORARY TRADE DIRECTORY ENTRIES

| NAME | DIRECTION AND DISTANCE FROM SITE | CLASSIFICATION |
|---|---|---|
| Joseph Segal Ltd | 77 m North | Packaging Materials Manufacturing and Suppliers. |
| Riverside Outlet Ltd | 78 m North | Textile Manufacturing |
| Temple of Vendora | 117 m North | Distribution Services |
| Super Saeed Hosiery | 139 m East | Lingerie & Hosiery Manufacturers & Wholesalers |
| Super Five Auto Care | 140 m East | Garage Services |

## 4.11. SENSITIVE LAND USES

The site is located within a Nitrate Vulnerable Zone associated with the River Irwell, Manchester Ship Canal (Kearsley to Irlam Locks). A further Nitrate Vulnerable Zone is located 55 m east of the site associated with the River Irk. There are no residential properties close to the site however a hotel is present adjacent to the northern boundary.

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

## 4.12. SITE SENSITIVITY ASSESSMENT

The site is assessed to be located within a "High" sensitivity setting as discussed within Table 4.9.

TABLE 4.9 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 8m east of the site utilised for a brewery and process water, drinking, cooking, sanitary and washing. The brewery is no longer present or operational, so it is likely these are no longer in operation however E3P are not aware of any records detailing their decommission. | MODERATE |
| Aquifer Classification in Superficial Drift Deposits | Secondary undifferentiated / Secondary A Aquifer | MODERATE |
| Aquifer Classification in Bedrock | Principal Aquifer | HIGH |

| SENSITIVITY PROFILE | DISCUSSION | RATING |
|---|---|---|
| **Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?** | The west of the site has no mapped drift geology present and bedrock is likely to be shallow in this area of the site. In the east, the site is underlain by glacial till which is likely to comprise low permeability cohesive drift deposits. BGS boreholes in close proximity of the site identified CLAY to circa 4.46mbgl. which was in-turn underlain by high permeability GRAVEL to 6.23mbgl. where the SANDSTONE bedrock was subsequently encountered. The limited CLAY deposits will provide some protection to the underlying Principal aquifer however granular deposits may facilitate the movement of mobile phase contaminants to migrate towards the bedrock aquifer. | MODERATE/HIGH |
| **Is the Site Located Within 50 m of a Surface Watercourse?** | The risk of surface water is negligible given the absence of a viable receptor within influencing distance of the site | LOW |
| **Sensitive Land Uses** | The site is located within a Nitrate Vulnerable Zone. A hotel is present to the north of the site, but no other sensitive land uses have been identified. | MODERATE |
| **OVERALL SITE ENVIRONMENTAL SENSITIVITY** | | HIGH |

# 5. CONSULTATIONS

## 5.1. LANDFILL SITES AND WASTE TREATMENT SITES

There are no current or historical landfills present within 250m of the subject site. Potentially infilled land (non-water) associated with unknown filled ground (for example a pit or quarry) has been identified 55m north-east of the site from mapping dated 1994.

Additionally, potentially infilled land (water) associated within unknown filled ground (for example a pond, marsh, river, stream or dock) has been noted in five locations within 250 m of the site.

## 5.2. REGULATORY DATABASE

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

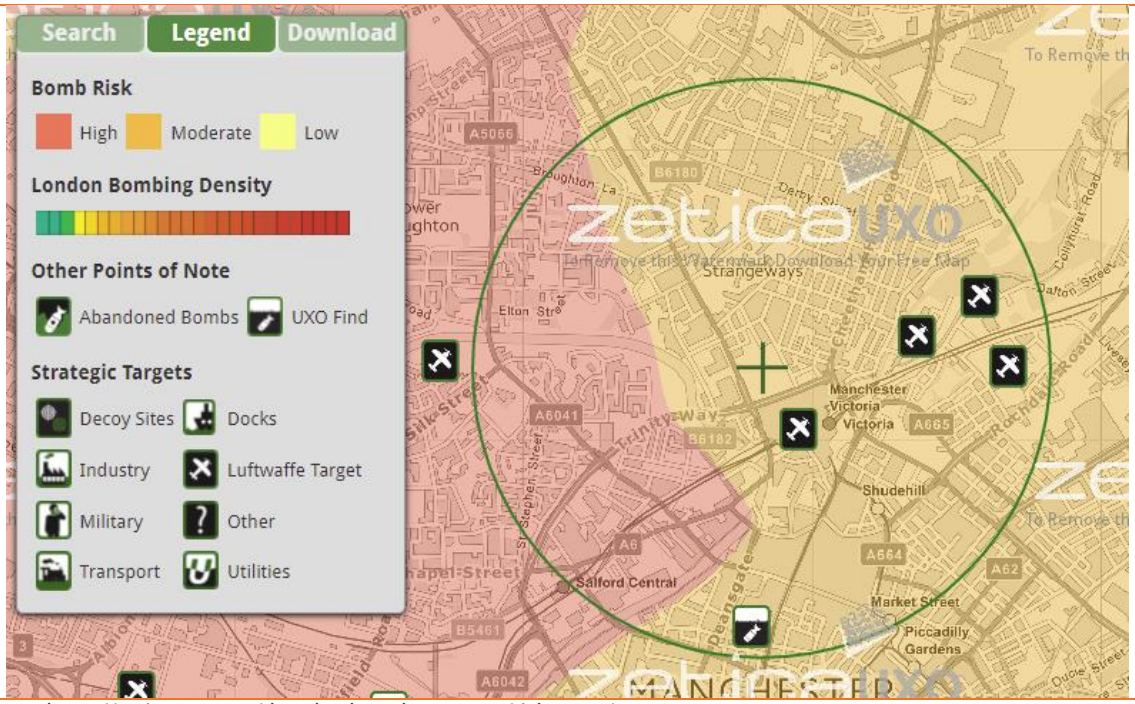
TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

| RECORD | ENTRIES WITHIN 250 m | DETAILS |
|---|---|---|
| **Contaminated Land Register Entries and Notices** | 0 | None Identified |
| **Authorised Industrial Processes (IPC/IPPC/LAPPC)** | 1 | 134 m north of the site is Park Garage M/Cr Limited. However, the authorisation has been noted to be revoked. |
| **Fuel Stations Entries** | 0 | None Identified |
| **Licensed Radioactive Substances** | 0 | None Identified |
| **Enforcements, Prohibitions or Prosecutions** | 0 | None Identified |
| **Discharge Consents** | 8 | 8 discharge consents are operated by United Utilities and located between 121m and 187m west and south-west of the site. 5 entries have been revoked or varied under EPR 2010. Two entries are post National River Authority legislation with one entry 179m south-west of the site noted to be a new consent but was revoked in April 2018. |
| **Pollution Incidents** | 1 | 161 m east of the site a category 3 – minor incident of unknown oils occurred in May 1995 into the Irwell catchment area. |
| **Consents Issued Under the Planning (Hazardous Substances) Act 1990** | 0 | None Identified |
| **Control of Major Accident Hazard (COMAH) Sites** | 0 | None Identified |

## 5.3. UNEXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area at moderate risk from possible unexploded ordnance (UXO) resulting from the Second World War. The Zeticia UXO Risk Map is presented as Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP




Source - https://zeticauxo.com/downloads-and-resources/risk-maps/

E3P has been provided with a Detailed Unexploded Ordnance (UXO) Risk Assessment by the client which concluded that the area is considered to pose a low risk of harm from UXO for the proposed construction works and it is not considered that intrusive site surveys in relation to UXO is required or a specialist UXO banksman.

## 5.4. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised in Table 5.1.

### ON-SITE SOURCES OF CONTAMINATION

The following potential on-site sources of contamination have been identified:

- Heavy Metals. The historical construction and redevelopment activities (construction and demolition of former buildings and possible cut/fill earthworks) on-site may have generated significant amounts of Made Ground that could contain contaminants such as inorganic heavy metals, polycyclic aromatic hydrocarbons (PAHs) and asbestos-containing materials (ACM). The Made Ground is anticipated across the entire site.

- Asbestos has been noted to be present within the building fabric of previous development on the site. It is likely that during demolition ACMs have been retained on-site as part of the underlying Made Ground matrix.

- Hydrocarbons. Former industrial activities on the site associated with various works, brewery, boot repairs, warehouses, factories, mortar mill, garage and an oil store are considered to have been sources of hydrocarbons on site. It is likely given the types of former development that UST or ASTs have been present on the subject site likely to contain fuel or oils for heating, degreasing agents or lubrication.

- SVOCs and VOCs. Given the various manufacturing processes that have been undertaken on-site previously, there is a potential for halogenated solvents and chlorinated hydrocarbons associated with the former print works, various works, factories, garage and oil store.

- Hazardous Ground Gas. If cut/fill earthworks have been undertaken across the site, a significant thickness of Made Ground could exist. Made Ground is a known source of hazardous ground gases such as methane and carbon dioxide. Volatile compounds may also be present in relation to the potential halogenated solvents and chlorinated hydrocarbons underlying the site.

### OFF-SITE SOURCES OF CONTAMINATION

The risk from off-site sources to the east of the site is considered to be low due to the presence of the retaining wall along the boundary which will act as a barrier to any preferential pathway of determinants. It is unlikely determinants would be able to migrate through the anticipated low permeability drift deposits and then laterally to the subject site. Additionally, the main pathway for the movement of determinants to site from off-site is likely to be the underlying groundwater however given the hydraulic continuity is likely towards the River Irwell to the west and the presence of the retaining wall as discussed above it is unlikely any determinants will be migrating onto the subject site and as such the risk from off-site sources is considered to be low.

The following potential off-site source of contamination have therefore been identified:

- Various Works located in close proximity to the site are potential sources of heavy metals, hydrocarbons, PAHs and a limited extent of solvents utilised for cleaning and degreasing agents.

- An electricity substation was present on the southern site boundary and given the age is a potential source of PCBs. However, there is not considered a risk to the subject site as the adjacent site is currently undergoing construction and remediation works are likely to have been

completed. Additionally PCBs are of low mobility and so are unlikely to migrate to the subject site.

- The demolition of the brewery to the south of the site may be a source of heavy metals, hydrocarbons and PAHs associated with Made Ground deposits.

- Various tanks and garages have been identified in close proximity to the site which may be potential sources of hydrocarbon compounds.

## 5.5. CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 8.14 has been prepared for the site.

TABLE 5.1 CONCEPTUAL MODEL

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL1<br>PL2 | Heavy Metals, non-volatile PAH, low volatility TPHs (Made Ground) | Dermal contact.<br>Dermal contact and ingestion. | Future site users.<br>Off-site receptors. | Likely | High | To be determined |
| **Discussion:**<br>Made Ground is likely to be present across the majority of the site and potentially as significant thicknesses.<br><br>The Made Ground material underlying the site may be a potential source of heavy metals, semi-volatile Polycyclic Aromatic Hydrocarbons (PAH) and petroleum hydrocarbon compounds which may pose a short term risk to construction workers who may come into contact with impacted soils during earthworks.<br><br>**Recommendation:**<br>In consideration of the proposed development, the site will likely be capped by the proposed development and external hardstand thereby removing the exposure pathway. If impacted soils are identified during the ground investigation, local remediation or a suitable cover system will be required in areas of softcover. Construction works therefore must be undertaken using the appropriate Personal Protective Equipment (PPE) to remove this risk. | | | | | | |
| PL3 | ACM in Made Ground | Inhalation of dust. | Future site users.<br>Buildings.<br>Off-site land users. | Likely | High | To be determined |
| **Assessment:**<br>Given the construction and demolition activities that have occurred historically, it is possible that some ACM has become established in the anticipated underlying Made Ground. ACM poses a risk through fibre and dust inhalation and if present may pose a risk to construction workers during any future earthworks/demolition and to adjacent third-party property should dust be generated during those works. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| **Recommendation:**<br>Site investigation and laboratory analysis are required to determine the presence and quantification of any asbestos in the soils. These risks can be mitigated through the development of a detailed enabling works strategy following guidance and protocol specified within the Control of Asbestos Regulations (2012) and industry best practice as detailed in CIRIA733 (Asbestos in Soil and Made Ground: A guide to understanding risk). Construction works completed with PPE and provision of welfare. | | | | | | |
| **PL4** | Volatile contaminants such as hydrocarbons, solvents, halogenated solvents, chlorinated hydrocarbons (Made Ground, Former Works, Factory etc) | Inhalation of vapours.<br><br>Migration through permeable strata and preferential pathways. | Future site users.<br><br>Off-site receptors. | Likely | Moderate | **To be determined** |
| **Assessment:**<br>The composition of the fill material and shallow Made Ground is unknown, and given the industrial history of the area, there is potential for volatile contaminants to be present in the subsurface associated with fuel leaks and chemical spills. Future site users may be exposed to volatile contaminants via inhalation and accumulation of vapours in indoor space, representing a long-term risk. Volatile contamination may pose a short term risk to construction workers, particularly in confined spaces.<br><br>**Recommendation:**<br>Should potentially volatile contamination be identified during the intrusive phase of works, appropriate mitigation measures may be required. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL4 | Methane, carbon dioxide (Made Ground) | Inhalation of gas.<br><br>Migration through permeable strata and preferential pathways.<br><br>Explosion in confined spaces. | Future site users.<br><br>Buildings.<br><br>Off-site land users. | Moderate | Moderate | To be determined |

**Assessment:**
Made Ground underlying the site is a potential source of hazardous ground gas which can accumulate within deep excavations or migrate through permeable strata, foundation structures and/or service ducting and pose a potential risk to construction workers and future site users.

Carbon dioxide and methane have asphyxiation and explosive risks, respectively and should the underlying Made Ground soils be actively gassing the risk to construction workers can be mitigated through appropriate management of confined space entry, whereas the risk to future end users can be mitigated through the adoption of appropriate gas protection measures in accordance with BS8485 *(Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (2015+A1:2019)*

**Recommendation:**
Gas monitoring is required.

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL5 | Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground, brewery, factory, works) | Surface runoff.<br><br>Migration through permeable strata and preferential pathways.<br><br>Perched waters migration. | Groundwater (Principal aquifer). | Likely | Moderate | To be determined |
| **Assessment:**<br>The presence of soluble contaminants underlying the site associated with former industrial land uses or leaks from vehicles cannot be discounted.<br><br>Glacial till in the east of the site may reduce downward migration into the underlying bedrock aquifer, however no drift deposits have been recorded in the west of the site and a Principal Aquifer is present in the bedrock geology.<br>**Recommendation:**<br>Sampling of groundwater required. | | | | | | |
| PL6 | Sulphate (potential ash within Made Ground) | Sulphate attack on concrete. | Building structure. | Likely | Moderate/Low | To be determined |
| **Assessment:**<br>Likely probability as significant contamination anticipated at pipeline depth across the west of the site (0.75–1.35 m).<br><br>**Recommendation:**<br>Intrusive investigation required. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL7 | Organic contaminants such as hydrocarbons, solvents (Made Ground, scrap yards, mills and works) | Ingestion of tainted water supply. | Future site users.<br><br>Water pipes. | Likely | Moderate | To be determined |
| **Assessment:**<br>Likely probability as significant contamination anticipated at pipeline depth across the west of the site (0.75–1.35 m).<br>**Recommendation:**<br>Intrusive investigation required. | | | | | | |
| PL8 | Phytotoxic contaminants (Made Ground) | Direct Contact (plant uptake). | Flora. | Low Likelihood | Low | To be determined |
| **Assessment:**<br>Likely probability as contamination is considered possible, however minimal flora or trees identified on the site. There is considered to be limited potential for risk to ecology or aquatic ecosystems.<br><br>**Recommendation:**<br>Investigation work as part of PL1. | | | | | | |

Main exposure pathways:
PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plants;

# 6. CONCLUSIONS AND RECOMMENDATIONS

## 6.1. SITE SUMMARY

| | |
|---|---|
| **Current Site Use** | The subject site is a rectangular shaped parcel of land that makes up an area of a larger active car park. At the time of the walkover an area in the south west corner of the site was being used as a site compound with hoarding and site cabins for the development to the south of the site for the adjacent development. |
| **Historical Site Use** | The subject site comprised buildings associated with a print works along with Briddon Street and Nightingale Street in earliest mapping from 1848. By 1850 the site was named Strangeways Calico Print Works with several buildings, boilers and tanks on-site; terraced housing was present in the west of the site. In 1892 the site was named Strangeways Finishing Works with Albion Works present on the north-eastern boundary. Mapping from 1933 identified a number of industries on the site including boot repairs, rag and cotton warehouse, plumber, dentist, hotel, waterproof clothing factory, cotton goods warehouse, mortar mill, garage, quilt and clothing factory and an oil store. Terrace housing in the west of the site was demolished and replaced with a warehouse circa 1949-1951; by this time the site was part of Strangeways Brewery. Mapping dated 1978-1989 notes that Briddon Street and Nightingale Street were no longer present with large areas of the site cleared or demolished. The site then comprised the brewery and areas of hardstanding up until some point between 2006 and 2009 where the site was demolished and was subsequently utilised as a car park, which is still its current use. |
| **Site Sensitivity** | The site is considered to be in a high overall sensitivity area due to the presence of a principal aquifer underlying the site and expected ground conditions which may facilitate the migration of determinants to the aquifer. |

## 6.2. CONTAMINATED LAND ASSESSMENT

| | |
|---|---|
| **Human Health** | The site has had an extensive industrial past including a brewery, works, tanks, oil stores that may have generated gross contamination.<br><br>The main types of contamination likely to be present on-site are associated with Made Ground (inorganic heavy metals, PAHs, non-volatile TPHs, ACM) related to former demolition and construction activities on the site and the former processes taking place on-site.<br><br>Given the age of buildings on-site previously it is likely that ACMs are present within any underlying Made Ground on site.<br><br>Given the former uses on-site such as factories, warehouses, former works and the brewery there is a potential for volatile contaminants to be present in the subsurface associated with fuel leaks and chemical spills.<br><br>The risk from off-site sources is considered to be low given the presence of a retaining wall in the east which will limit any lateral migration, and the hydraulic gradient is likely to the west towards the River Irwell and as such any contamination, if present, to the west of the site will likely migrate towards the River Irwell rather than towards the subject site. |
| **Controlled Waters** | The underlying bedrock geology has been classified as a Principal Aquifer; additionally, the superficial aquifers have been classified as Secondary A and Undifferentiated.<br><br>Given the industrial nature of the site, and the potential for mobile and volatile determinants such as hydrocarbons, SVOCs and VOCs, there is considered to be a moderate risk to the underlying principal aquifer. The risk to the River Irwell is reduced due to the distance from the subject site.<br><br>Groundwater monitoring should be completed as part of future site investigation works. |
| **Ground Gas** | It is possible that significant thicknesses of made ground existing below the proposed development area. Should these deposits have a high organic content, it is possible that they could generate hazardous ground gases. |
| **Potable Water** | Elevated concentrations of hydrocarbons are likely to be underlying the subject site which may have a detrimental effect on potable water supplies. |

## 6.3. COAL MINING

| | |
|---|---|
| **Coal Mining** | The site is located within a Coal Mining Reporting Area but not within a development high-risk area. There are no mine entries, coal outcrops, past or probable shallow coal mine workings beneath or in close proximity to the site. The risk from underground coal workings is considered to be very low and no further works are deemed to be required in relation to coal mining. |

## 6.4. GEOTECHNICAL ASSESSMENT

| | |
|---|---|
| **Geological** | Variable granular and cohesive strata pose a risk of total and differential settlement where structures span varying geologies.<br><br>Shallow bedrock is anticipated in the west of the site which may impede shallow excavations.<br><br>An investigation will be required in order to delineate the extent and thickness of these deposits and undertake in-situ geotechnical testing to determine the likely foundation solution for any structures or infrastructure in these areas. |
| **Civil and Structural** | Given the highly developed nature of the site, it is likely there will be significant depths of Made Ground fill deposits and obstructions. All hardstanding and relict foundations will require grubbing out, prior to the construction of the proposed development.<br><br>The eastern boundary of the site comprises a brick retaining wall, and an embankment with brick retaining wall. Consideration of this feature should be undertaken when designing the proposed development to ensure undermining of these features does not occur. |
| **Civil and Structural** | Service infrastructure has been identified across the site which will require decommissioning and diversion in order for the proposed development to be constructed, |
| **Abnormal Foundations** | Given the anticipated presence of substantial underground obstructions and depths of Made Ground, and in consideration of the number of stories required as part of the proposed development it is considered a driven piled foundation solution will be required for the 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 1.3.

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

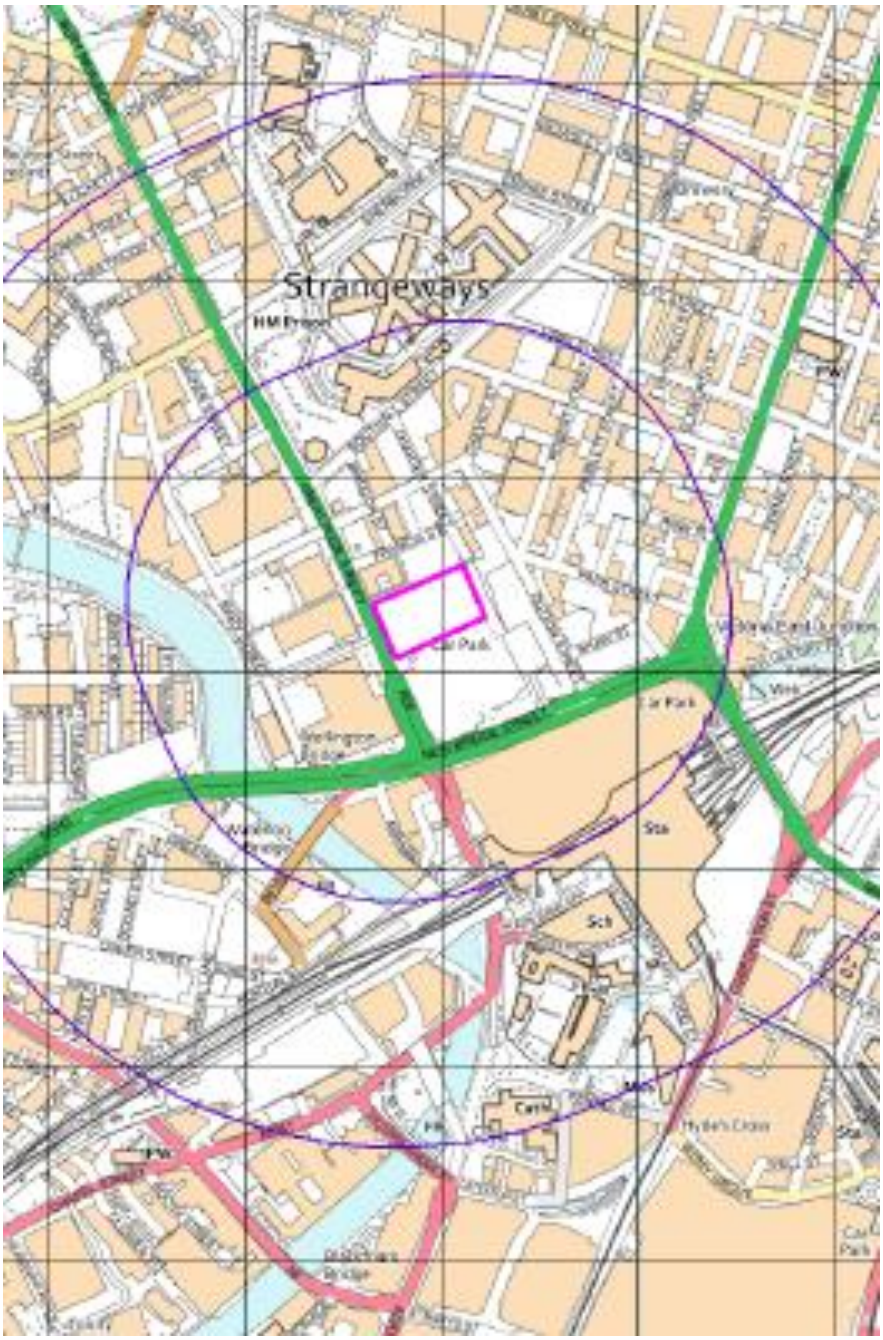
# TERMS

| | | | |
|---|---|---|---|
| **ACM** | Asbestos-containing material | **MMP** | Materials management plan |
| **ADS** | Acoustic design statement | **ND** | Not detected |
| **AST** | Above-ground storage tank | **NDP** | Nuclear density probe |
| **BGS** | British Geological Survey | **NMP** | Noise management plan |
| **BSI** | British Standards Institute | **NPSE** | Noise policy statement for England |
| **BTEX** | Benzene, toluene, ethylbenzene, xylenes | **NR** | Not recorded |
| **CA** | Coal Authority | **PAH** | Polycyclic aromatic hydrocarbon |
| **CBR** | California bearing ratio | **PCB** | Polychlorinated biphenyl |
| **CIEH** | Chartered Institute of Environmental Health | **PI** | Plasticity index |
| **CIRIA** | Construction Industry Research Association | **PID** | Photo ionisation detector |
| **CLEA** | Contaminated land exposure assessment | **POS** | Public open space |
| **CML** | Council of Mortgage Lenders | **PPE** | Personnel protective equipment |
| **CoC** | Contaminants of concern | **ProPG** | Professional practice guidance |
| **CSM** | Conceptual site model | **QA** | Quality assurance |
| **DNAPL** | Dense non-aqueous phase liquid (chlorinated solvents, PCB) | **SGV** | Soil guideline value |
| **DWS** | Drinking water standard | **SPH** | Separate-phase hydrocarbon |
| **EA** | Environment Agency | **SPT** | Standard penetration test |
| **EQS** | Environmental quality standard | **SVOC** | Semi-volatile organic compound |
| **FFL** | Finished floor level | **TPH** | Total and speciated petroleum hydrocarbon |
| **GAC** | General assessment criteria | **TPH CWG** | Total Petroleum Hydrocarbon (Criteria Working Group) |
| **GL** | Ground level | **UKWIR** | United Kingdom Water Infrastructure Risk |
| **GSV** | Gas screening value | **UST** | Underground storage tank |
| **HCV** | Health criteria value | **VCC** | Vibro-concrete column |
| **ICSM** | Initial conceptual site model | **VOC** | Volatile organic compound |
| **LEL** | Lower explosive limit | **VRSC** | Vibro-replacement stone columns |
| **LMRL** | Lower method reporting limit | **VSC** | Vibro-stone columns |
| **LNAPL** | Light non-aqueous phase liquid (petrol, diesel, kerosene) | **WHO** | World Health Organisation |
| **MCV** | Moisture condition value | **WRAP** | Waste and Resources Action Programme |
| **MIBK** | Methyl isobutyl ketone | **WTE** | Water table elevation |

| | | | |
|---|---|---|---|
| **m** | Metres | **ppm** | Parts per million |
| **km** | Kilometres | **mg/m$^3$** | Milligram per metre cubed |
| **% v/v** | Percent volume in air | **m bgl bgl** | Metres below ground level |
| **mb** | Millibars (atmospheric pressure) | **m bcl** | Metre below cover level |
| **l/hr** | Litres per hour | **mAOD** | Metres above ordnance datum (sea level) |
| **µg/l** | Micrograms per litre (parts per billion) | **kN/m$^2$** | Kilonewtons per metre squared |
| **ppb** | Parts per billion | **µm** | Micrometre |
| **mg/kg** | Milligrams per kilogram (parts per million) | **SSRT** | Site Specific Remediation Target |
| **PSD** | Particle Size Distribution | **DD** | Dry Density |
| **CL:AIRE** | Contaminated Land: Applications in Real Environments | **Mc** | Moisture Content |
| **ρ** | Bulk Density | **GPR** | Ground Penetrating Radar |
| **NDP** | Nuclear Density Probe | **FFL** | Finished Floor Level |
| **LEL** | Lower Explosive Limit | **UKWIR** | UK Water Industry Research |
| **CIRIA** | Construction Industry Research and Information Association | **LOD** | Limit of Detection |

# APPENDIX III
# DRAWINGS

## DRAWING 15-175-001 – SITE LOCATION PLAN






| | | | | | | |
|---|---|---|---|---|---|---|
| | Notes: | | Client: Latimer Developments LTD | Job No: 15-175 | Date: 24.11.2021 | e3p Environmental Engineering Partnership Ltd<br>Taylor Road, Trafford Park<br>Urmston, Manchester, M41 7JQ<br>Tel: 0161 707 9612<br>E-mail: info@e3p.co.uk<br>Website: www.e3p.co.uk |
| | | | | Drawing No: 002 | Scale: NTS | |
| | P1 REVB 24.11.2021 EB ND<br>P1 REVA 14.10.2021 CB BH | | Job Title: Former Boddingtons Site, Great Ducie Street | Drawing Title: Proposed Development Plan | | The client must not amend any drawing, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property. |
| | Phase / Issue / Date / Drawn / Checked | | | | | |




*Historical Features*

- Former Unspecified Buildings (Pre 1850 - Pre 1952)
- Former Unspecified Buildings (Pre 1848 - Pre 1850)
- Former Street (Pre 1848 - Pre 1987)
- Former Residential buildings (Pre 1893 - Pre 1957)
- Former Warehouse Then Buildings (Pre 1951 - Pre 2021)
- Former Strangeways Finishing Works/ Calico Works Buildings (Pre 1848 - Pre 1951)
- Former Strangeways/ Boddingtons Bewery (Pre 1951 - Pre 2021)
- Former Warehouse (Pre 1968 - Pre 1987)
- Former Albion Works Buildings (Pre 1892 - Pre 1951)

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVD | 24.11.2021 | EB | ND |
| P1 | REVC | 15.10.2021 | EB | BH |
| P1 | REVB | 12.10.2021 | EB | ND |
| P1 | REVA | 06.10.2021 | HM | BH |

*Client:* Latimer Developments LTD

*Job No:* 15-175

*Date:* 24.11.2021

*Drawing No:* 003

*Scale:* NTS

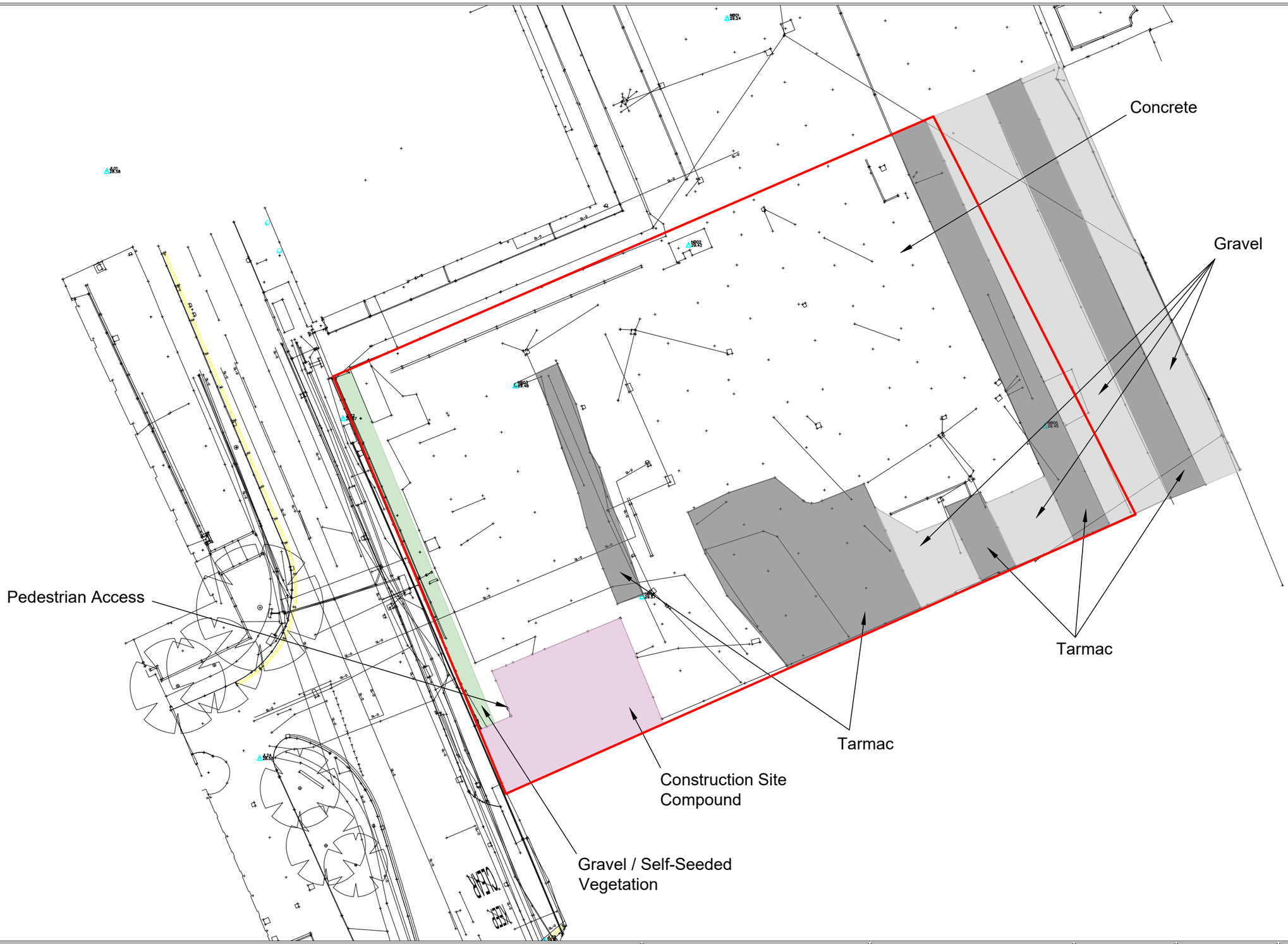
*Job Title:* Former Boddingtons Site, Great Ducie Street

*Drawing Title:* Historical Features Plan


Environmental Engineering Partnership Ltd
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Tel: 0161 707 9612
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Website: www.e3p.co.uk



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*Site Features*

- Construction Site Compound
- Gravel / Self-Seeded Vegetation
- Tarmac
- Gravel

*Notes:*

| | | | | |
|---|---|---|---|---|
| P1 | REVB | 24.11.2021 | EB | ND |
| P1 | REVA | 14.10.2021 | CB | BH |
| Phase | Issue | Date | Drawn | Checked |

*Client:* Latimer Developments LTD

*Job No:* 15-175

*Date:* 24.11.2021

*Drawing No:* 004

*Scale:* NTS

*Job Title:* Former Boddingtons Site, Great Ducie Street

*Drawing Title:* Site Features Plan

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# APPENDIX IV
# PHOTOGRAPHS

PLATE 1 VIEW OF THE SITE LOOKING NORTH



PLATE 2 VIEW OF SITE FACING SOUTH



PLATE 3 VIEW OF THE SITE LOOKING EAST



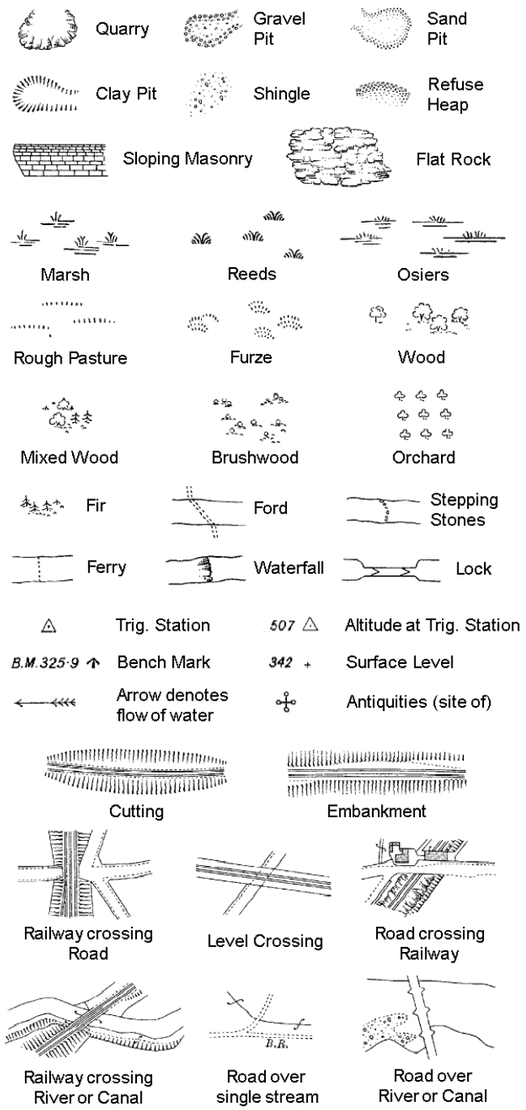
PLATE 4 VIEW OF THE SITE LOOKING WEST



# APPENDIX V
# HISTORICAL MAPS

# Historical Mapping Legends

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




County Boundary (Geographical)

County & Civil Parish Boundary

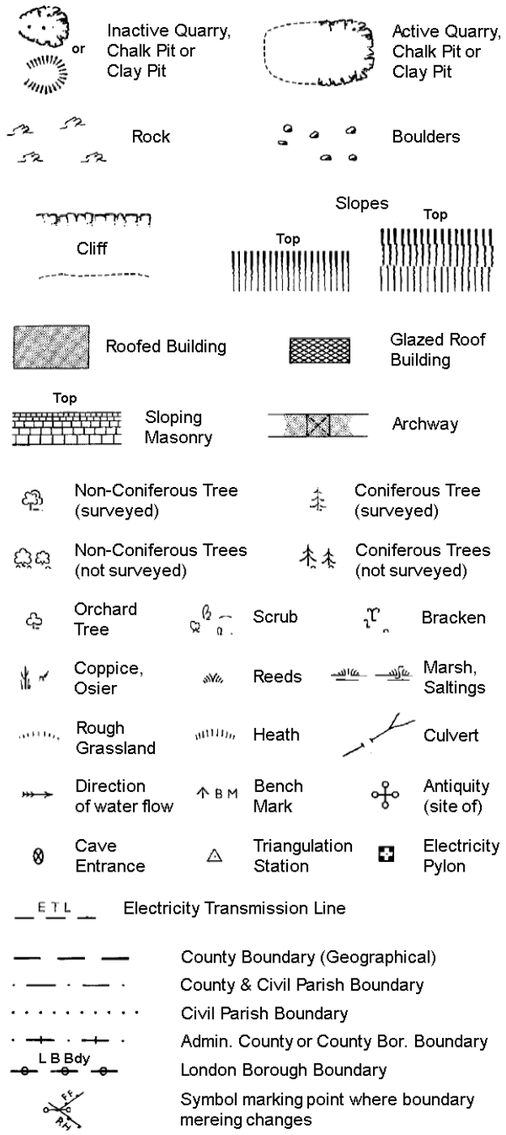
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

| | | | |
|---|---|---|---|
| B P B S | Boundary Post or Stone | P.C.B | Police Call Box |
| B.R. | Bridle Road | P | Pump |
| E.P | Electricity Pylon | S.P | Signal Post |
| F.B. | Foot Bridge | St. | Sluice |
| F.P. | Foot Path | Sp. | Spring |
| G.P | Guide Post or Board | T.C.B | Telephone Call Box |
| M.S | Mile Stone | Tr. | Trough |
| M.P M.R | Mooring Post or Ring | W | Well |

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




County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

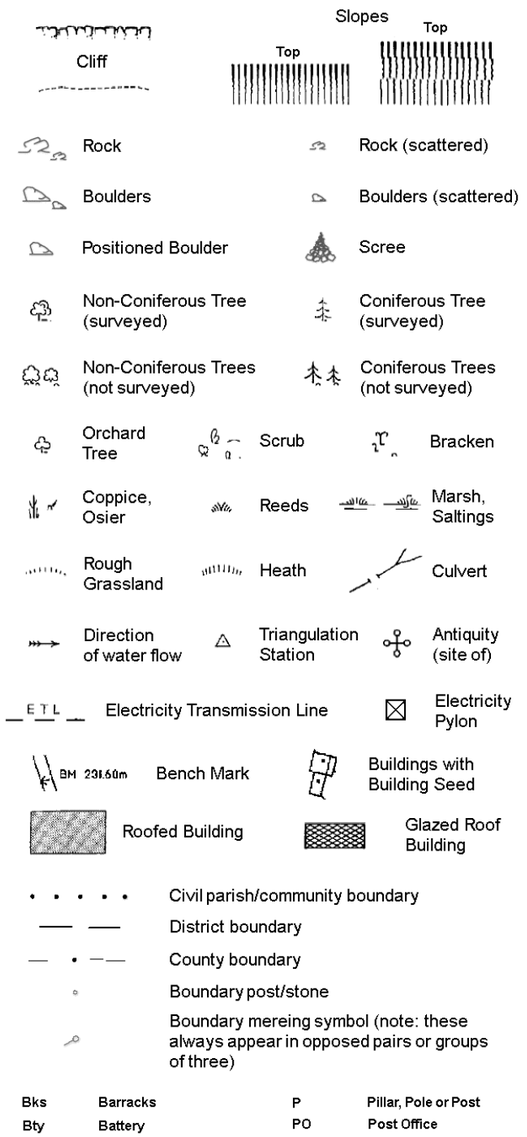
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

| | | | |
|---|---|---|---|
| BH | Beer House | P | Pillar, Pole or Post |
| BP, BS | Boundary Post or Stone | PO | Post Office |
| Cn, C | Capstan, Crane | PC | Public Convenience |
| Chy | Chimney | PH | Public House |
| D Fn | Drinking Fountain | Pp | Pump |
| El P | Electricity Pillar or Post | SB, S Br | Signal Box or Bridge |
| FAP | Fire Alarm Pillar | SP, SL | Signal Post or Light |
| FB | Foot Bridge | Spr | Spring |
| GP | Guide Post | Tk | Tank or Track |
| H | Hydrant or Hydraulic | TCB | Telephone Call Box |
| LC | Level Crossing | TCP | Telephone Call Post |
| MH | Manhole | Tr | Trough |
| MP | Mile Post or Mooring Post | Wr Pt, Wr T | Water Point, Water Tap |
| MS | Mile Stone | W | Well |
| NTL | Normal Tidal Limit | Wd Pp | Wind Pump |

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




Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

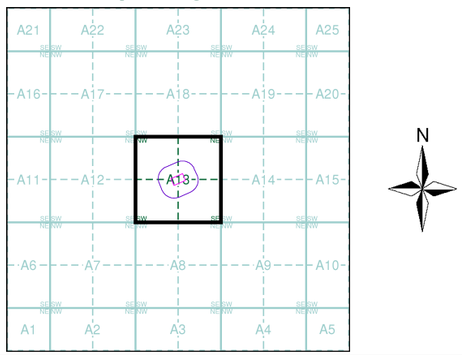
| | | | |
|---|---|---|---|
| Bks | Barracks | P | Pillar, Pole or Post |
| Bty | Battery | PO | Post Office |
| Cemy | Cemetery | PC | Public Convenience |
| Chy | Chimney | Pp | Pump |
| Cis | Cistern | Ppg Sta | Pumping Station |
| Dismtd Rly | Dismantled Railway | PW | Place of Worship |
| El Gen Sta | Electricity Generating Station | Sewage Ppg Sta | Sewage Pumping Station |
| El P | Electricity Pole, Pillar | SB, S Br | Signal Box or Bridge |
| El Sub Sta | Electricity Sub Station | SP, SL | Signal Post or Light |
| FB | Filter Bed | Spr | Spring |
| Fn / D Fn | Fountain / Drinking Ftn. | Tk | Tank or Track |
| Gas Gov | Gas Valve Compound | Tr | Trough |
| GVC | Gas Governer | Wd Pp | Wind Pump |
| GP | Guide Post | Wr Pt, Wr T | Water Point, Water Tap |
| MH | Manhole | Wks | Works (building or area) |
| MP, MS | Mile Post or Mile Stone | W | Well |

e3p

## Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|---|---|---|---|
| Lancashire And Furness | 1:2,500 | 1892 | 2 |
| Lancashire And Furness | 1:2,500 | 1908 | 3 |
| Lancashire And Furness | 1:2,500 | 1933 | 4 |
| Ordnance Survey Plan | 1:1,250 | 1949 - 1951 | 5 |
| Ordnance Survey Plan | 1:2,500 | 1951 - 1952 | 6 |
| Ordnance Survey Plan | 1:1,250 | 1952 - 1961 | 7 |
| Ordnance Survey Plan | 1:2,500 | 1953 - 1958 | 8 |
| Ordnance Survey Plan | 1:1,250 | 1958 - 1984 | 9 |
| Ordnance Survey Plan | 1:2,500 | 1959 - 1965 | 10 |
| Ordnance Survey Plan | 1:2,500 | 1966 - 1971 | 11 |
| Ordnance Survey Plan | 1:1,250 | 1968 - 1990 | 12 |
| Supply of Unpublished Survey Information | 1:1,250 | 1977 | 13 |
| Additional SIMs | 1:1,250 | 1978 - 1989 | 14 |
| Additional SIMs | 1:1,250 | 1981 - 1987 | 15 |
| Ordnance Survey Plan | 1:1,250 | 1986 - 1989 | 16 |
| Additional SIMs | 1:1,250 | 1986 - 1988 | 17 |
| Additional SIMs | 1:1,250 | 1986 - 1990 | 18 |
| Additional SIMs | 1:1,250 | 1991 | 19 |
| Large-Scale National Grid Data | 1:1,250 | 1992 | 20 |
| Large-Scale National Grid Data | 1:1,250 | 1993 - 1995 | 21 |
| Large-Scale National Grid Data | 1:1,250 | 1994 - 1995 | 22 |
| Large-Scale National Grid Data | 1:1,250 | 1995 | 23 |
| Large-Scale National Grid Data | 1:1,250 | 1996 | 24 |
| Large-Scale National Grid Data | 1:1,250 | 1996 | 25 |
| Large-Scale National Grid Data | 1:1,250 | 1996 | 26 |
| Historical Aerial Photography | 1:2,500 | 2000 | 27 |

## Historical Map - Segment A13




## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 100

## Site Details

Great Ducie Street, MANCHESTER


Landmark INFORMATION GROUP

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




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## Lancashire And Furness

## Published 1892

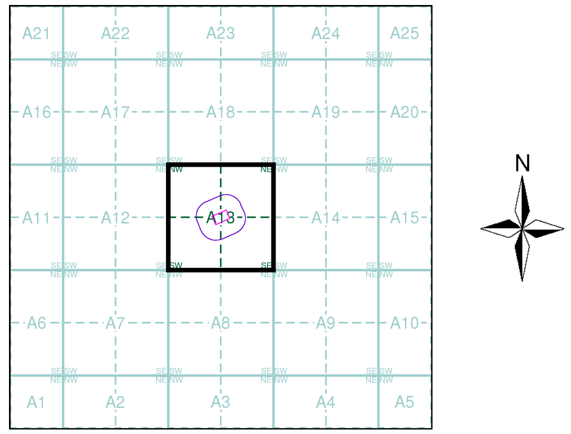
## Source map scale - 1:2,500

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)

104_06
1892
1:2,500

## Historical Map - Segment A13




## Order Details

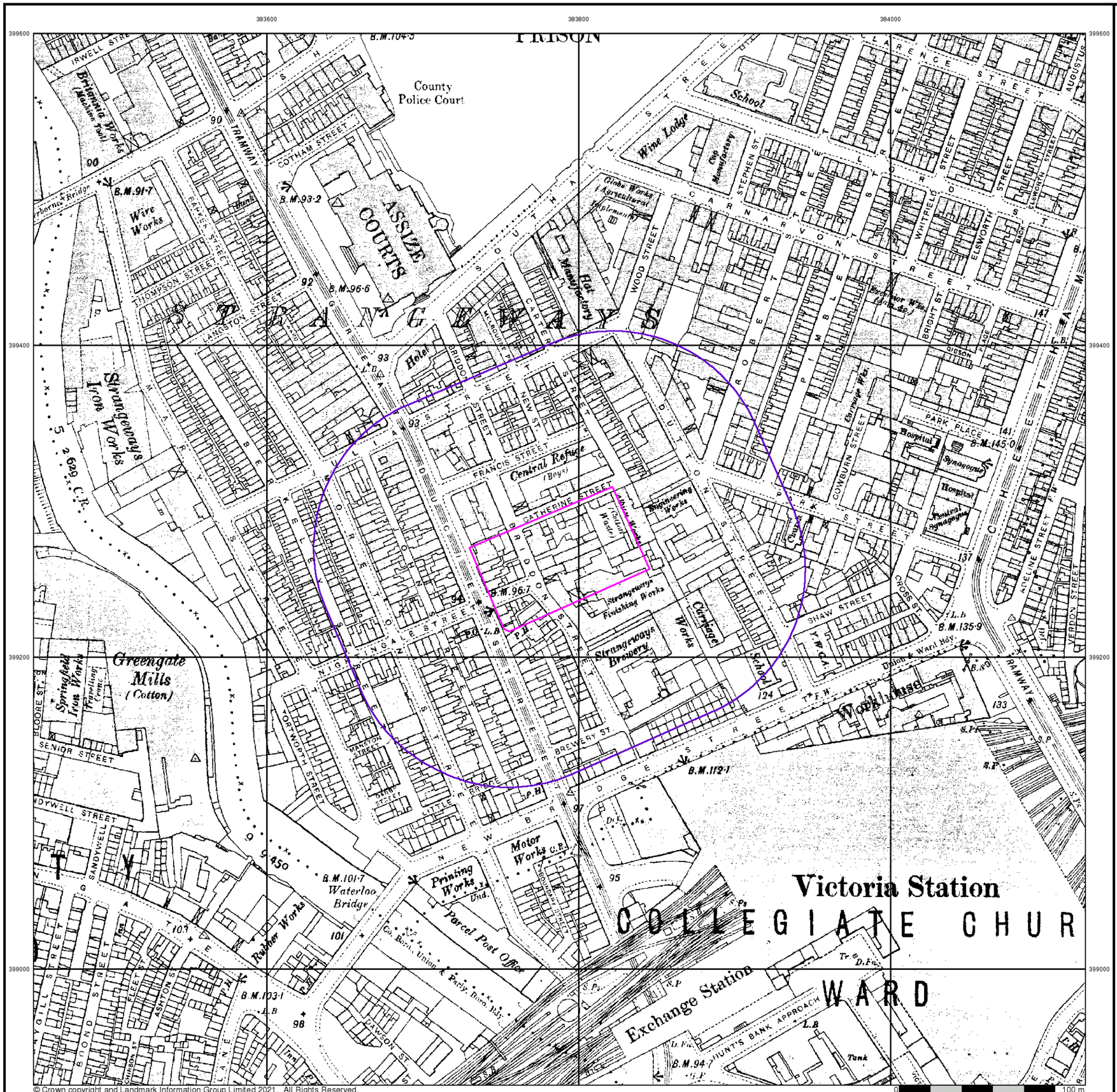
Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 100

## Site Details

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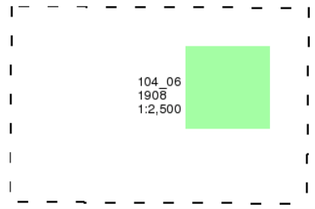
## Lancashire And Furness

## Published 1908

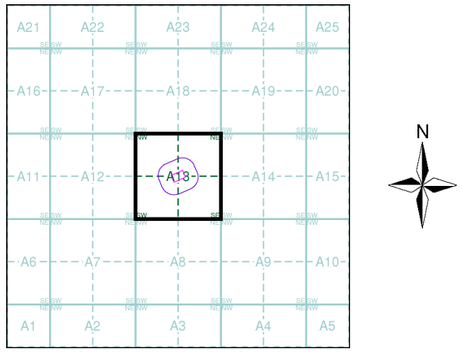
## Source map scale - 1:2,500

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

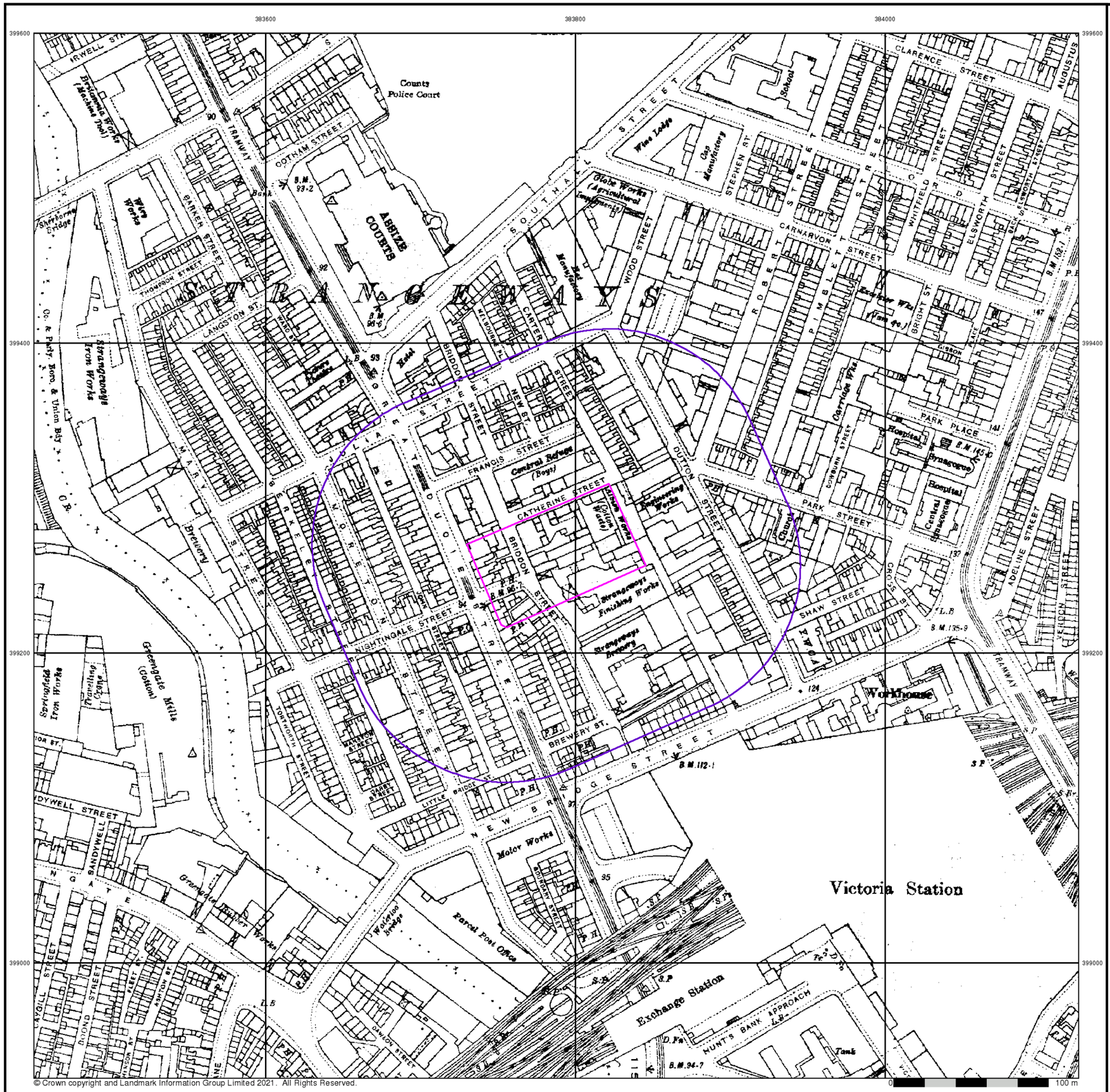
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 100 |

### Site Details

Great Ducie Street, MANCHESTER


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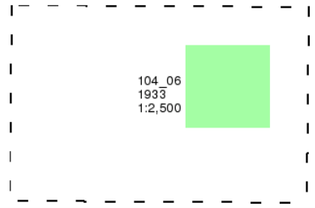
## Lancashire And Furness

## Published 1933

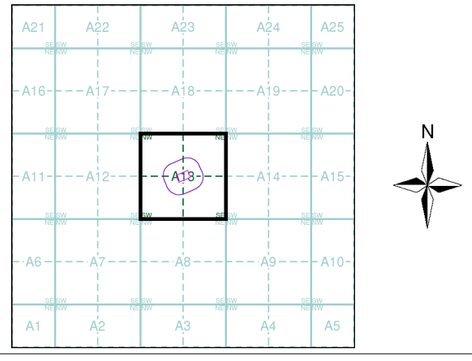
## Source map scale - 1:2,500

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



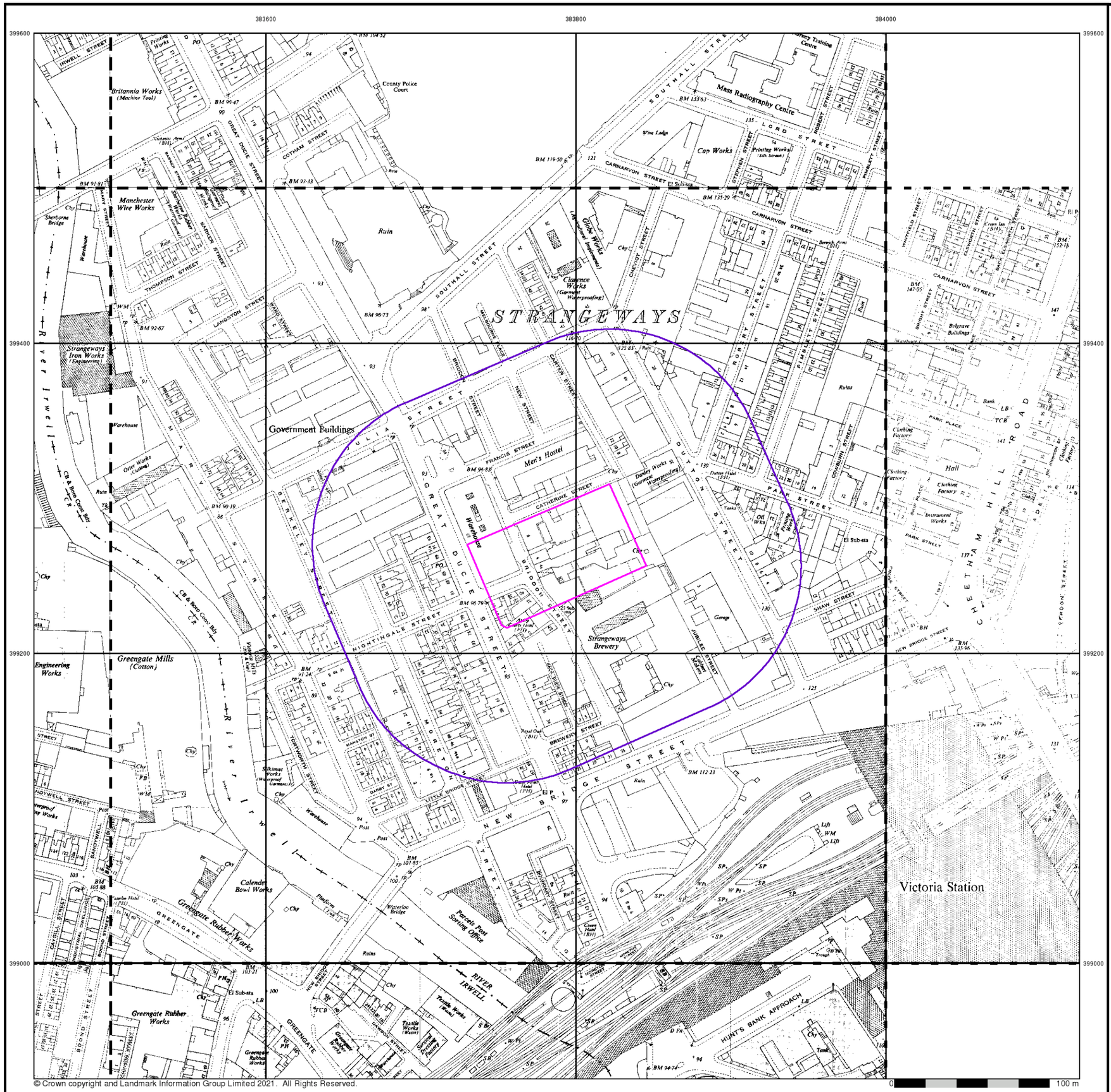

## Order Details

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| Order Number: | 286062703_1_1 |
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## Ordnance Survey Plan

## Published 1949 - 1951

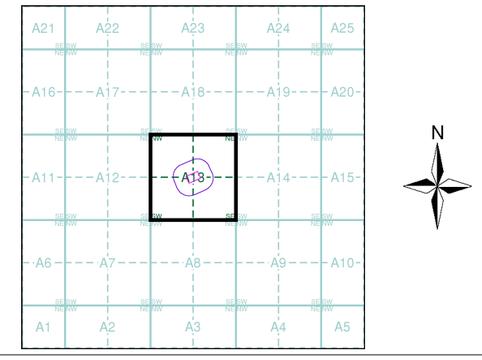
## Source map scale - 1:1,250

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)

| | | |
|---|---|---|
| SJ8399NW 1951 1:1,250 | SJ8399NE 1951 1:1,250 | |
| SJ8399SW 1951 1:1,250 | SJ8399SE 1951 1:1,250 | SJ8499SW 1949 1:1,250 |
| SJ8398NW 1949 1:1,250 | SJ8398NE 1949 1:1,250 | |

## Historical Map - Segment A13




## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 100 |

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## Ordnance Survey Plan

## Published 1951 - 1952

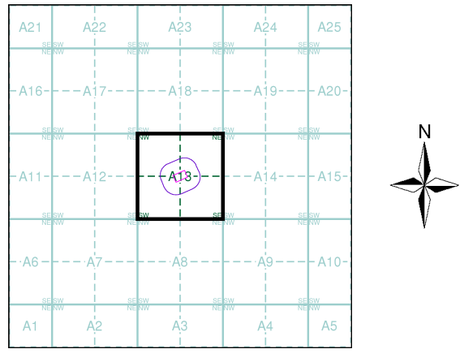
## Source map scale - 1:2,500

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)

| | |
|---|---|
| SJ8399 1952 1:2,500 | SJ8499 1951 1:2,500 |
| SJ8398 1951 1:2,500 | SJ8498 1951 1:2,500 |

## Historical Map - Segment A13



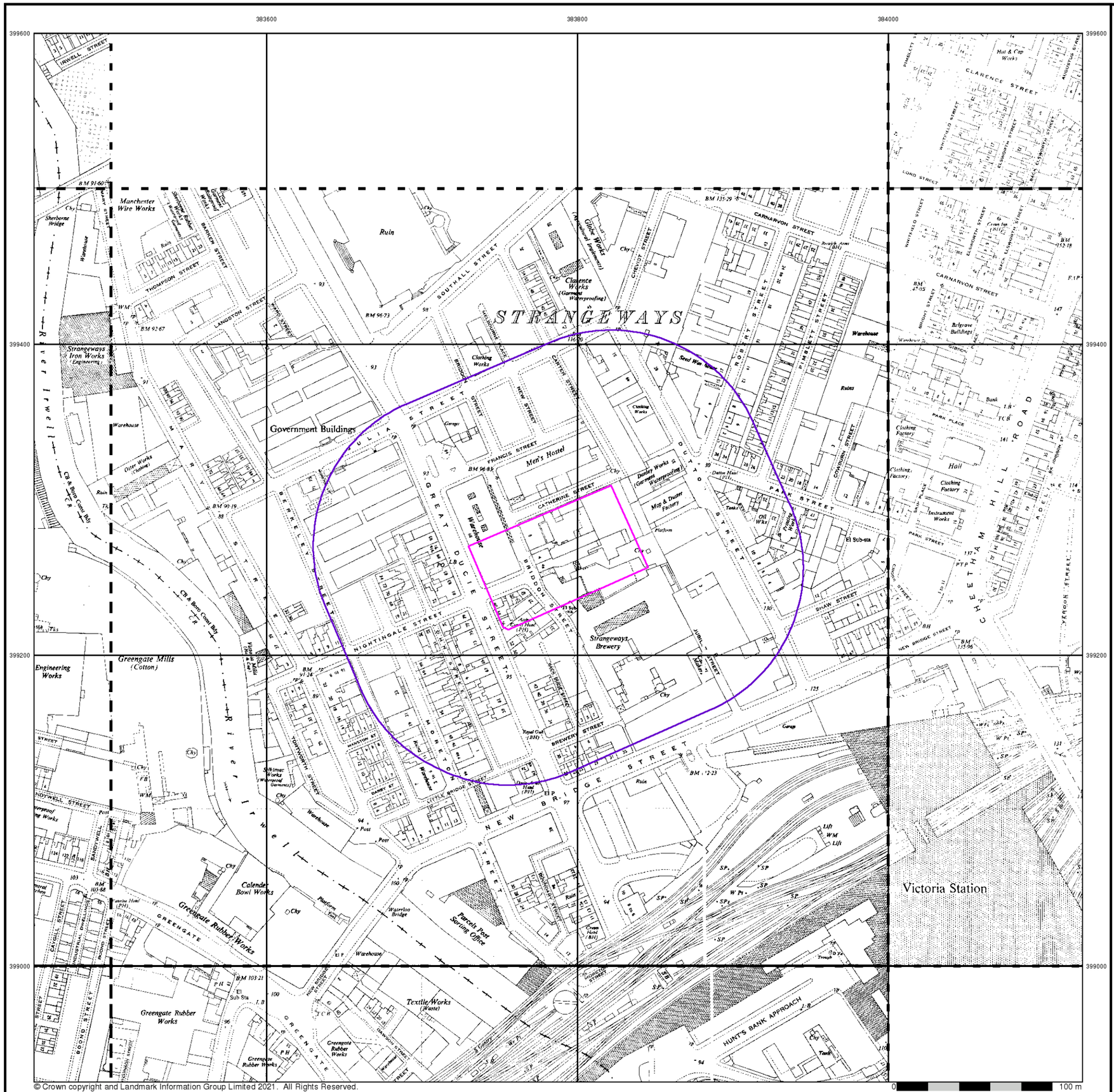

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| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
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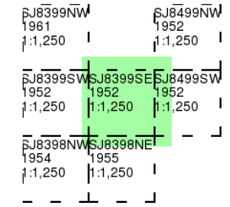
## Ordnance Survey Plan

**Published 1952 - 1961**

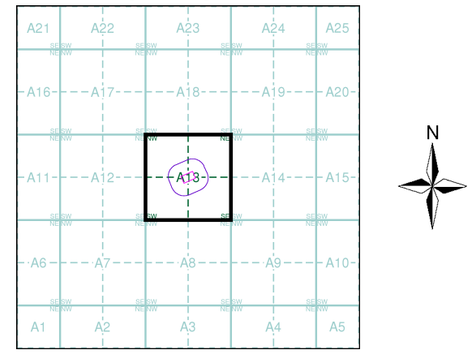
**Source map scale - 1:1,250**

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)




## Historical Map - Segment A13



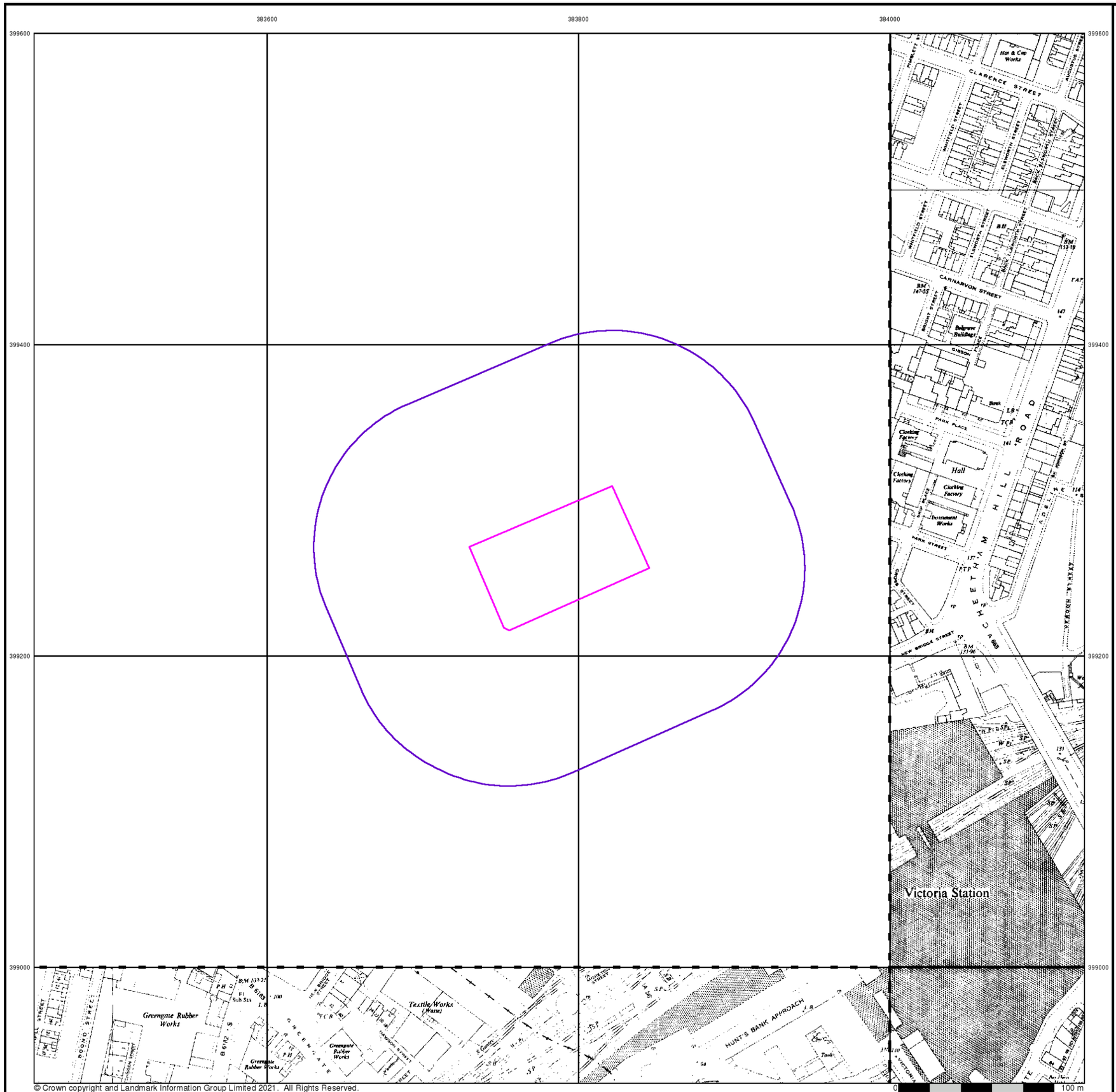

## Order Details

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| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
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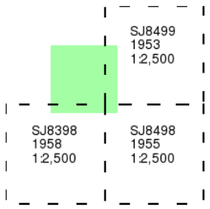
## Ordnance Survey Plan

**Published 1953 - 1958**

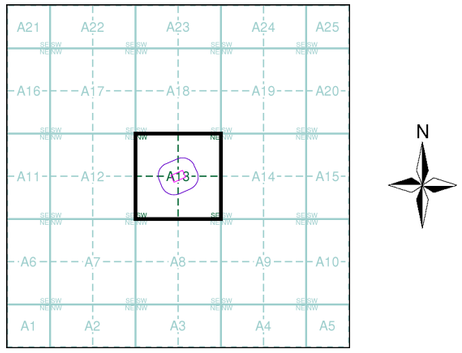
**Source map scale - 1:2,500**

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

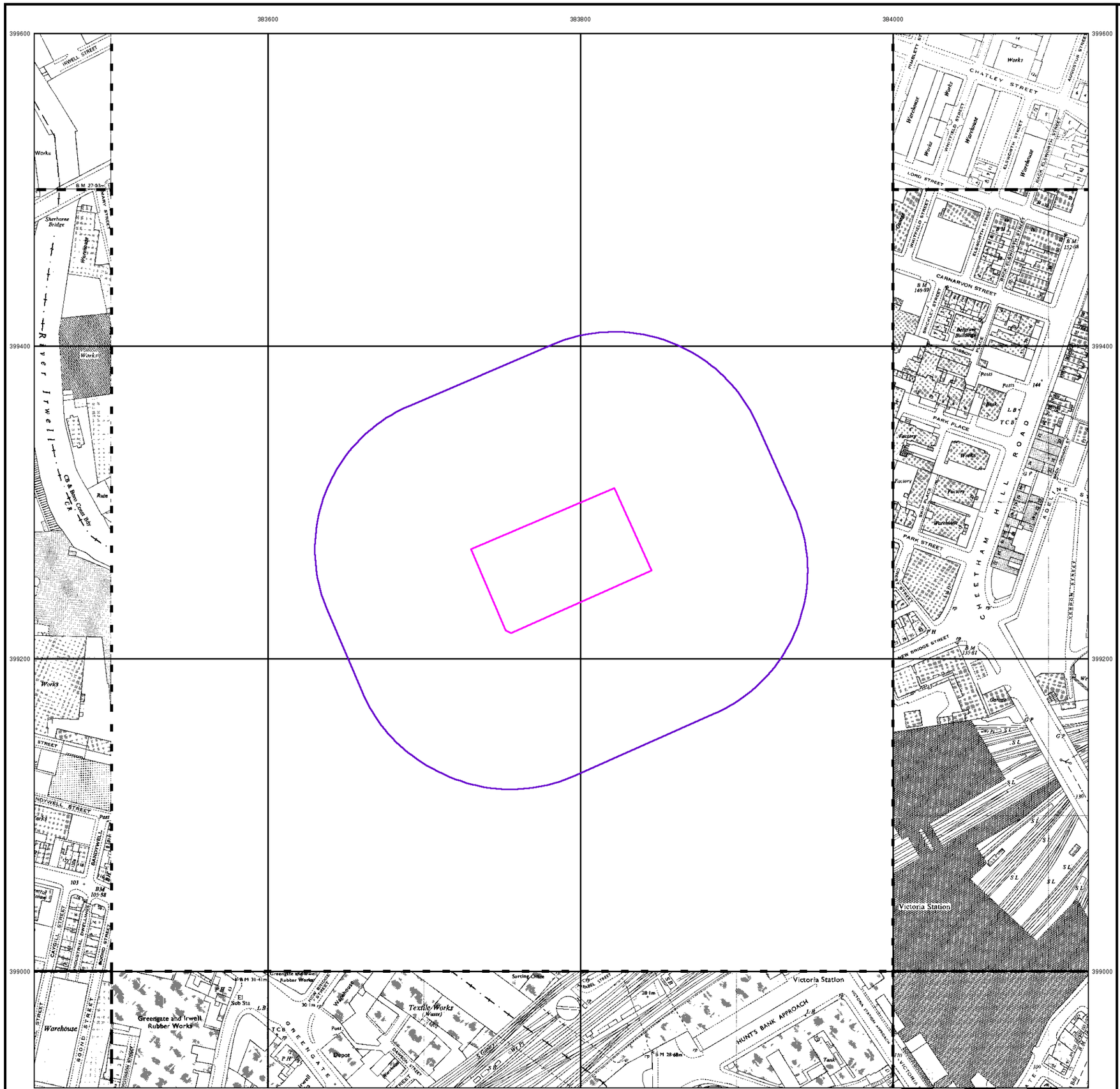
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
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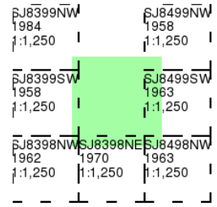
# Ordnance Survey Plan

## Published 1958 - 1984

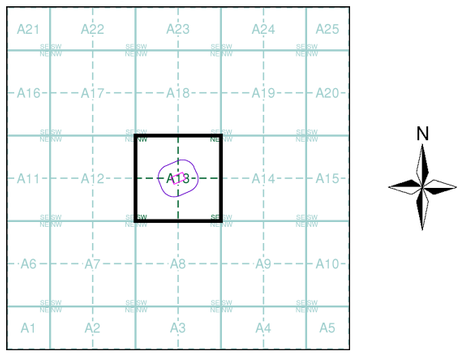
## Source map scale - 1:1,250

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)




## Historical Map - Segment A13

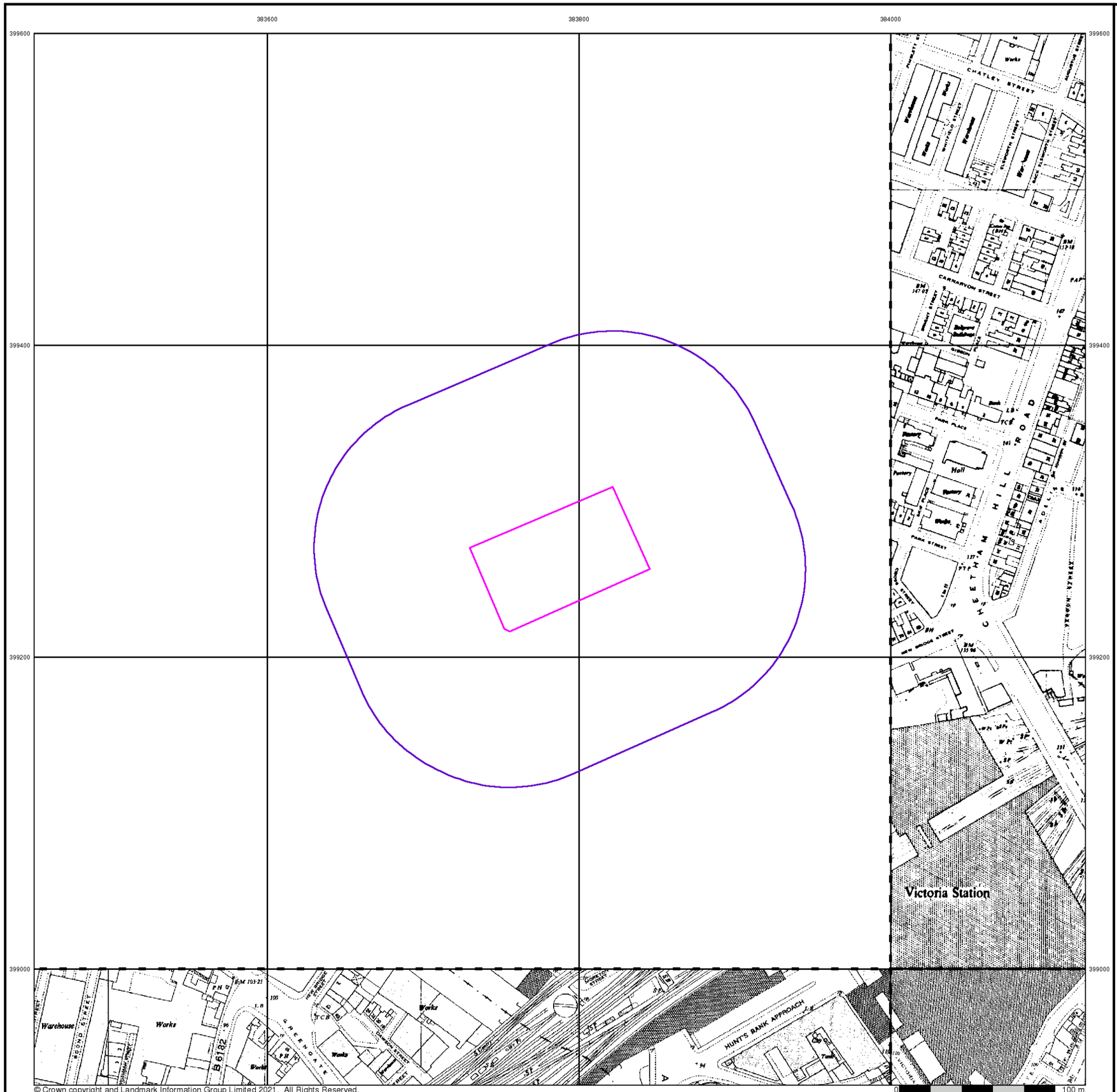



## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
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## Site Details

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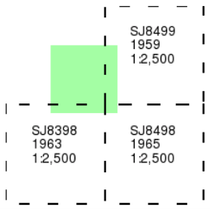
## Ordnance Survey Plan

## Published 1959 - 1965

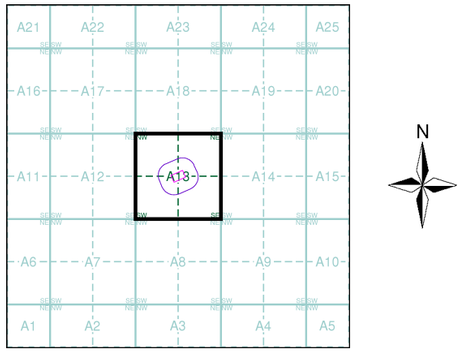
## Source map scale - 1:2,500

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



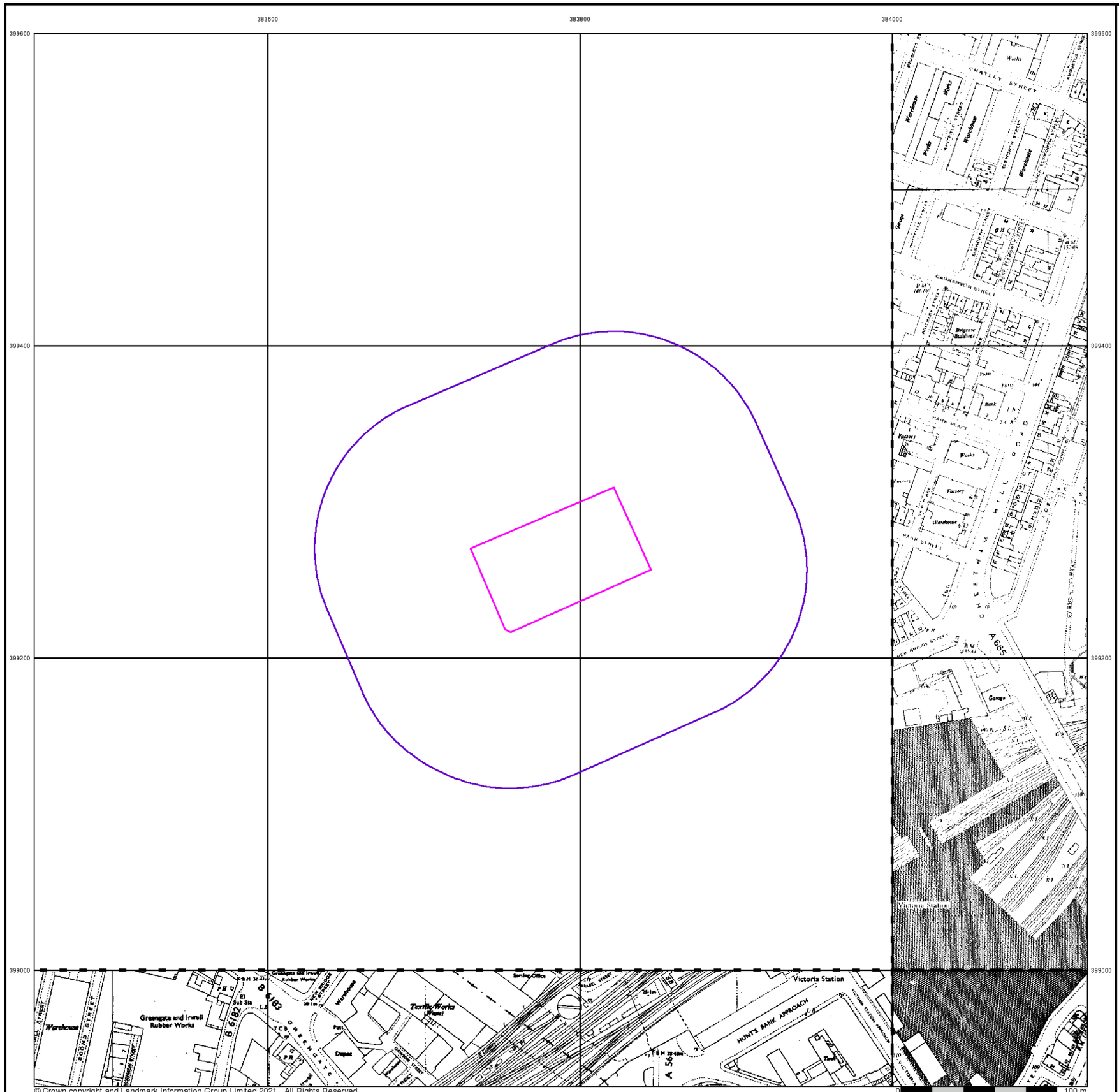

## Order Details

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|---|---|
| Order Number: | 286062703_1_1 |
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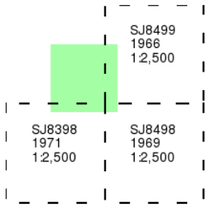

# Ordnance Survey Plan

## Published 1966 - 1971

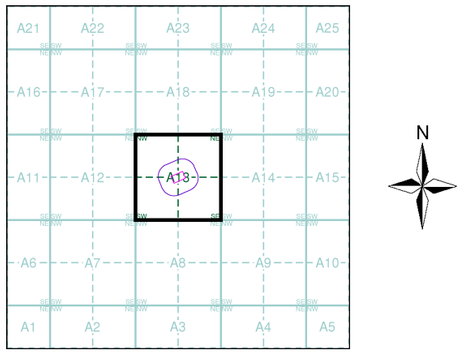
## Source map scale - 1:2,500

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## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

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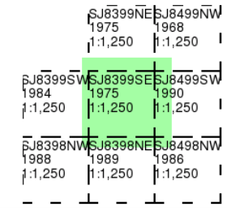
## Ordnance Survey Plan

## Published 1968 - 1990

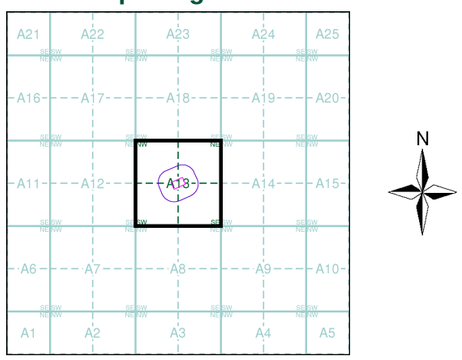
## Source map scale - 1:1,250

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)




## Historical Map - Segment A13



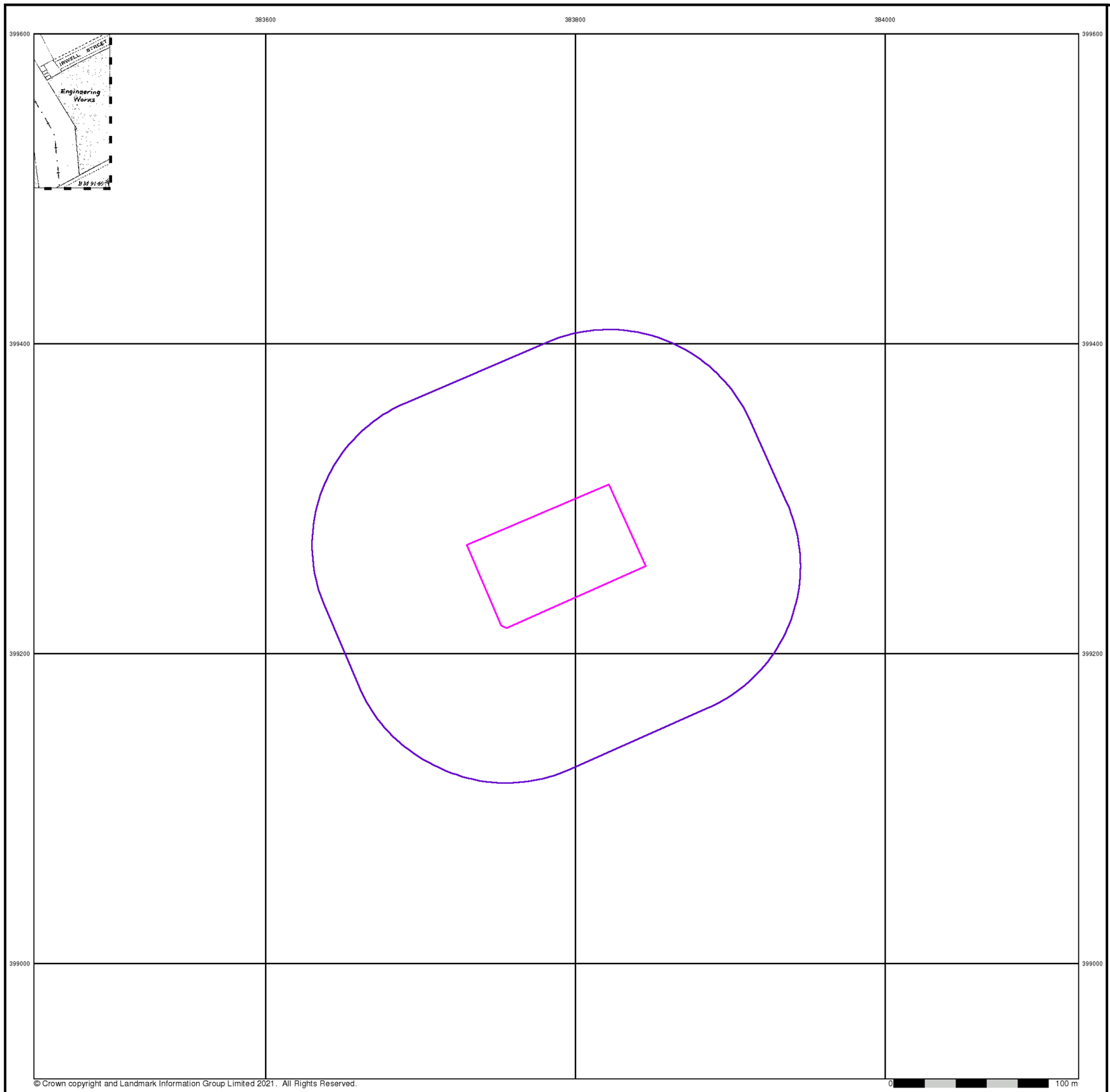

## Order Details

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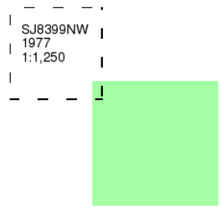
## Supply of Unpublished Survey Information

### Published 1977

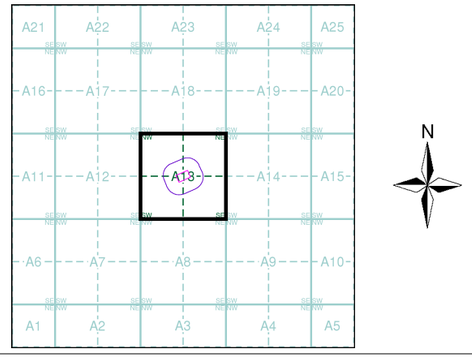
### Source map scale - 1:1,250

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)




## Historical Map - Segment A13




## Order Details

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## Additional SIMs

**Published 1978 - 1989**

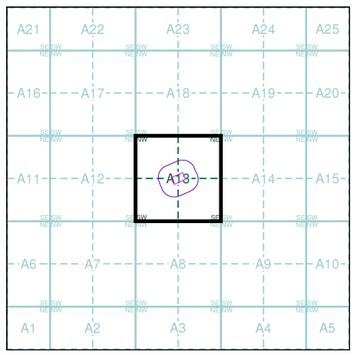
**Source map scale - 1:1,250**

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)

| | | |
|---|---|---|
| SJ8399NW 1978 1:1,250 | SJ8399NE 1989 1:1,250 | SJ8499NW 1978 1:1,250 |
| SJ8399SW 1978 1:1,250 | SJ8399SE 1987 1:1,250 | SJ8499SW 1984 1:1,250 |
| SJ8398NW 1980 1:1,250 | SJ8398NE 1979 1:1,250 | SJ8498NW 1980 1:1,250 |

## Historical Map - Segment A13




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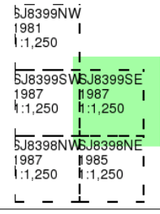
## Additional SIMs

**Published 1981 - 1987**

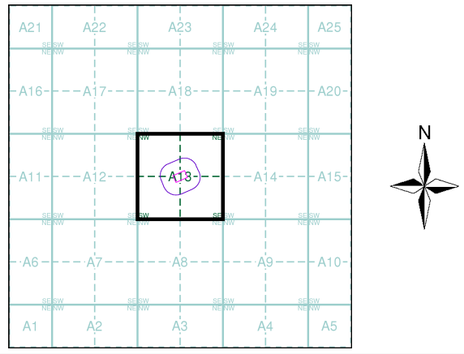
**Source map scale - 1:1,250**

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

## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 100 |

## Site Details

Great Ducie Street, MANCHESTER

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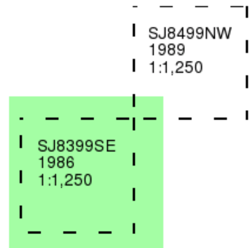
## Ordnance Survey Plan

**Published 1986 - 1989**

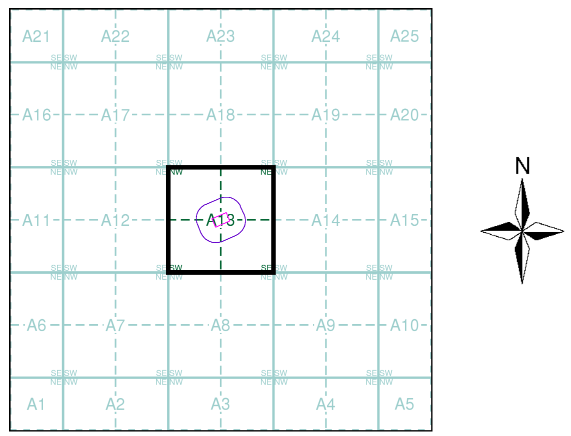
**Source map scale - 1:1,250**

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

## Map Name(s) and Date(s)




## Historical Map - Segment A13

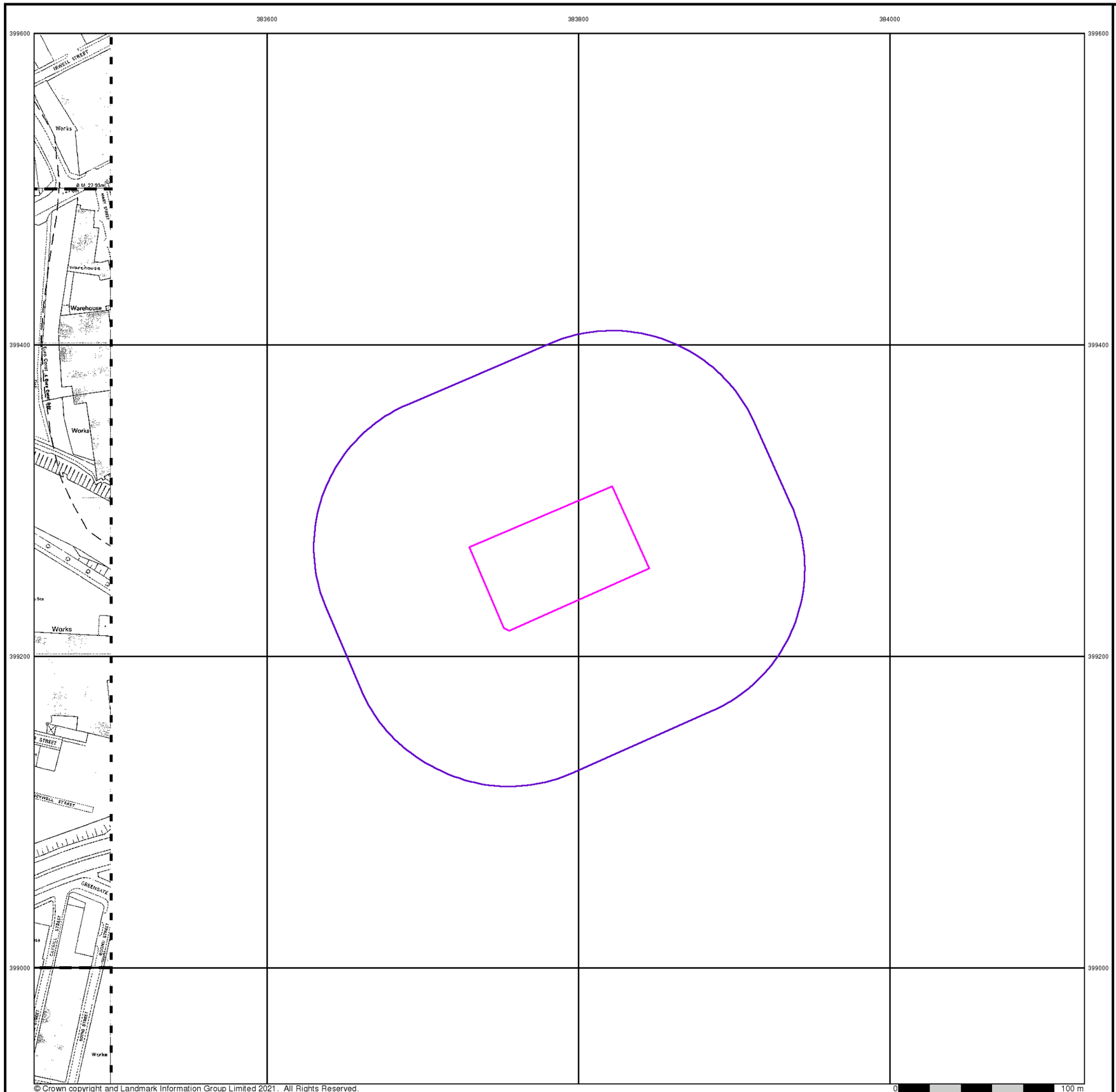



## Order Details

Order Number: 286062703_1_1
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## Site Details

Great Ducie Street, MANCHESTER




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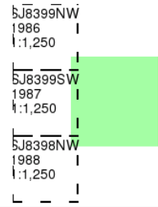
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**Published 1986 - 1988**

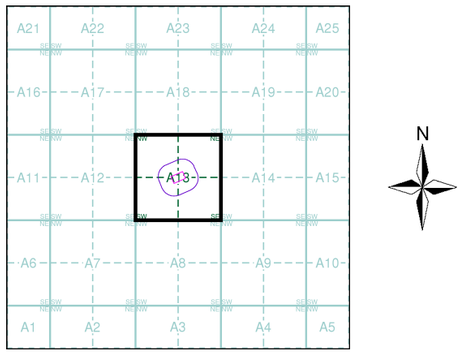
**Source map scale - 1:1,250**

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

## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

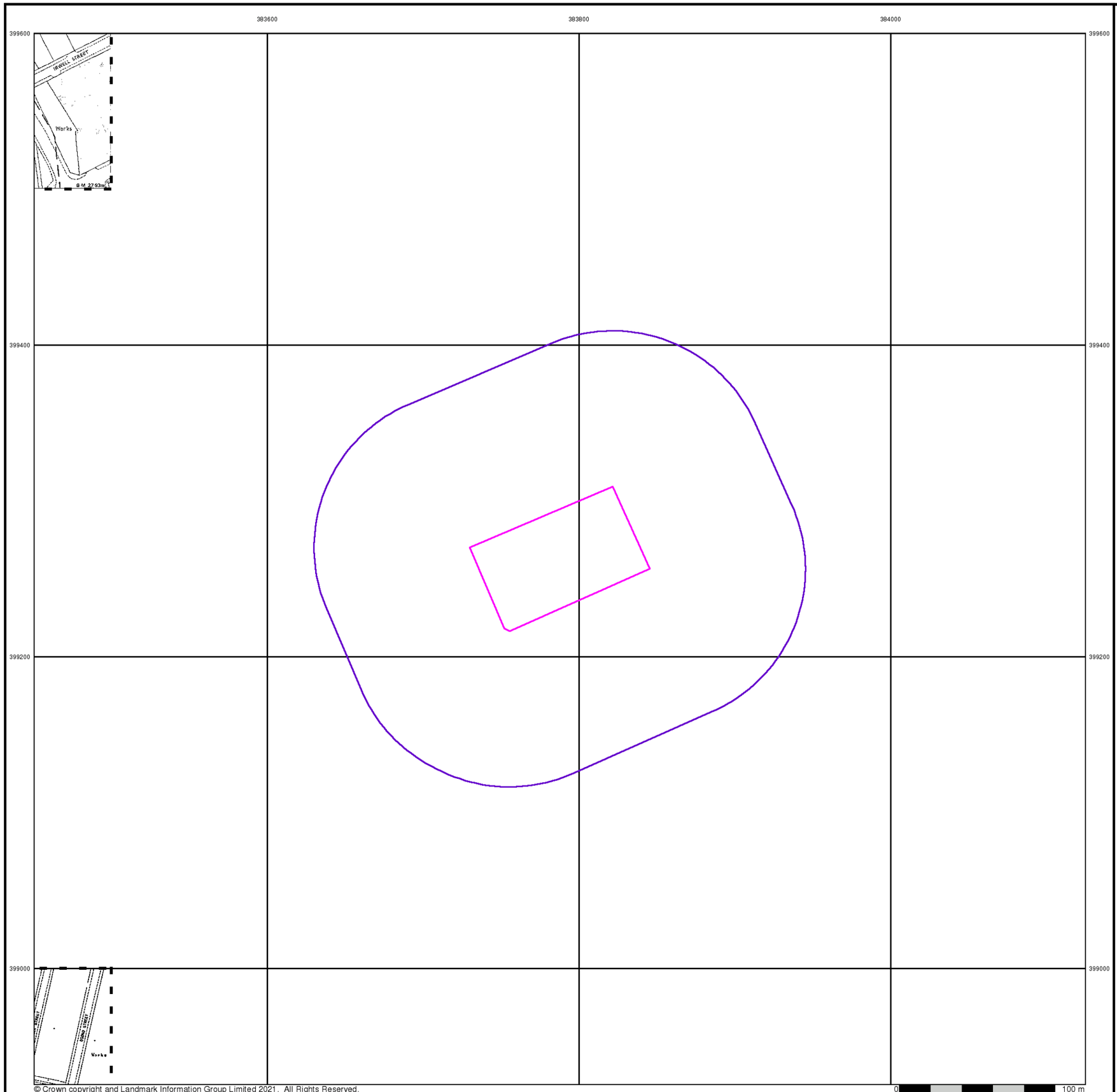
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
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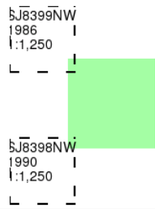
## Additional SIMs

**Published 1986 - 1990**

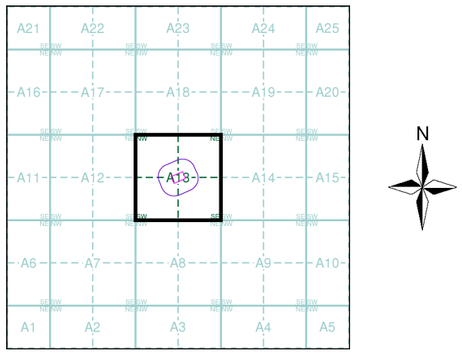
**Source map scale - 1:1,250**

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## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

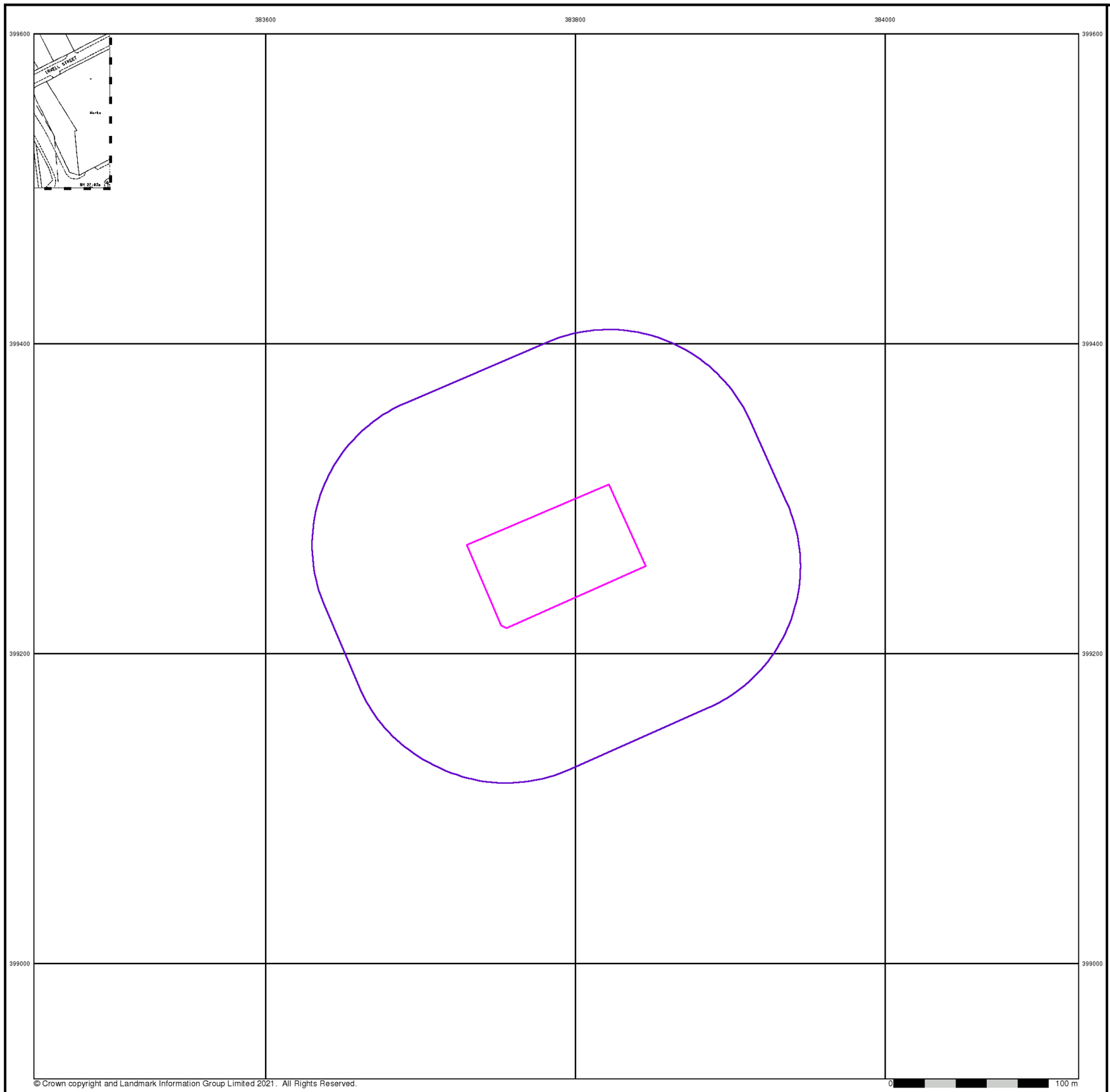
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 100 |

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# Additional SIMs

## Published 1991

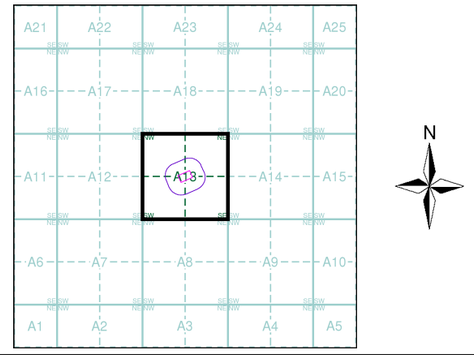
## Source map scale - 1:1,250

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)

SJ8399NW
1991
1:1,250

## Historical Map - Segment A13



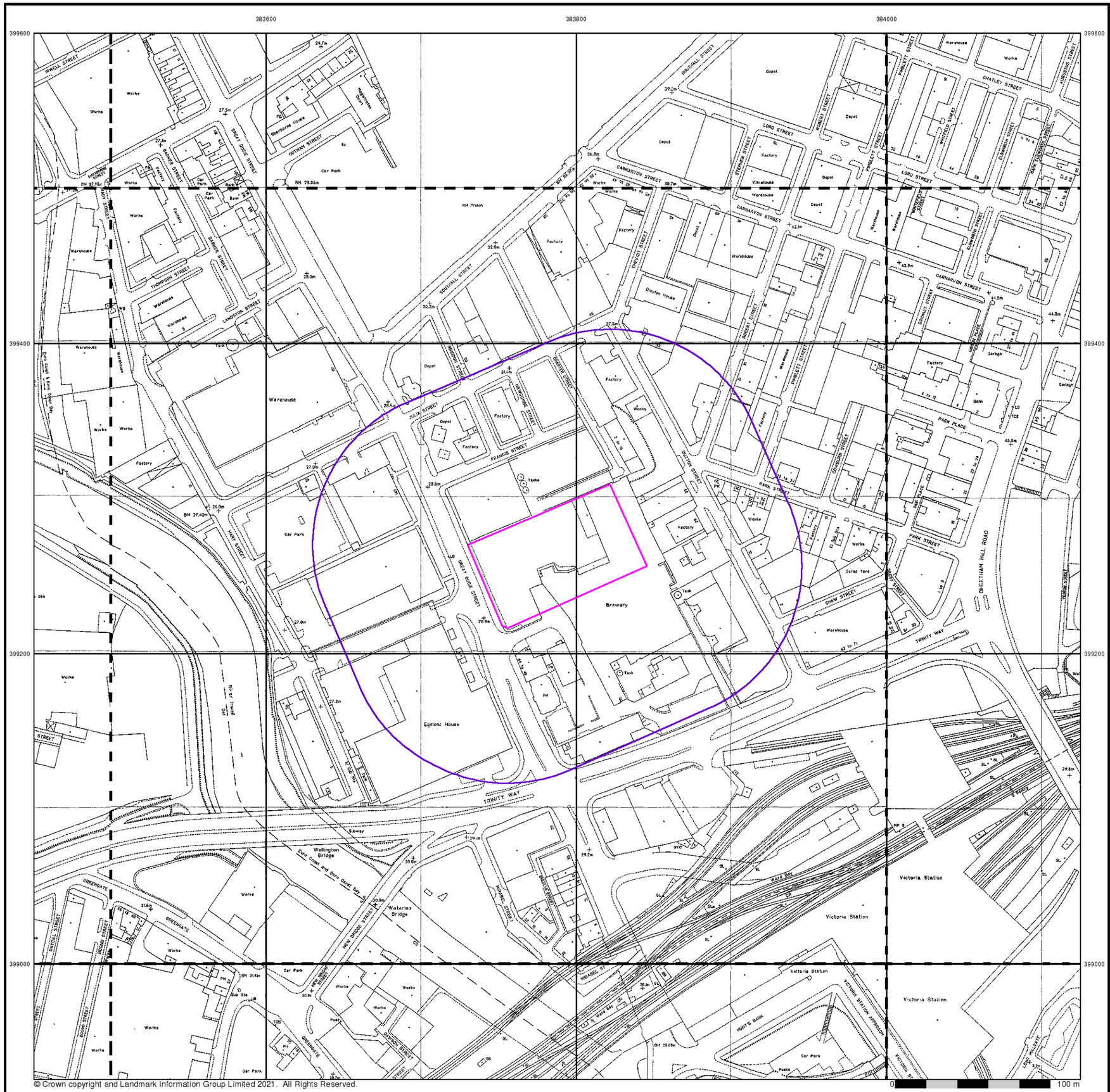

## Order Details

| | |
|---|---|
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| Customer Ref: | 15175 |
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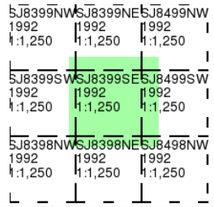
## Large-Scale National Grid Data

**Published 1992**

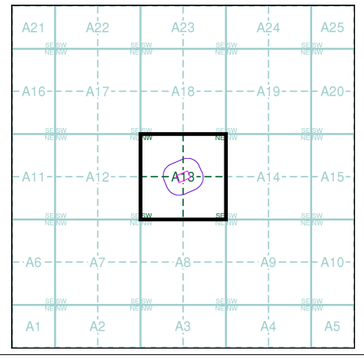
**Source map scale - 1:1,250**

'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)




## Historical Map - Segment A13



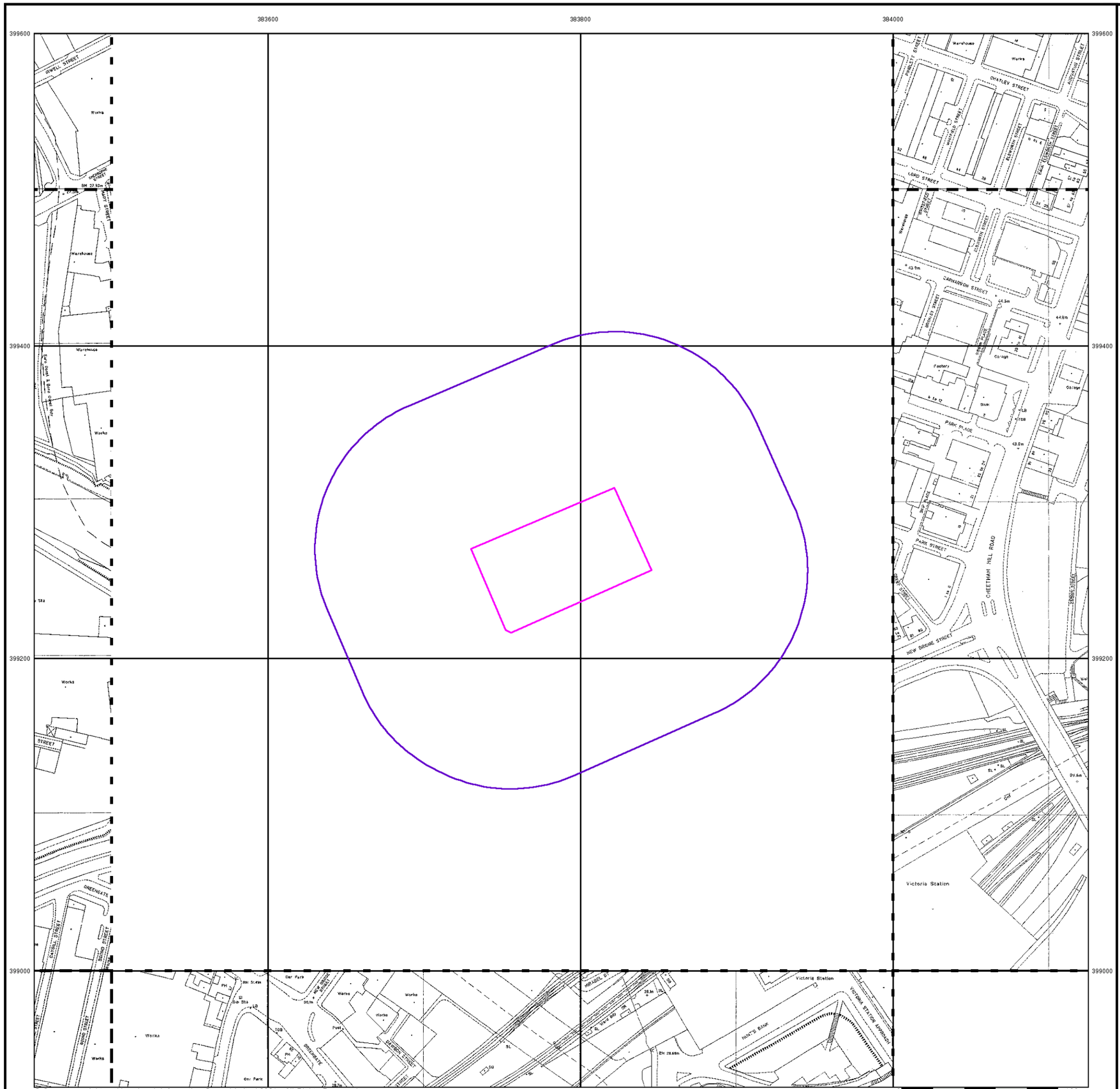

## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
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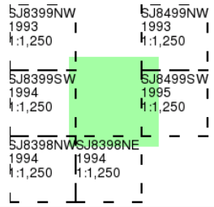
# Large-Scale National Grid Data

## Published 1993 - 1995

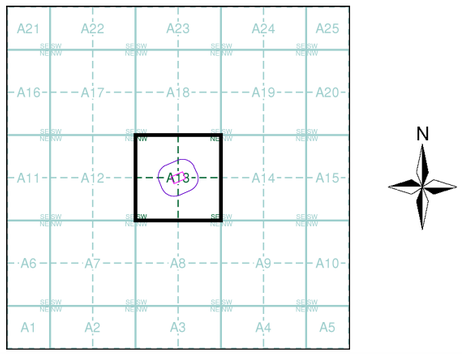
## Source map scale - 1:1,250

'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



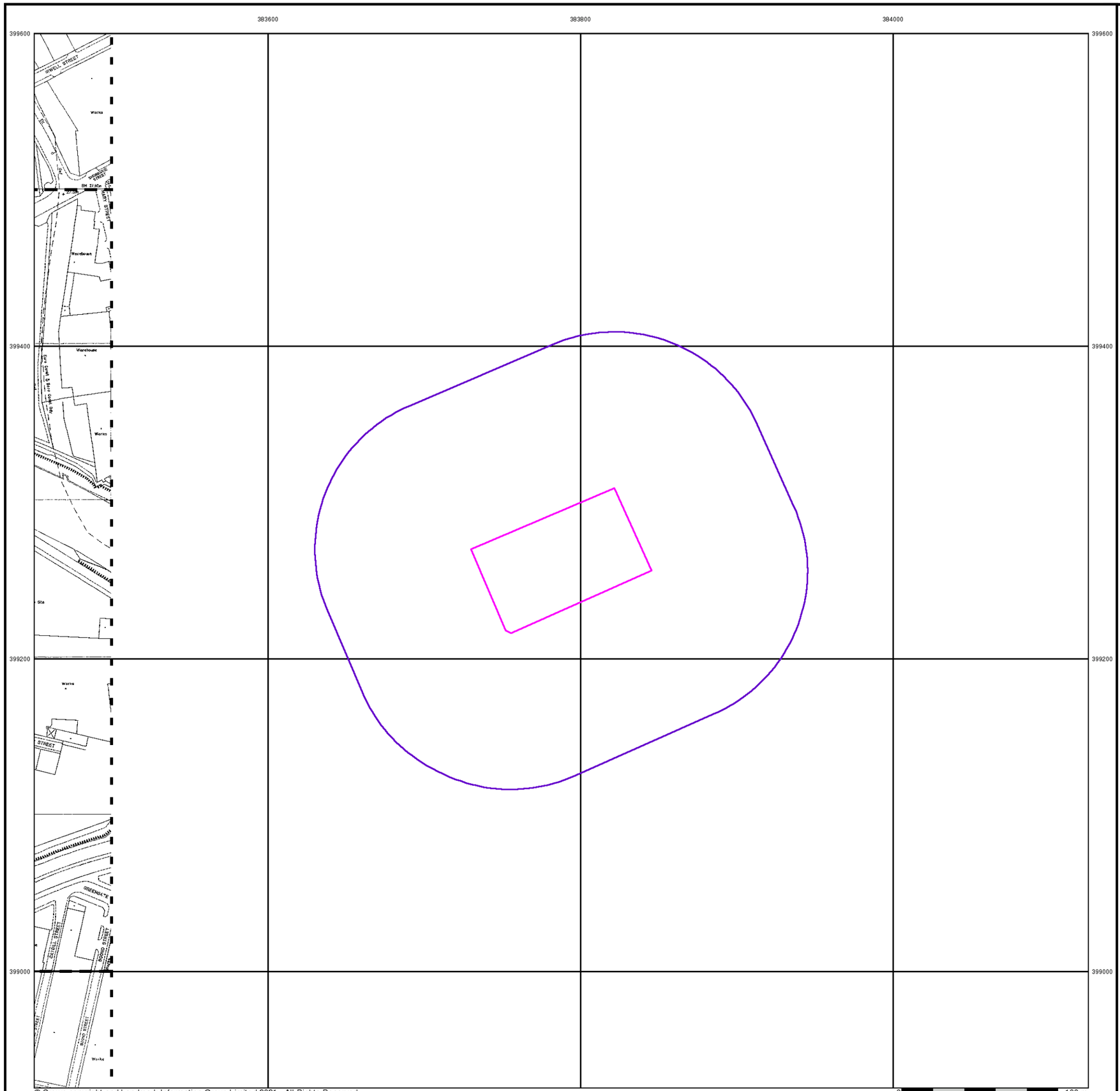

## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 100 |

## Site Details

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## Large-Scale National Grid Data

**Published 1994 - 1995**

**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.

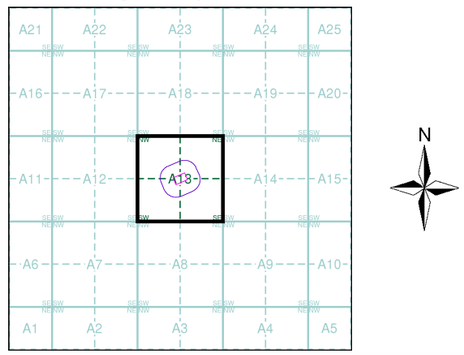
## Map Name(s) and Date(s)

SJ8399NW
1995
1:1,250

SJ8399SW
1994
1:1,250

SJ8398NW
1995
1:1,250

## Historical Map - Segment A13




## Order Details

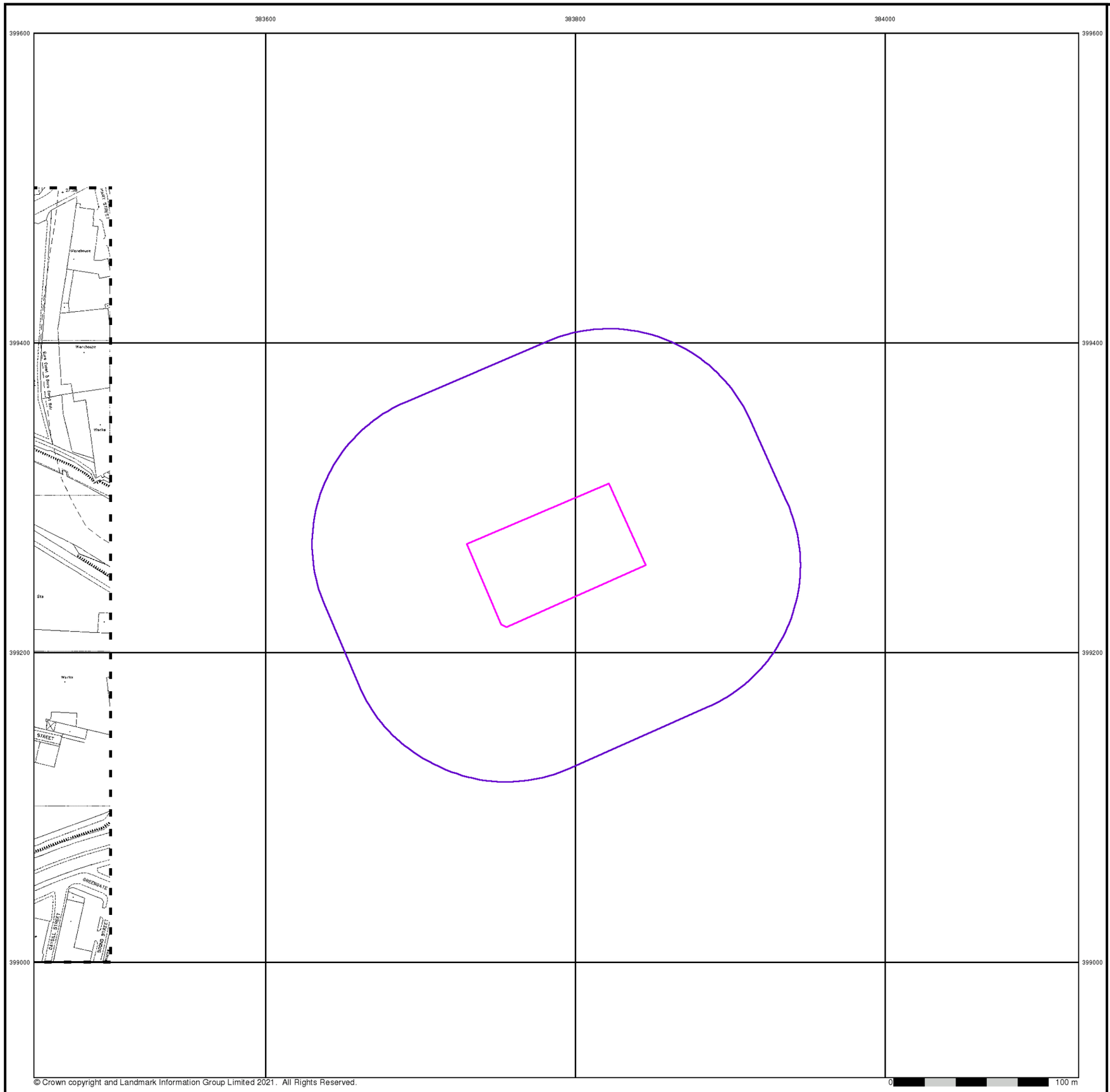
| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
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## Site Details

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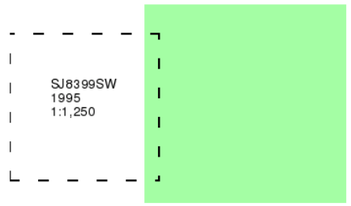
## Large-Scale National Grid Data

**Published 1995**

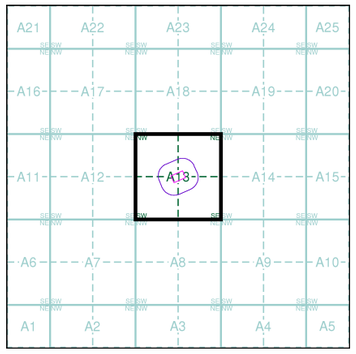
**Source map scale - 1:1,250**

'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

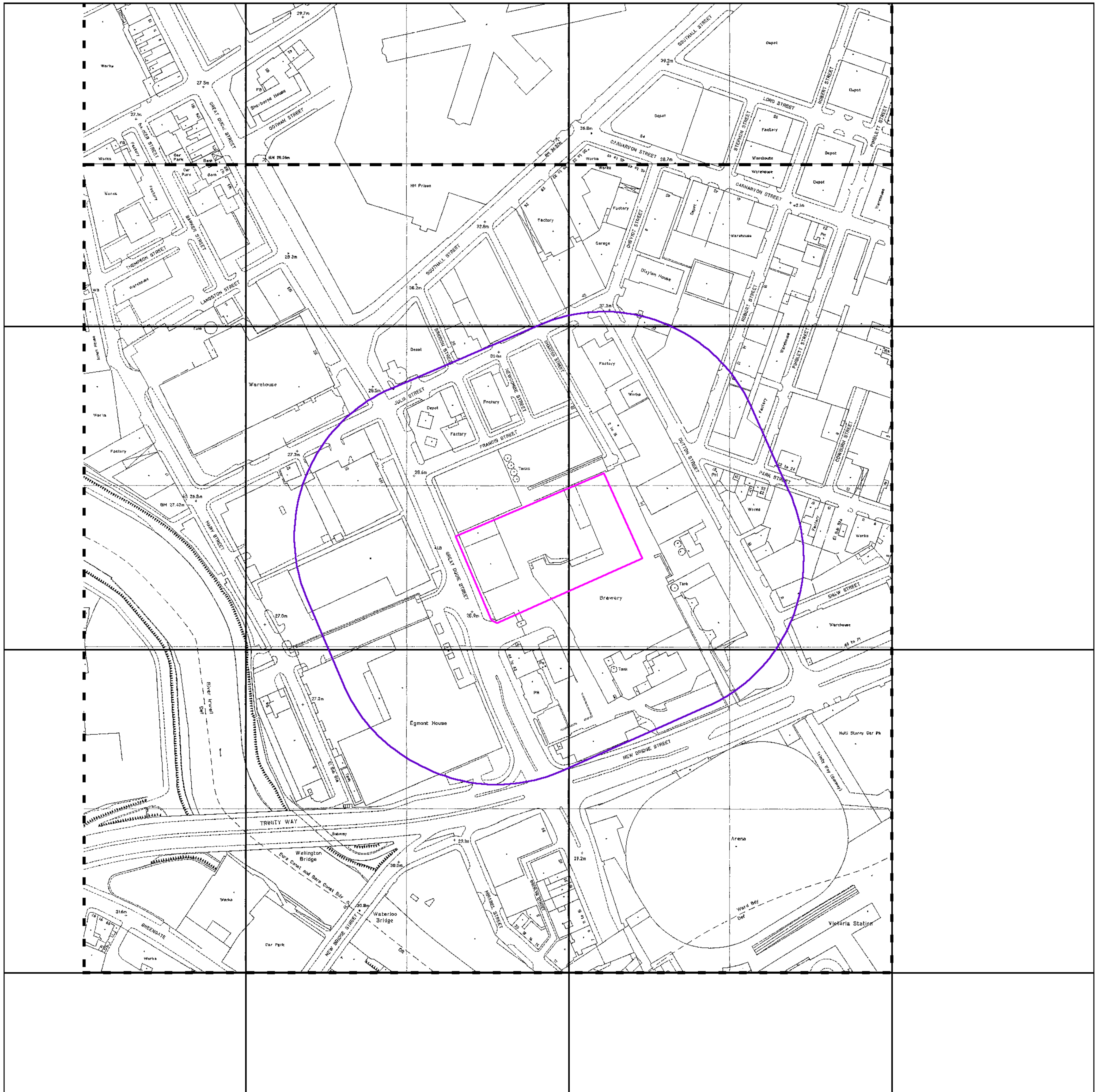
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
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| Slice: | A |
| Site Area (Ha): | 0.59 |
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## Large-Scale National Grid Data

## Published 1996

## Source map scale - 1:1,250

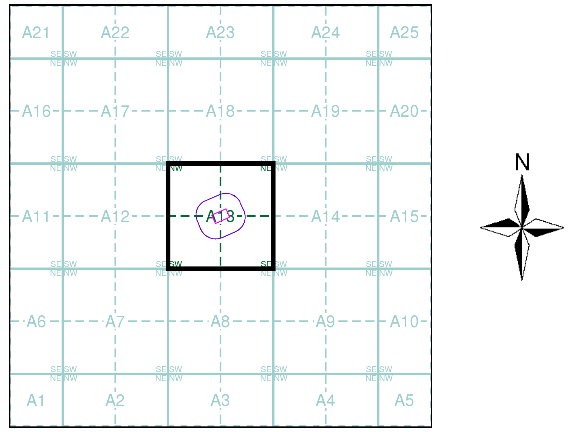
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic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

## Map Name(s) and Date(s)

SJ8399NE
1996
1:1,250

SJ8399SE
1996
1:1,250

## Historical Map - Segment A13




## Order Details

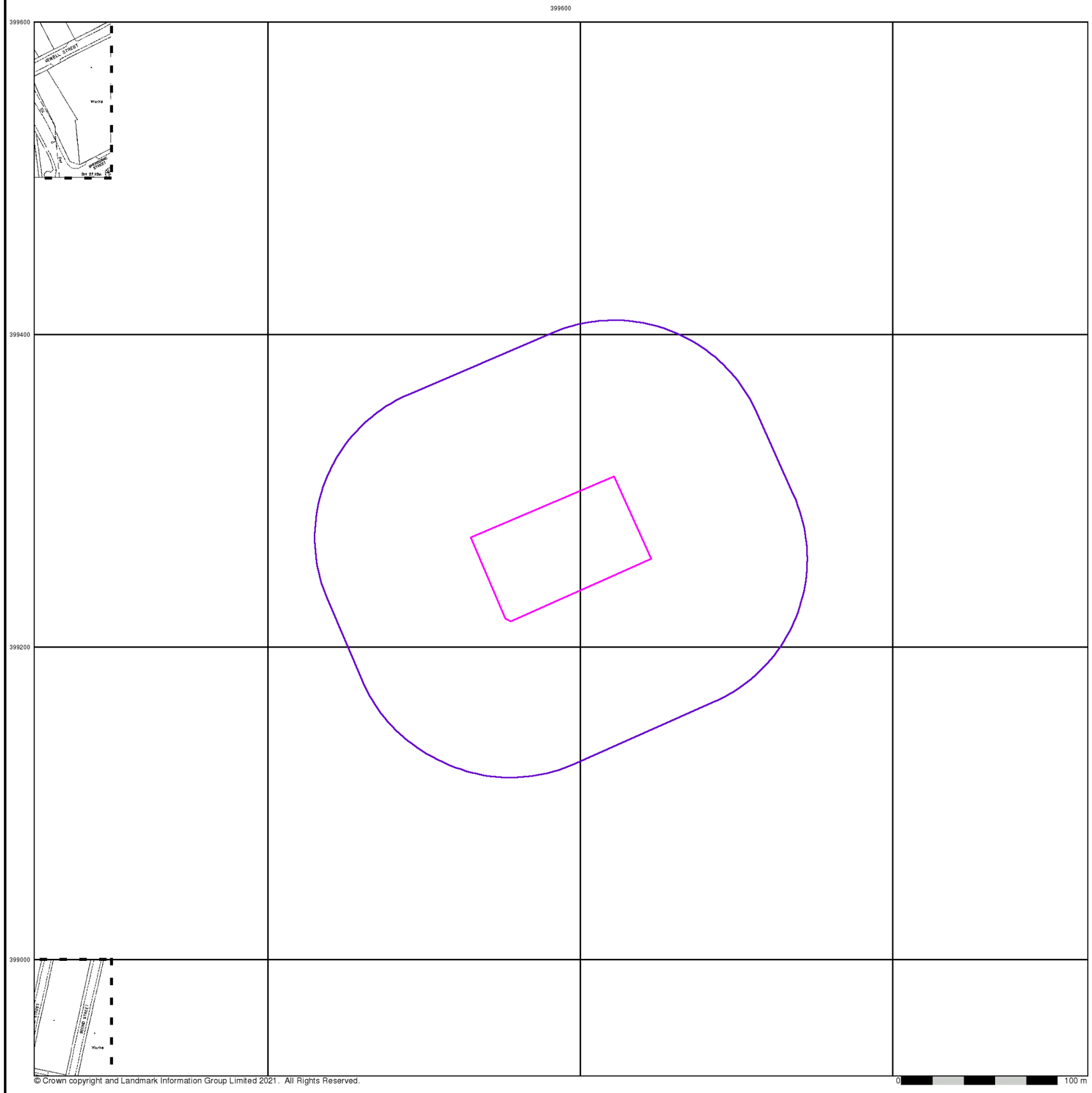
Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 100

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0 100 m

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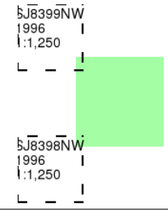
## Large-Scale National Grid Data

**Published 1996**

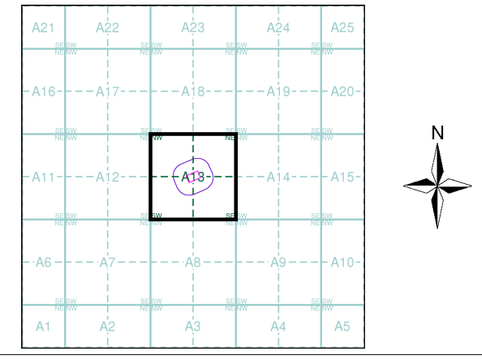
**Source map scale - 1:1,250**

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## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

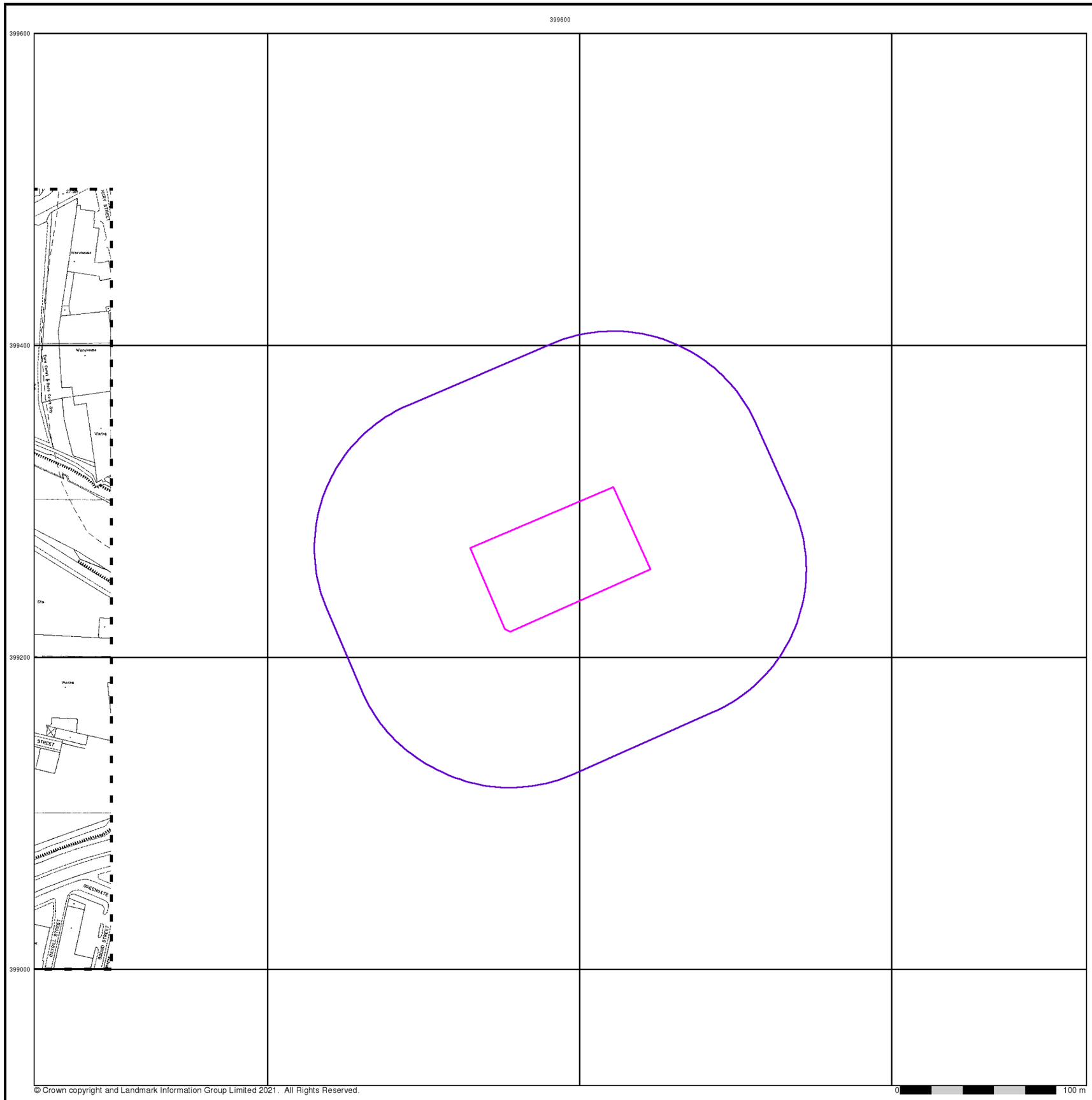
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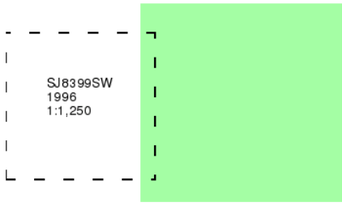
## Large-Scale National Grid Data

**Published 1996**

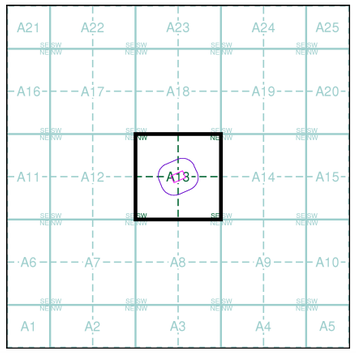
**Source map scale - 1:1,250**

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## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

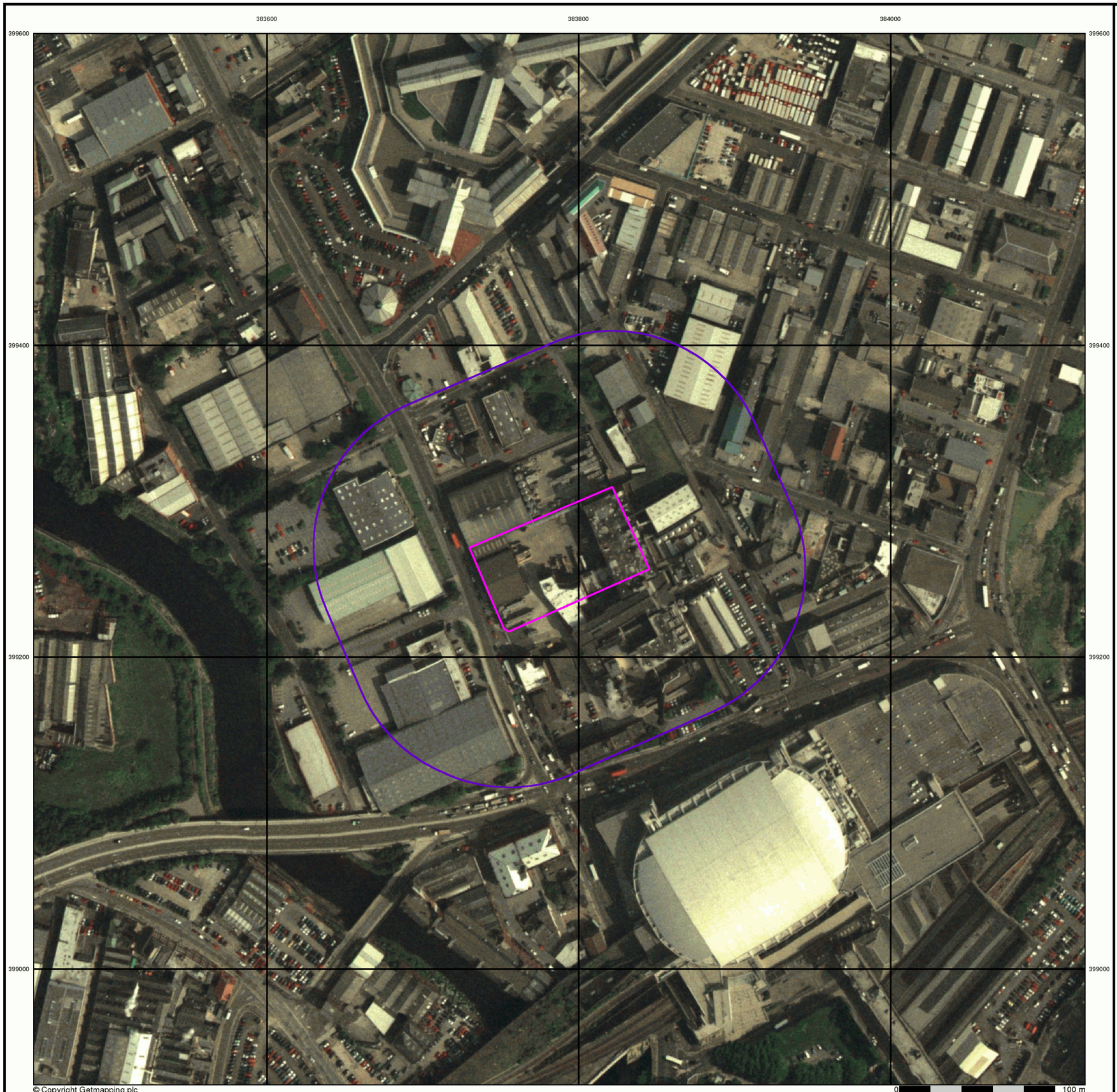
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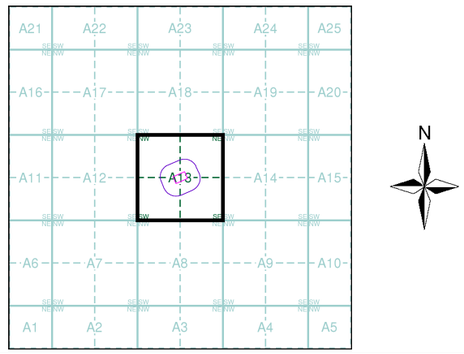



# Historical Aerial Photography

## 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: | 286062703_1_1 |
| Customer Ref: | 15175 |
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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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

## Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

| | | | |
|---|---|---|---|
| BP, BS | Boundary Post or Stone | Pol Sta | Police Station |
| Ch | Church | PO | Post Office |
| CH | Club House | PC | Public Convenience |
| F E Sta | Fire Engine Station | PH | Public House |
| FB | Foot Bridge | SB | Signal Box |
| Fn | Fountain | Spr | Spring |
| GP | Guide Post | TCB | Telephone Call Box |
| MP | Mile Post | TCP | Telephone Call Post |
| MS | Mile Stone | W | Well |

## 1:10,000 Raster Mapping

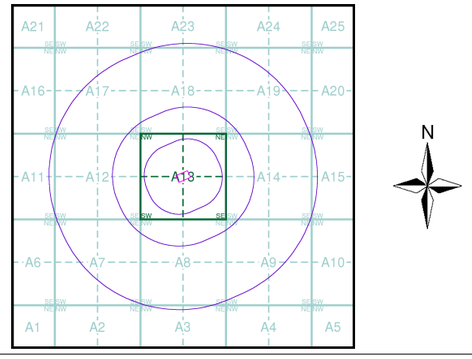
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

e3p

## Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|---|---|---|---|
| Lancashire And Furness | 1:10,560 | 1848 | 3 |
| Cheshire | 1:10,560 | 1882 | 4 |
| Lancashire And Furness | 1:10,560 | 1894 - 1896 | 5 |
| Lancashire And Furness | 1:10,560 | 1909 | 6 |
| Lancashire And Furness | 1:10,560 | 1923 | 7 |
| Lancashire And Furness | 1:10,560 | 1931 - 1933 | 8 |
| Lancashire And Furness | 1:10,560 | 1938 | 9 |
| Ordnance Survey Plan | 1:10,000 | 1956 | 10 |
| Ordnance Survey Plan | 1:10,000 | 1966 - 1968 | 11 |
| Ordnance Survey Plan | 1:10,000 | 1972 - 1979 | 12 |
| Manchester | 1:25,000 | 1975 | 13 |
| Ordnance Survey Plan | 1:10,000 | 1980 - 1986 | 14 |
| Ordnance Survey Plan | 1:10,000 | 1985 - 1987 | 15 |
| Ordnance Survey Plan | 1:10,000 | 1989 | 16 |
| Ordnance Survey Plan | 1:10,000 | 1990 - 1994 | 17 |
| 10K Raster Mapping | 1:10,000 | 1999 | 18 |
| 10K Raster Mapping | 1:10,000 | 2006 | 19 |
| VectorMap Local | 1:10,000 | 2021 | 20 |

## Historical Map - Slice A




## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 1000

## Site Details

Great Ducie Street, MANCHESTER


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# Russian Military Mapping Legends

## 1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 — Values for prominent elevations

186.0 — Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 — Velocity of the current, width of river bed, depth of river

Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

### Russian Alphabet (For reference and phonetic interpretation of map text)

| | | | |
|---|---|---|---|
| А а (A) | З з (Z) | П п (P) | Ч ч (CH) |
| Б б (B) | И и (I) | Р р (R) | Ш ш (SH) |
| В в (V) | Й й (Y) | С с (S) | Щ щ (SHCH) |
| Г г (G) | К к (K) | Т т (T) | ъ (–) |
| Д д (D) | Л л (L) | У у (U) | ы (Y) |
| Е е (E) | М м (M) | Ф ф (F) | ь (') |
| Ё ё (YO) | Н н (N) | Х х (KH) | Э э (E) |
| Ж ж (ZH) | О о (O) | Ц ц (TS) | Ю ю (YU or IU) |
| | | | Я я (YA or IA) |

## 1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Coniferous
- Deciduous
- Mixed
- Scrub

## Key to Numbers on Mapping

### SJ89_Manchester

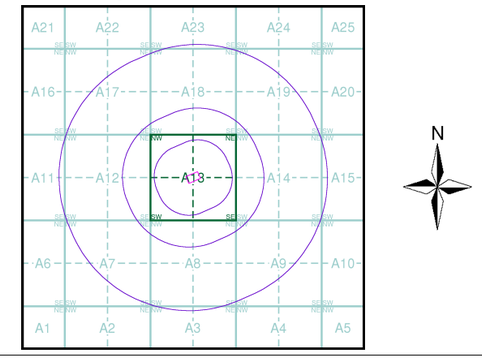
| No. | Description |
|---|---|
| 62 | Factory (Gas) |
| 63 | Factory (Gas) |
| 93 | Factory (Metal Works) |
| 157 | Police Station/Headquarters |
| 168 | Post Office |
| 211 | Council/Government Buildings/Courts |
| 216 | Prison |
| 248 | Power Station (Electric) |

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## Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|---|---|---|---|
| Lancashire And Furness | 1:10,560 | 1848 | 3 |
| Cheshire | 1:10,560 | 1882 | 4 |
| Lancashire And Furness | 1:10,560 | 1894 - 1896 | 5 |
| Lancashire And Furness | 1:10,560 | 1909 | 6 |
| Lancashire And Furness | 1:10,560 | 1923 | 7 |
| Lancashire And Furness | 1:10,560 | 1931 - 1933 | 8 |
| Lancashire And Furness | 1:10,560 | 1938 | 9 |
| Ordnance Survey Plan | 1:10,000 | 1956 | 10 |
| Ordnance Survey Plan | 1:10,000 | 1966 - 1968 | 11 |
| Ordnance Survey Plan | 1:10,000 | 1972 - 1979 | 12 |
| Manchester | 1:25,000 | 1975 | 13 |
| Ordnance Survey Plan | 1:10,000 | 1980 - 1986 | 14 |
| Ordnance Survey Plan | 1:10,000 | 1985 - 1987 | 15 |
| Ordnance Survey Plan | 1:10,000 | 1989 | 16 |
| Ordnance Survey Plan | 1:10,000 | 1990 - 1994 | 17 |
| 10K Raster Mapping | 1:10,000 | 1999 | 18 |
| 10K Raster Mapping | 1:10,000 | 2006 | 19 |
| VectorMap Local | 1:10,000 | 2021 | 20 |

## Russian Map - Slice A




## Order Details

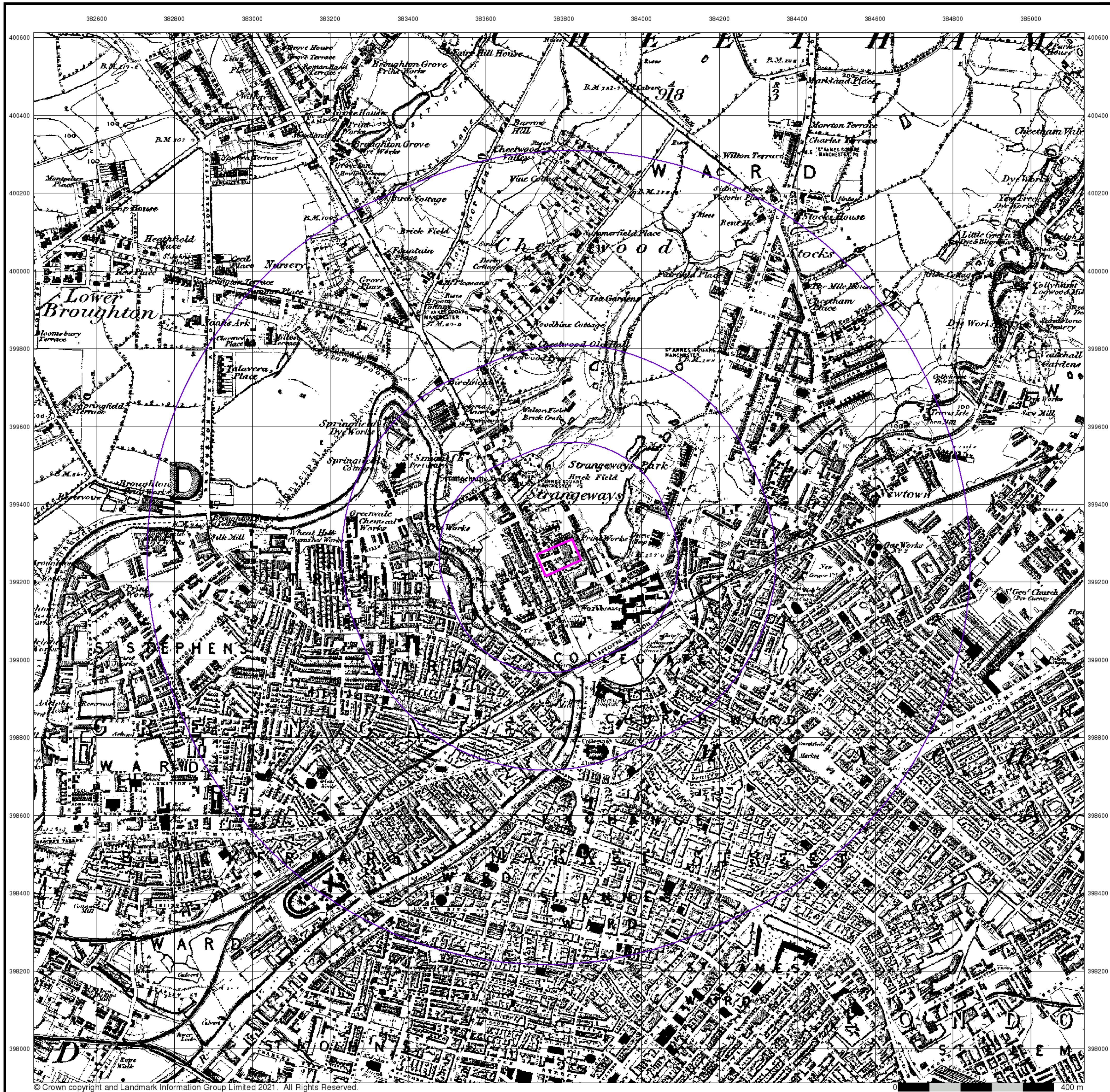
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| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

## Site Details

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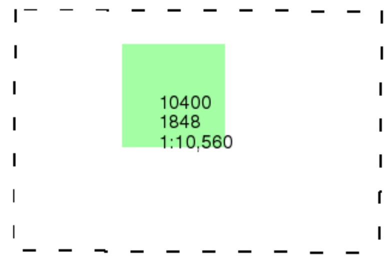
# Lancashire And Furness

## Published 1848

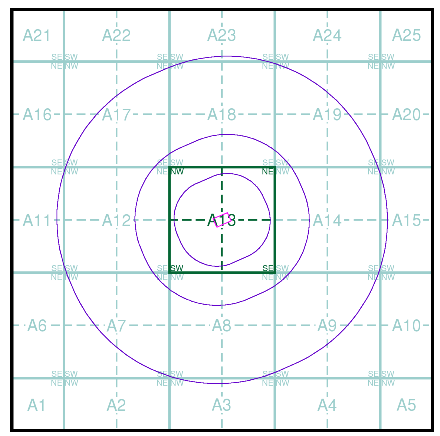
## Source map scale - 1:10,560

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

## Map Name(s) and Date(s)




## Historical Map - Slice A



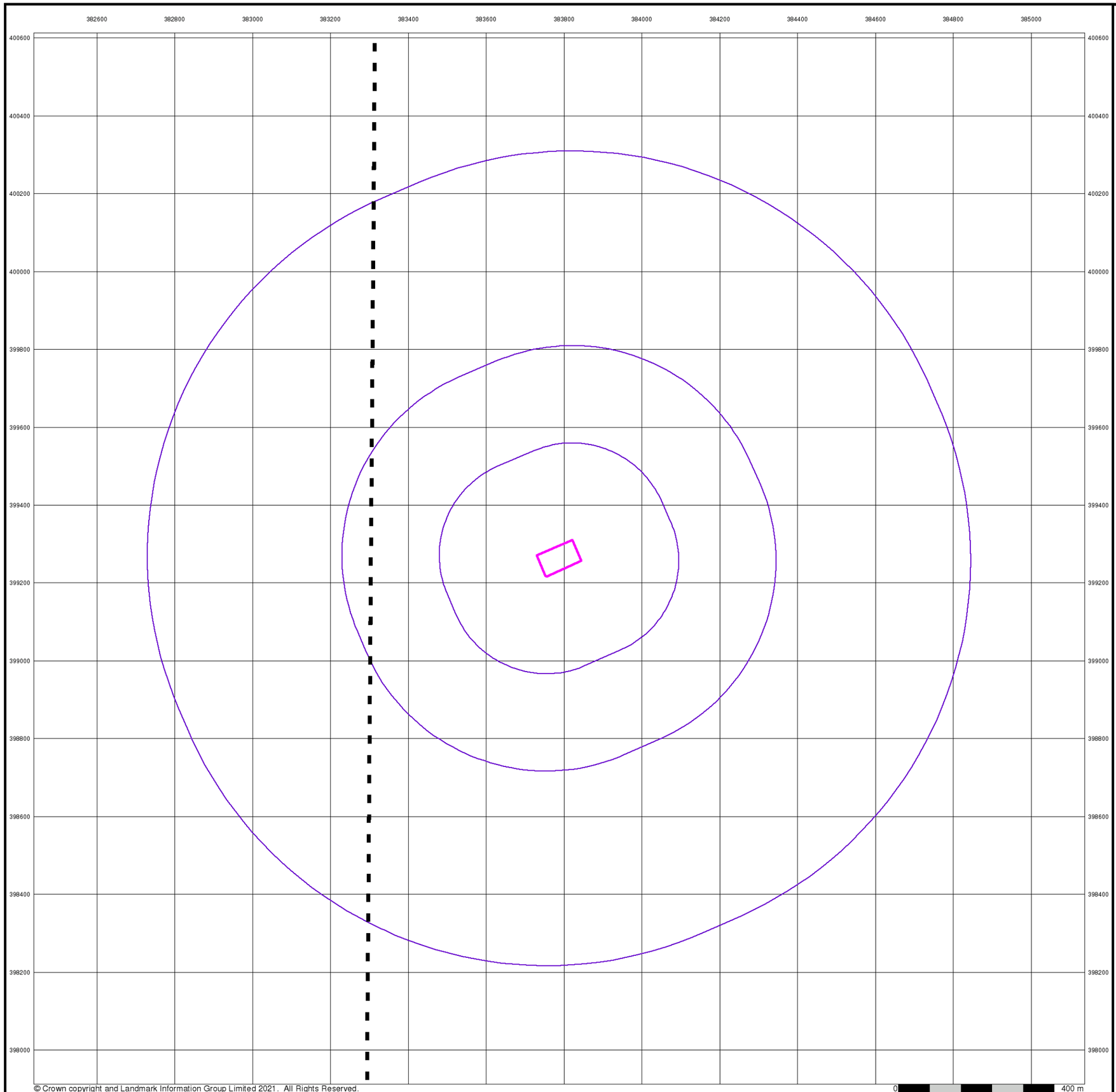

## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
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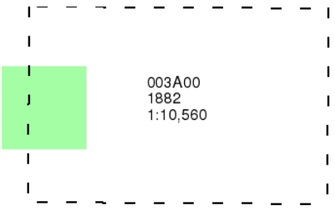
## Cheshire

## Published 1882

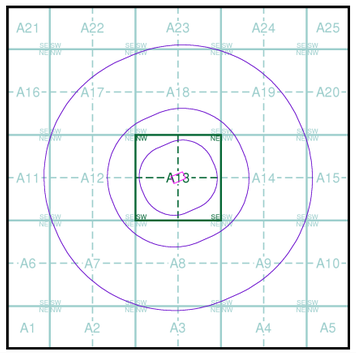
## Source map scale - 1:10,560

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

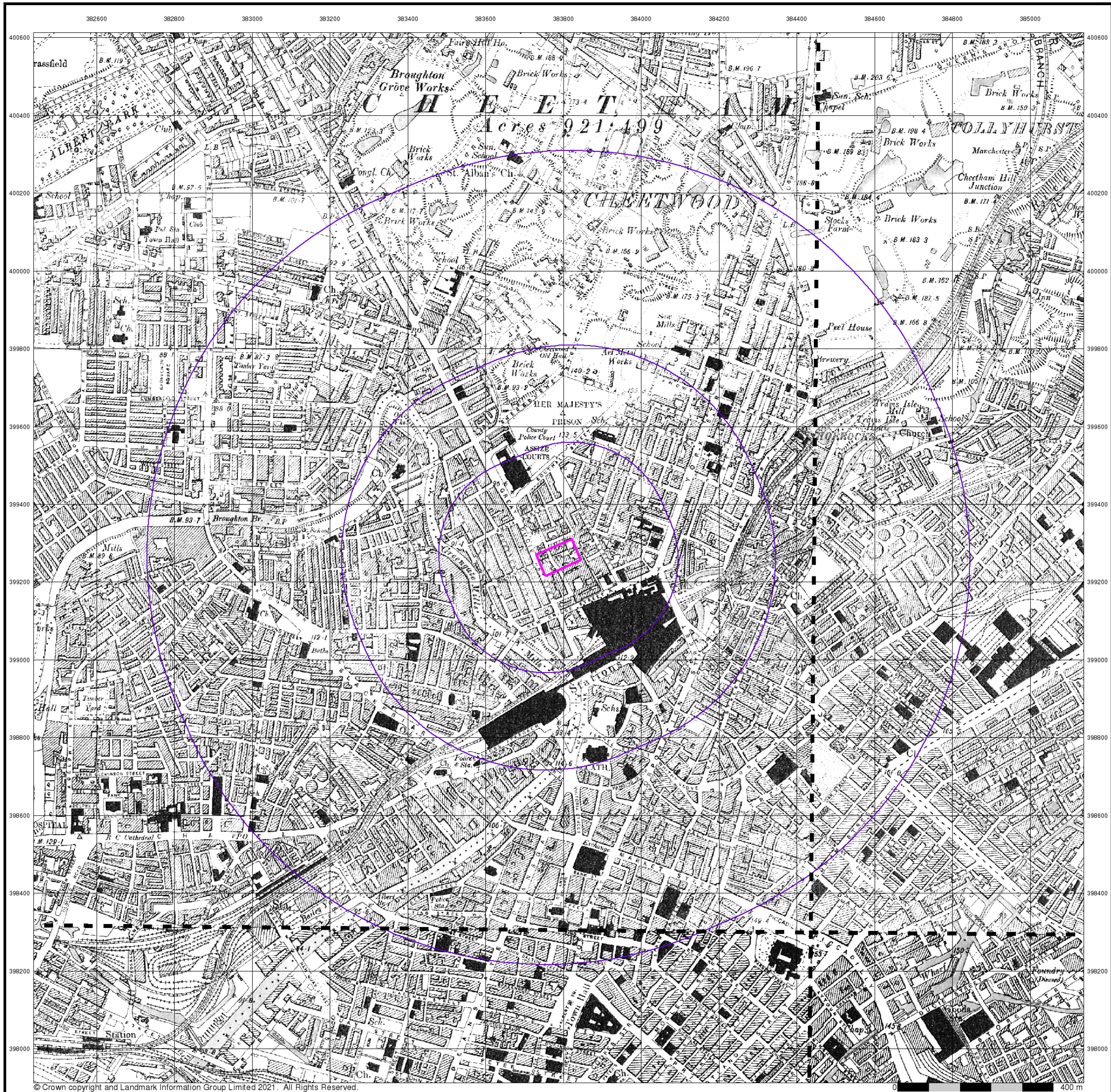
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
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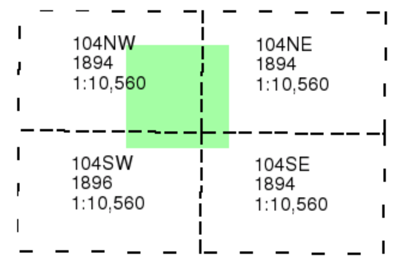
## Lancashire And Furness

## Published 1894 - 1896

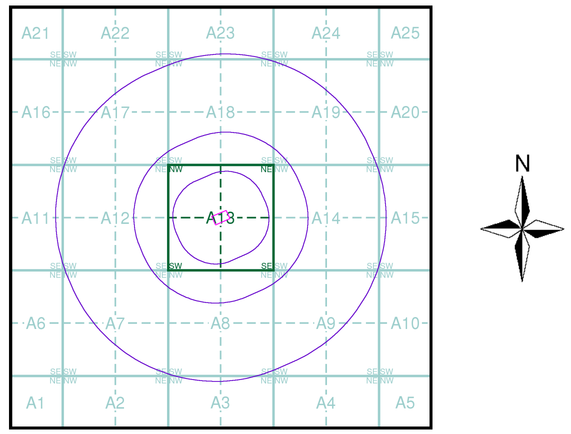
## Source map scale - 1:10,560

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

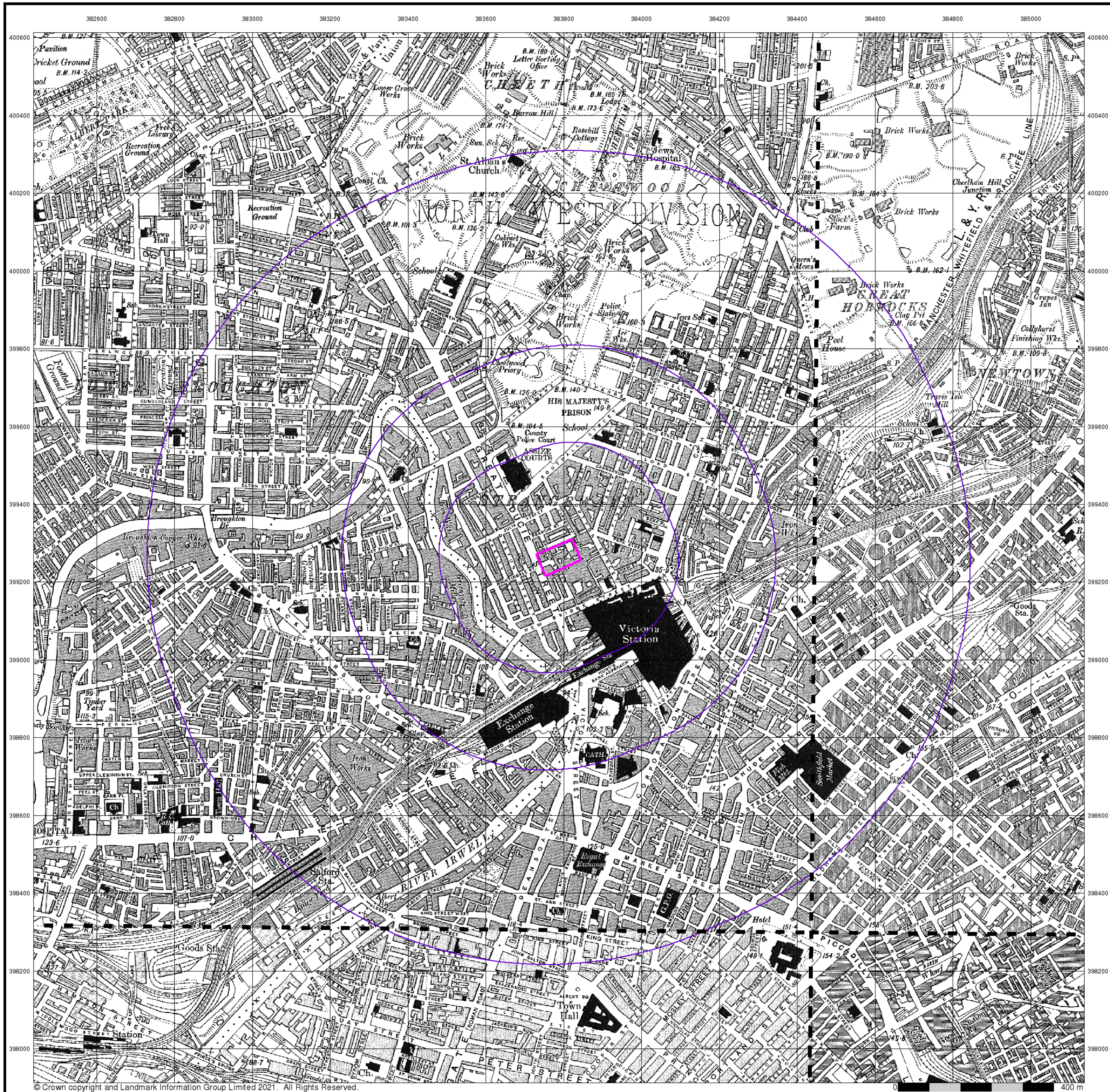
Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
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## Site Details

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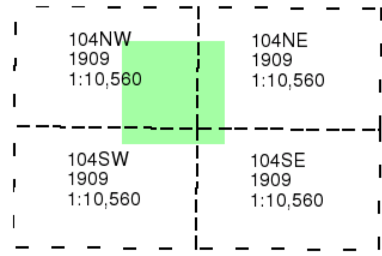

# Lancashire And Furness

## Published 1909

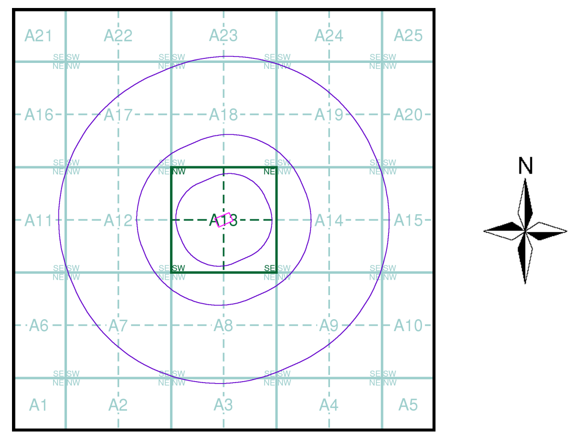
## Source map scale - 1:10,560

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)




## Historical Map - Slice A



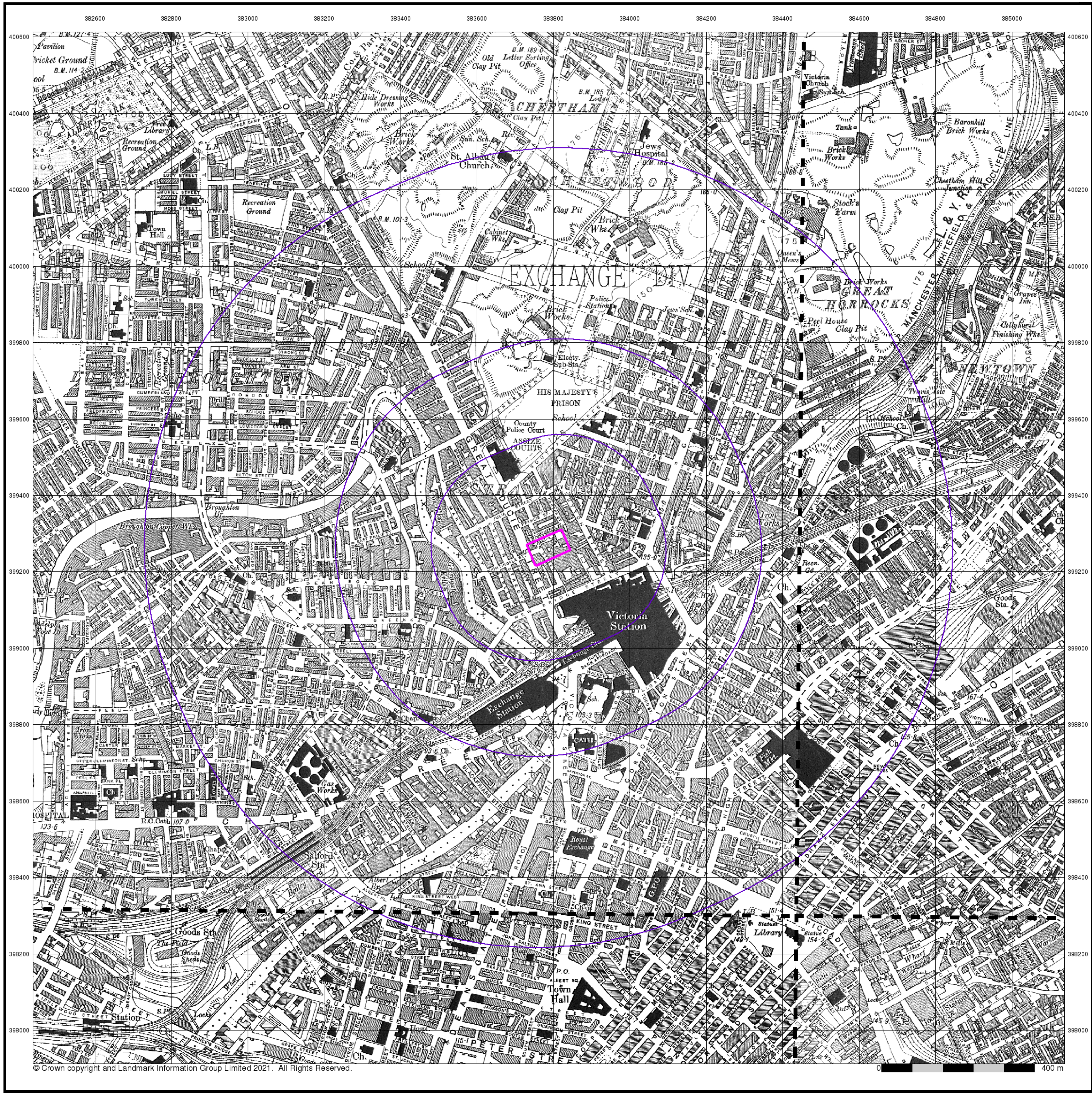

## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 1000

## Site Details

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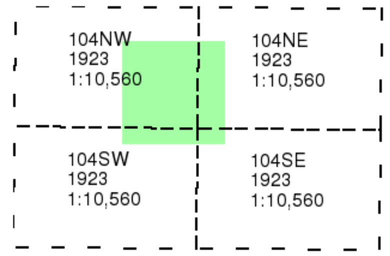
## Lancashire And Furness

## Published 1923

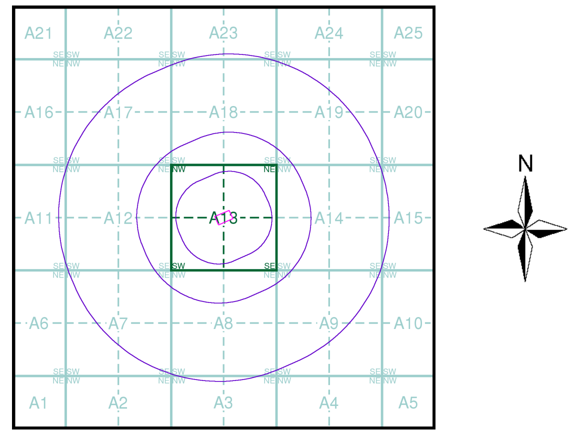
## Source map scale - 1:10,560

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

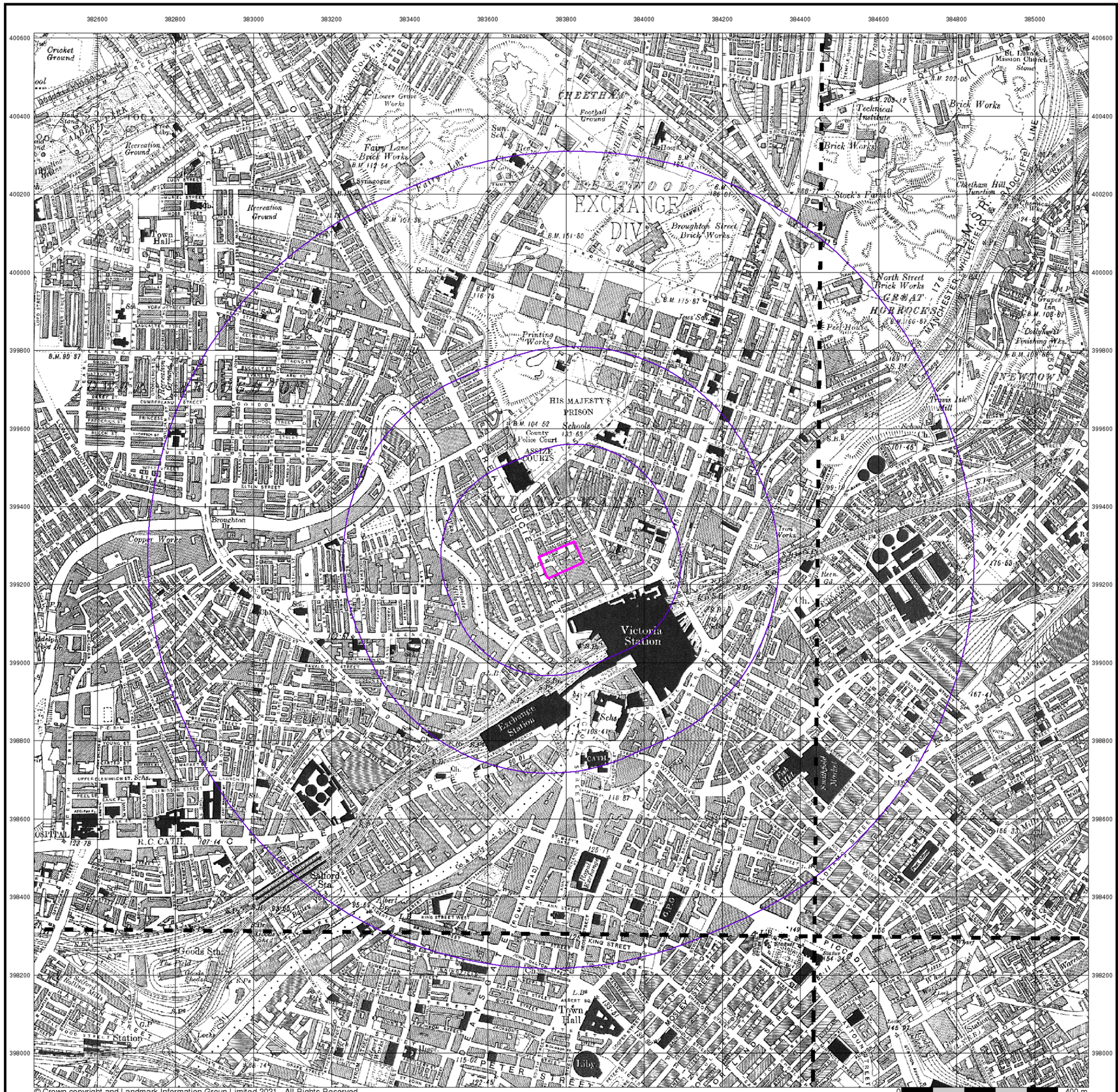
Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
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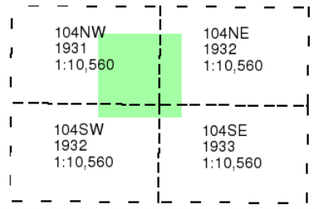
## Lancashire And Furness

## Published 1931 - 1933

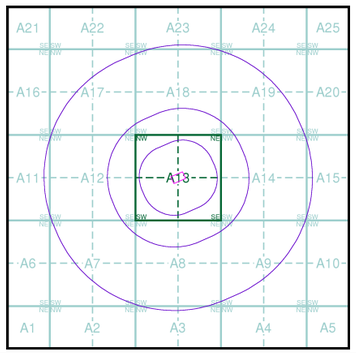
## Source map scale - 1:10,560

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

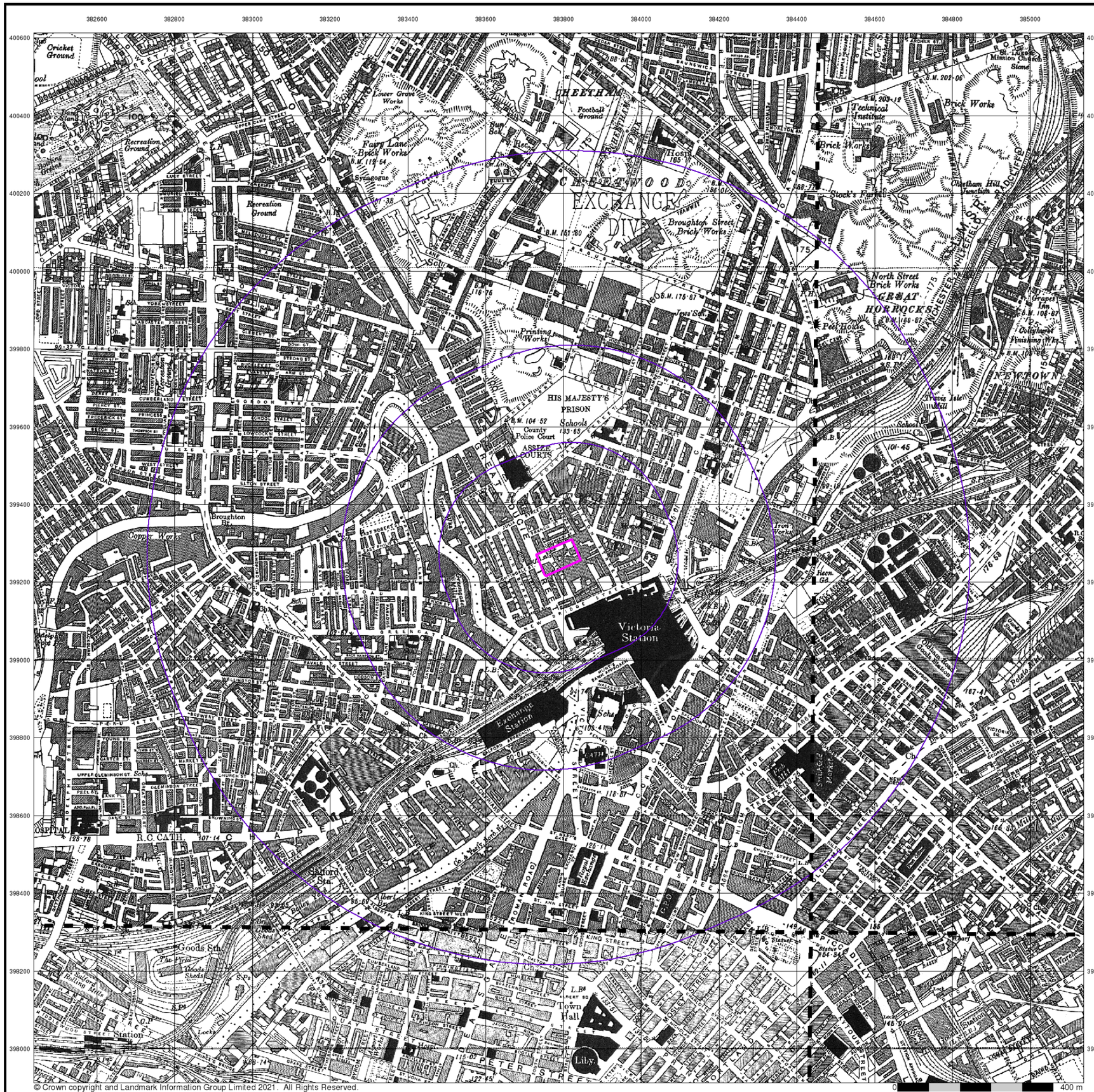
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| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## Lancashire And Furness

## Published 1938

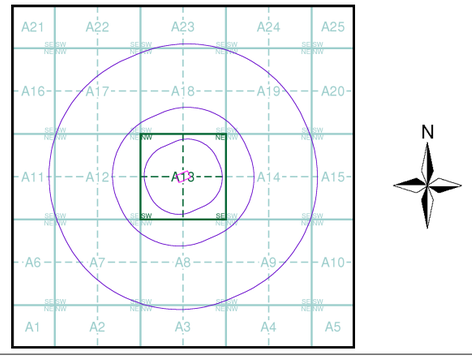
## Source map scale - 1:10,560

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)

104NW 1938 1:10,560
104NE 1938 1:10,560
104SW 1938 1:10,560
104SE 1938 1:10,560

## Historical Map - Slice A



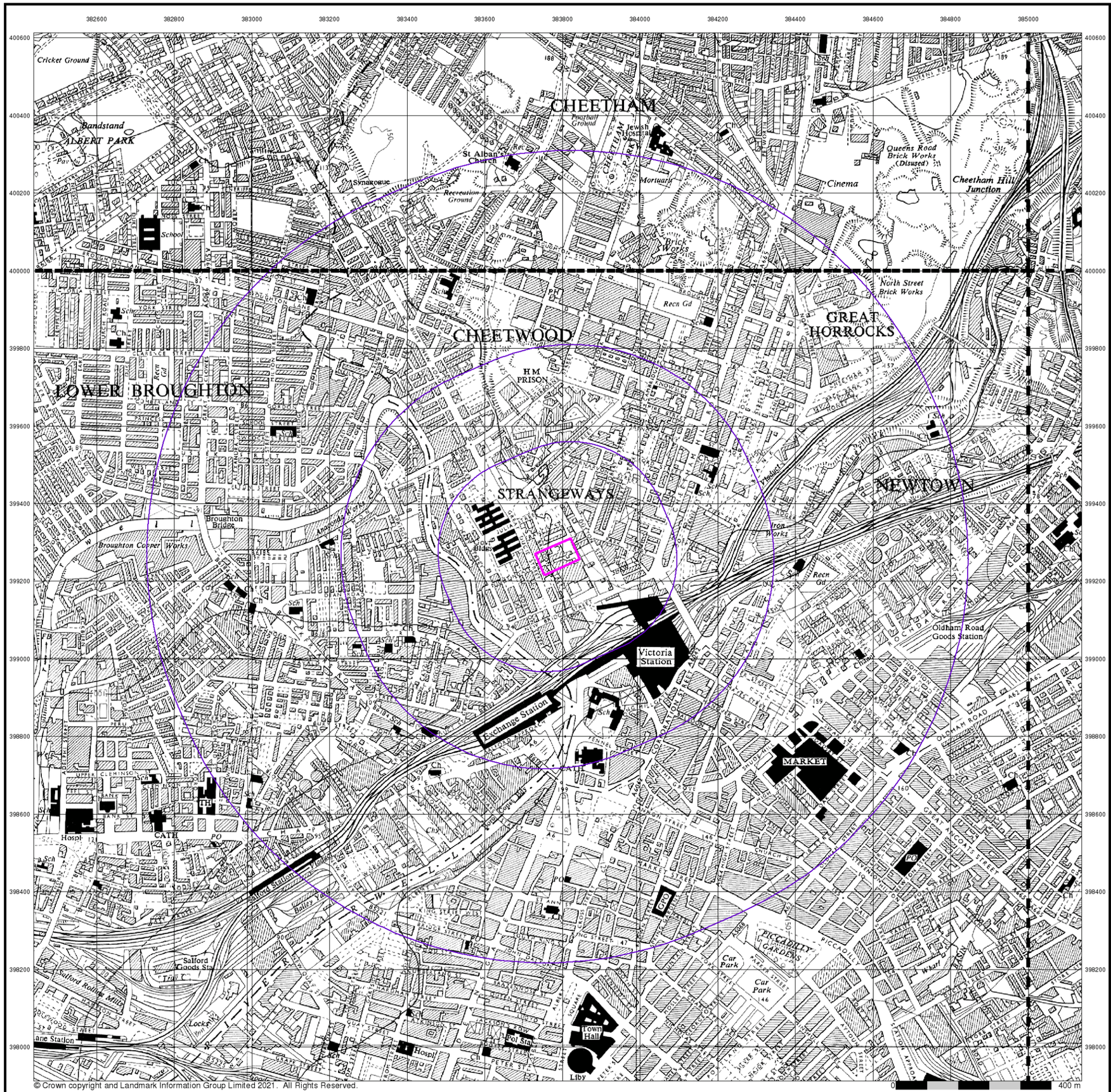

## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## Ordnance Survey Plan

## Published 1956

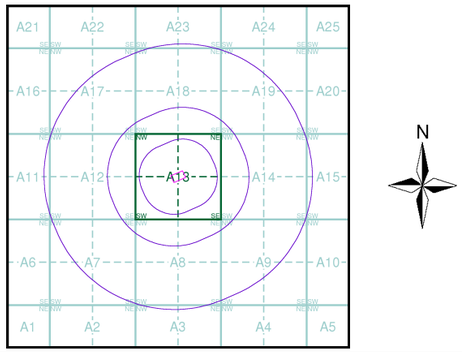
## Source map scale - 1:10,000

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)

| | |
|---|---|
| SD80SW 1956 1:10,560 | SD80SE 1956 1:10,560 |
| SJ89NW 1956 1:10,560 | SJ89NE 1956 1:10,560 |

## Historical Map - Slice A




## Order Details

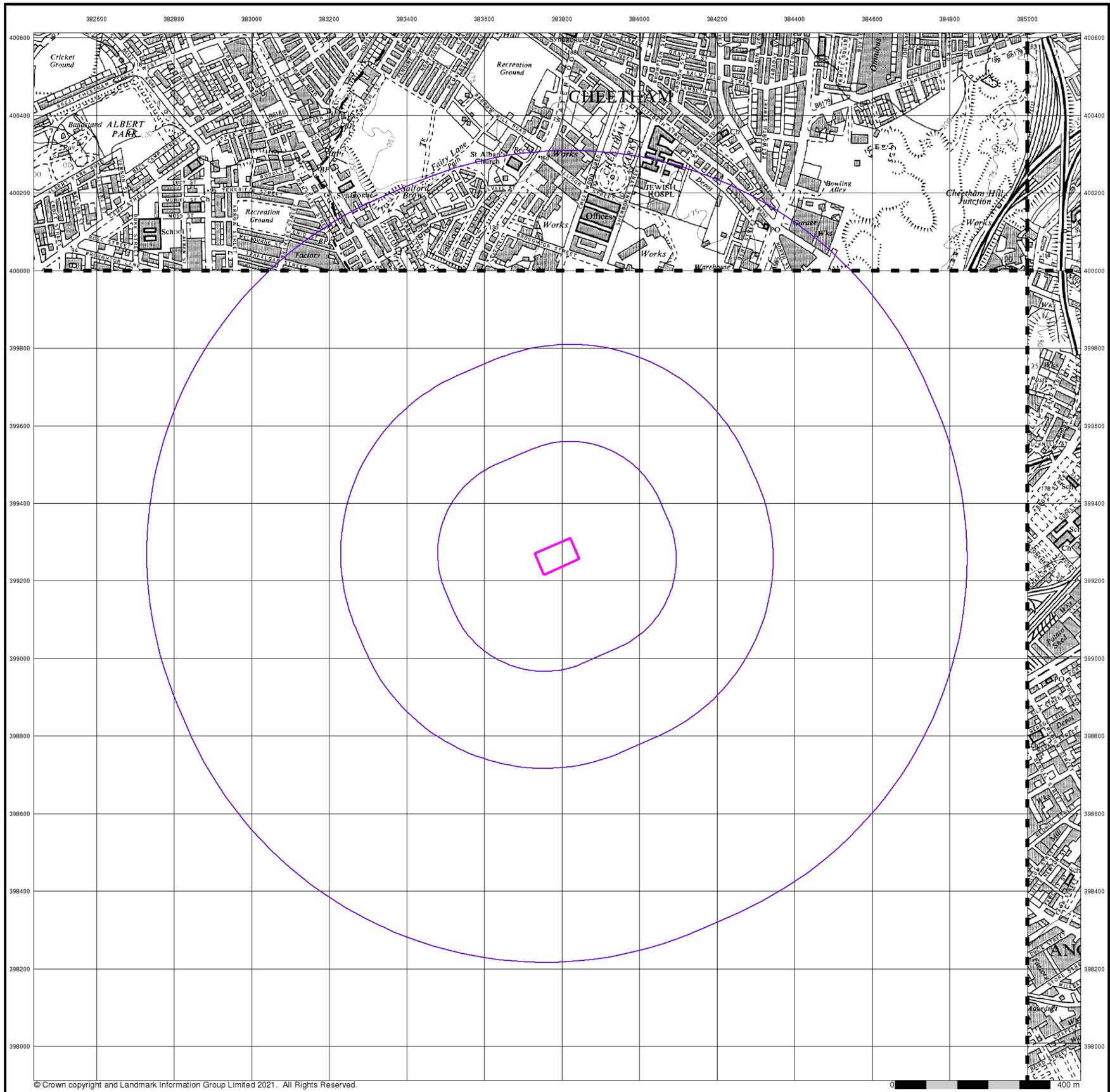
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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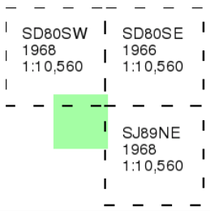
## Ordnance Survey Plan

## Published 1966 - 1968

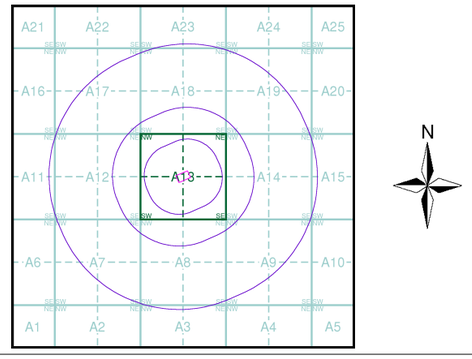
## Source map scale - 1:10,000

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

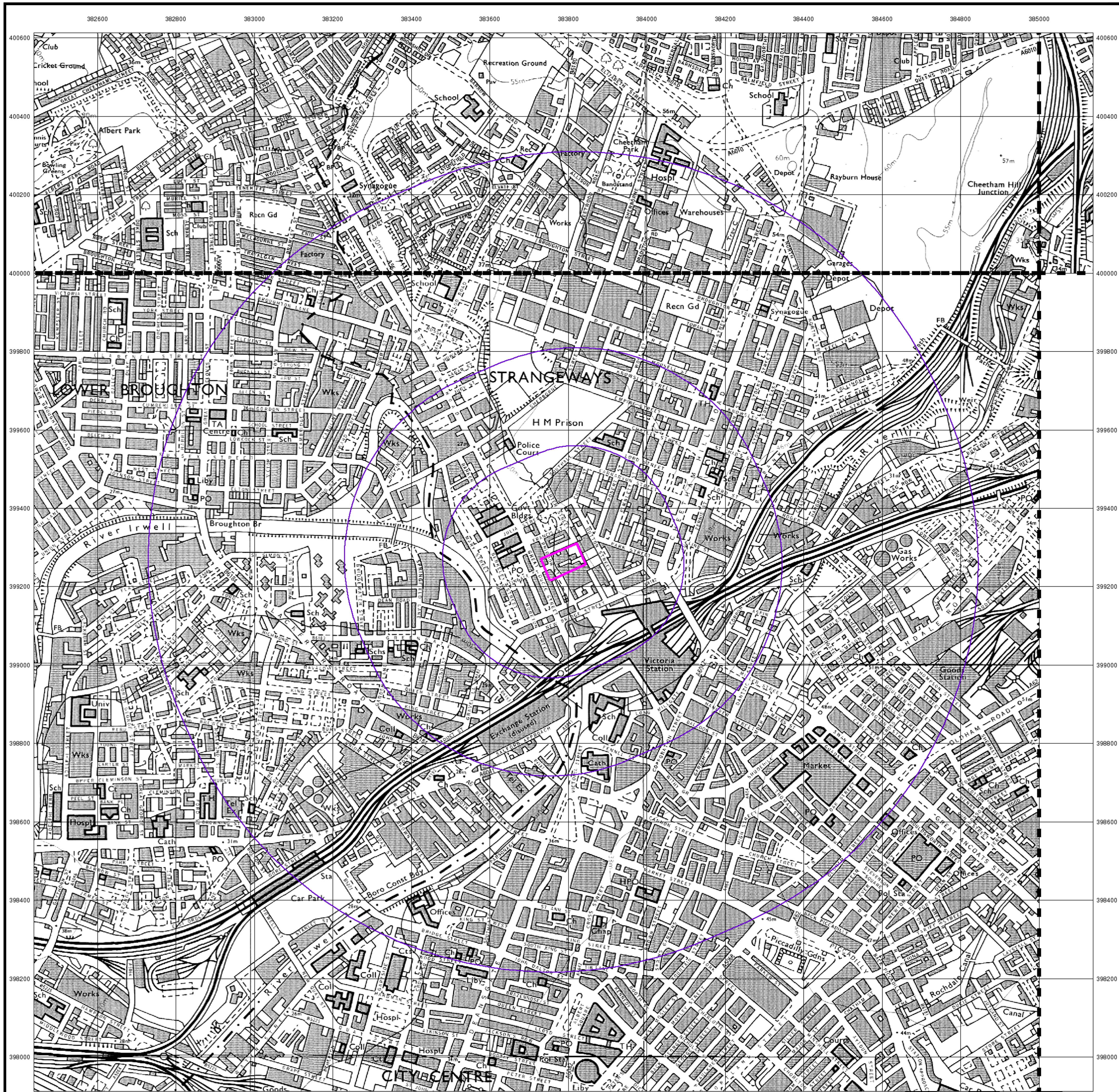
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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0 400 m

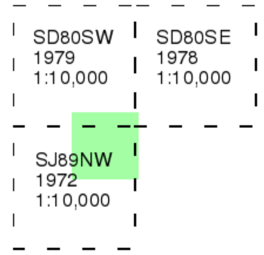
# Ordnance Survey Plan

## Published 1972 - 1979

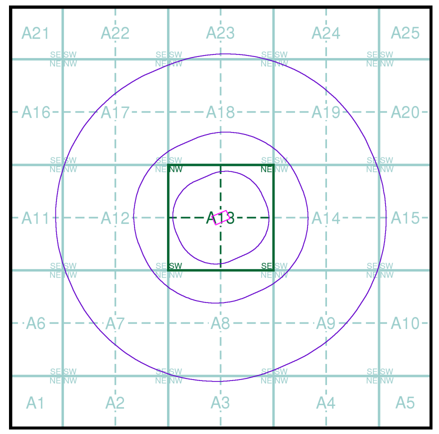
## Source map scale - 1:10,000

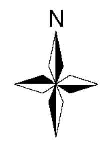
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 1000

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## Manchester

## Published 1975

## Source map scale - 1:25,000

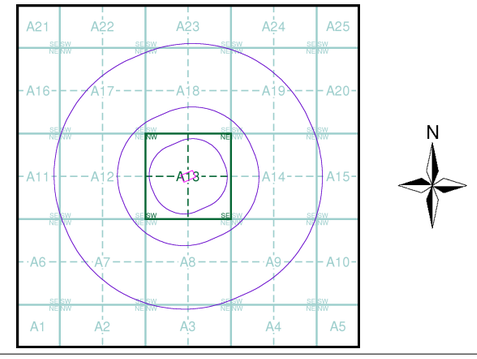
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

## Map Name(s) and Date(s)

SD80
1975
1:25,000

SJ89
1975
1:25,000

## Russian Map - Slice A



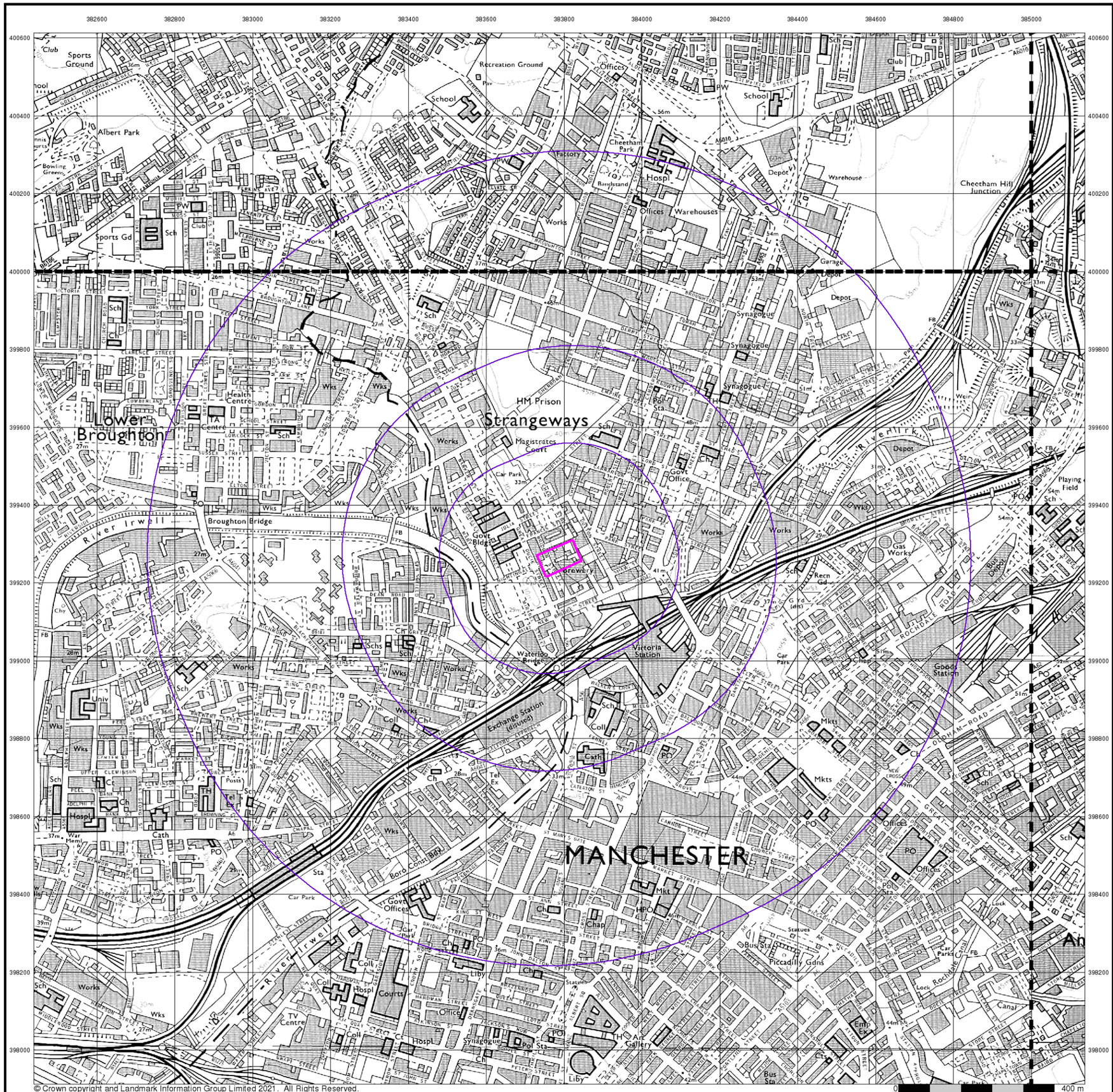

## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## Ordnance Survey Plan

### Published 1980 - 1986

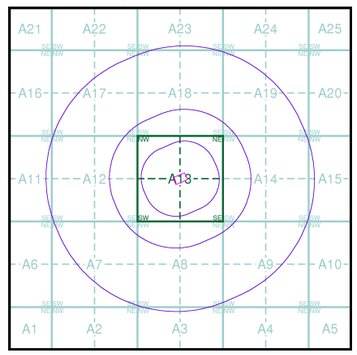
### Source map scale - 1:10,000

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

## Map Name(s) and Date(s)

| | |
|---|---|
| SD80SW 1986 1:10,000 | SD80SE 1982 1:10,000 |
| SJ89NW 1980 1:10,000 | SJ89NE 1981 1:10,000 |

## Historical Map - Slice A




## Order Details

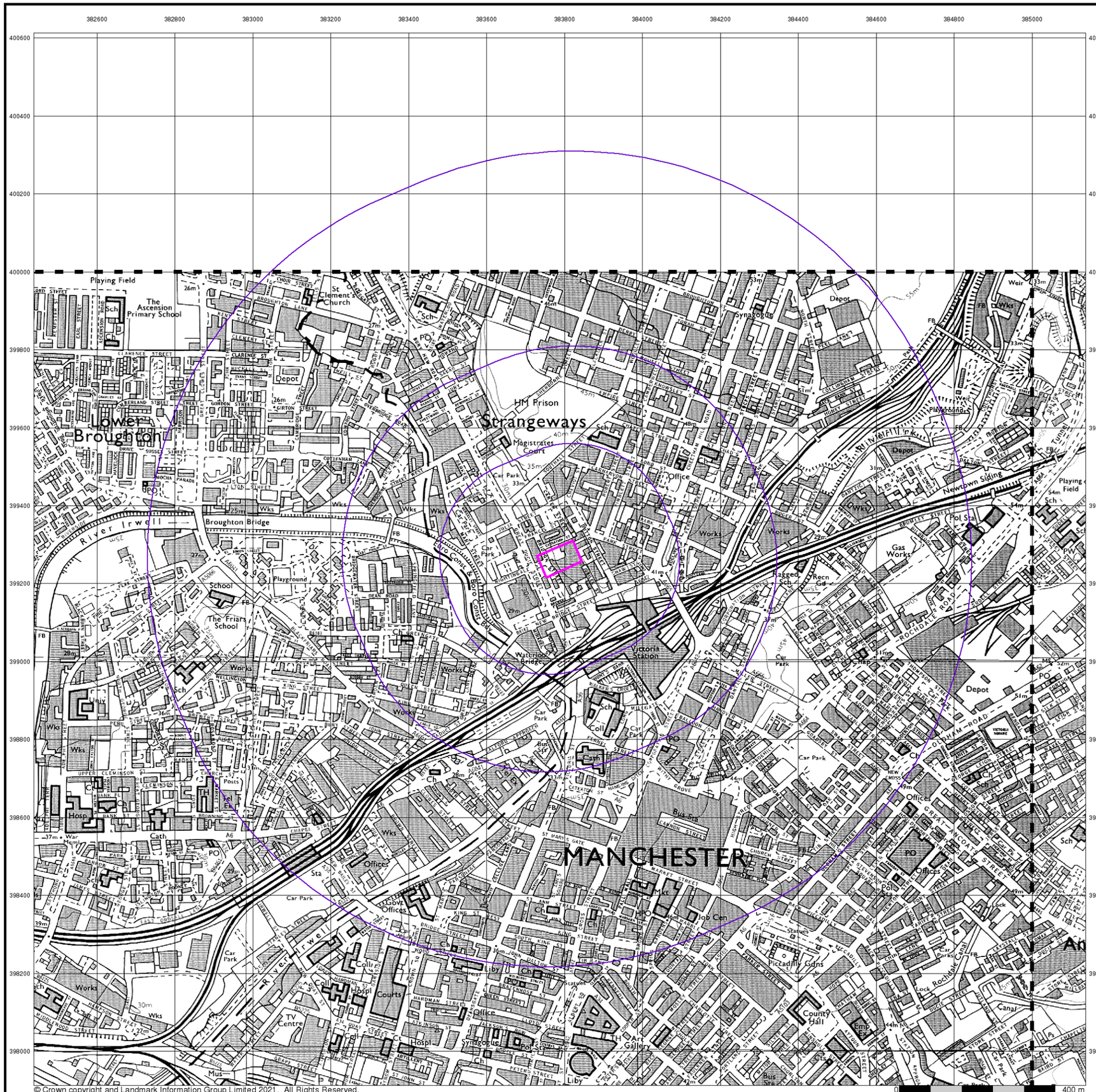
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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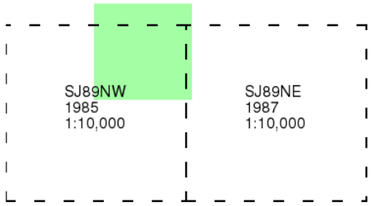
## Ordnance Survey Plan

## Published 1985 - 1987

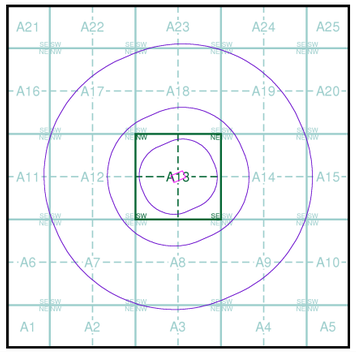
## Source map scale - 1:10,000

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

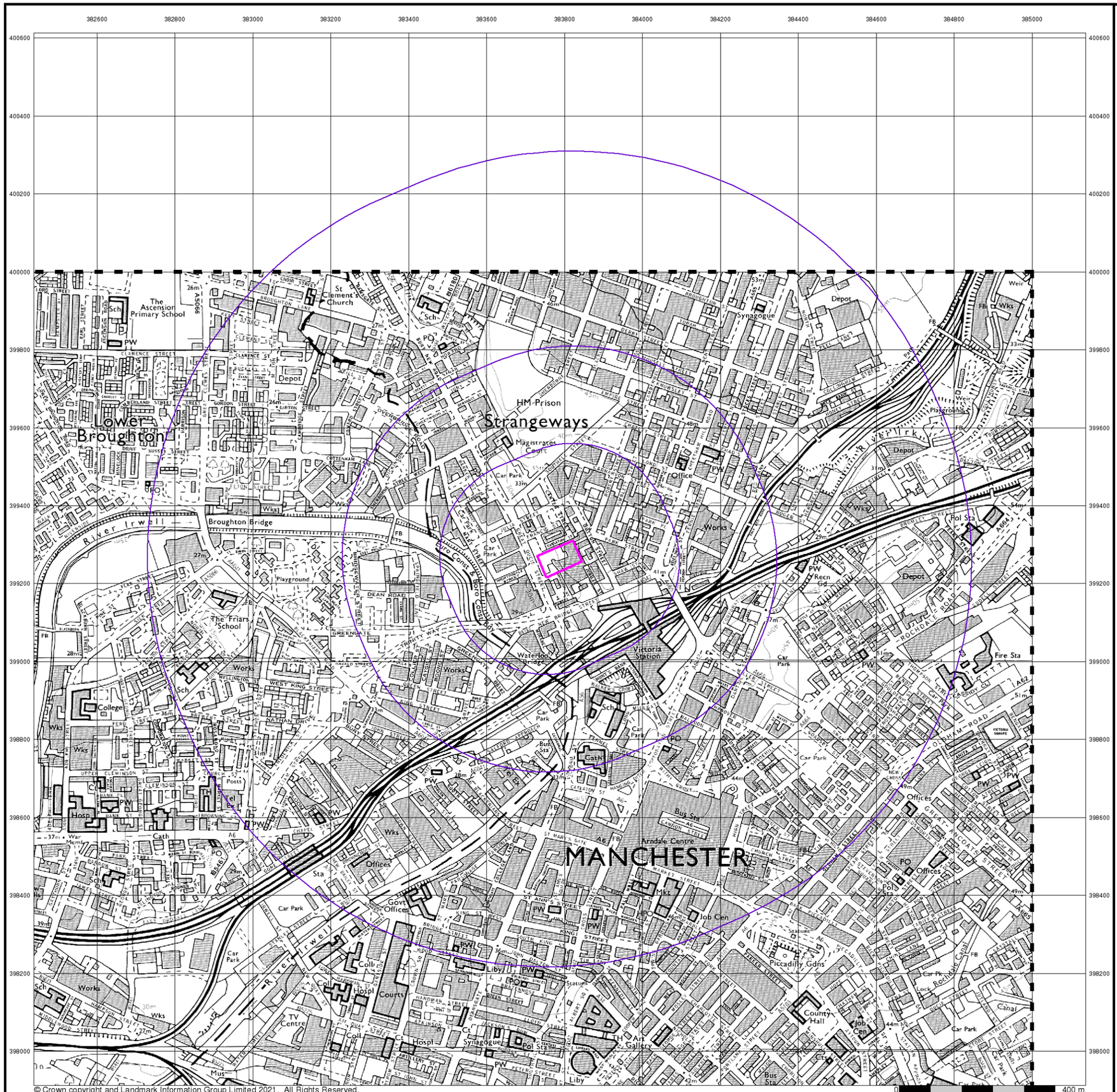
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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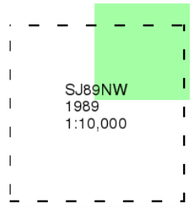
## Ordnance Survey Plan

## Published 1989

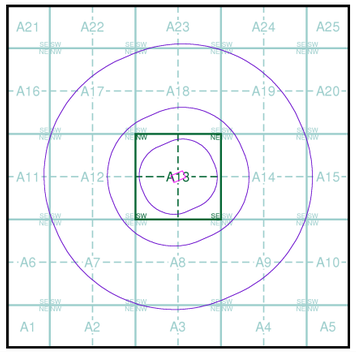
## Source map scale - 1:10,000

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

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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# Ordnance Survey Plan

## Published 1990 - 1994

## Source map scale - 1:10,000

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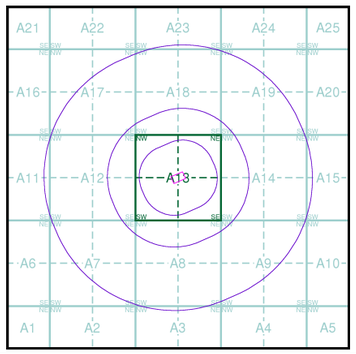
## Map Name(s) and Date(s)

SD80SE
1990
1:10,000

SJ89NW
1994
1:10,000

SJ89NE
1993
1:10,000

## Historical Map - Slice A



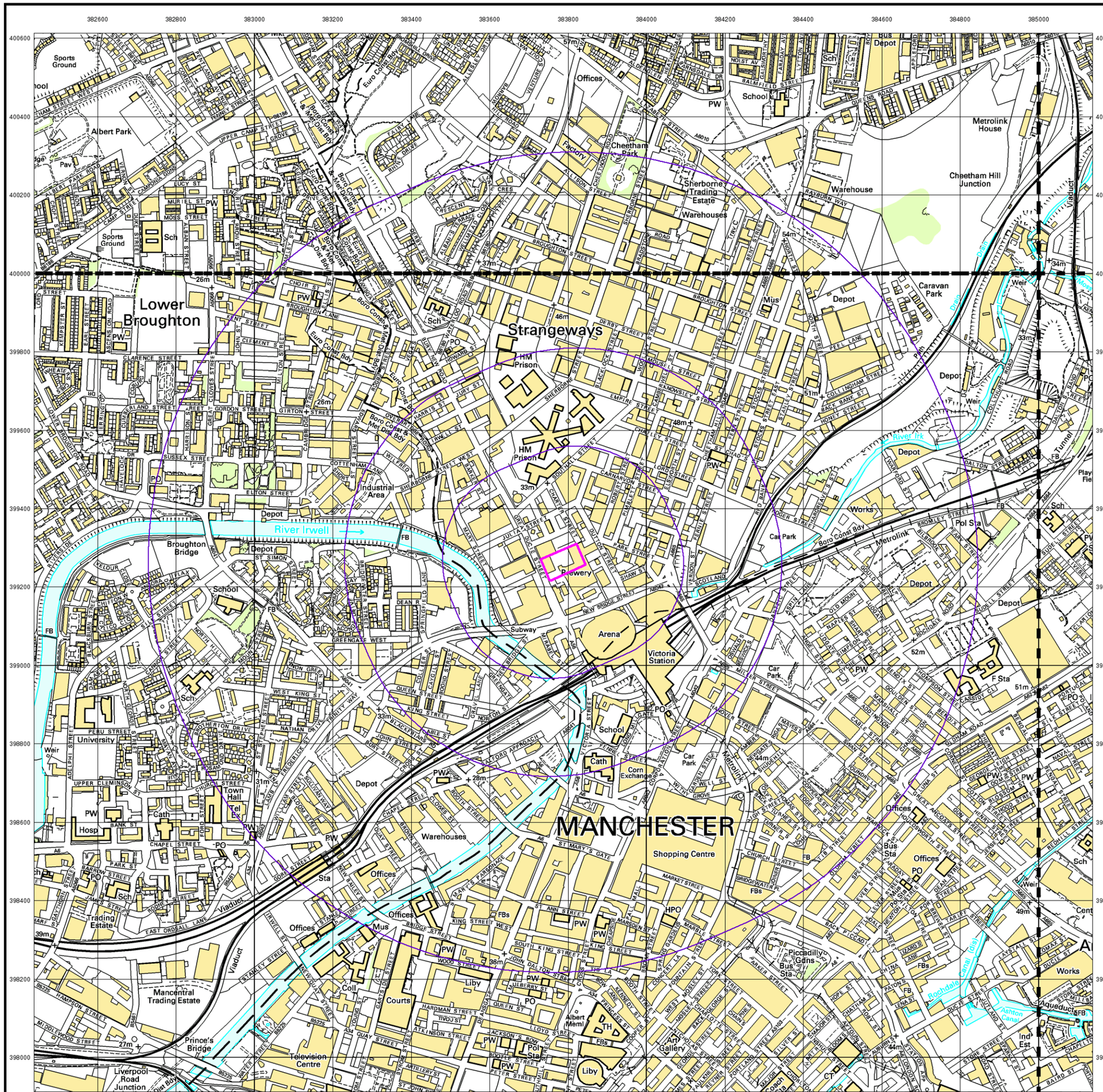

## Order Details

| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## 10k Raster Mapping

## Published 1999

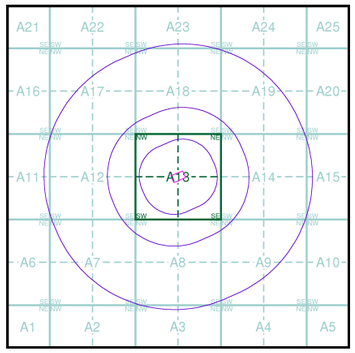
## Source map scale - 1:10,000

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)

| | |
|---|---|
| SD80SW 1999 1:10,000 | SD80SE 1999 1:10,000 |
| SJ89NW 1999 1:10,000 | SJ89NE 1999 1:10,000 |

## Historical Map - Slice A




## Order Details

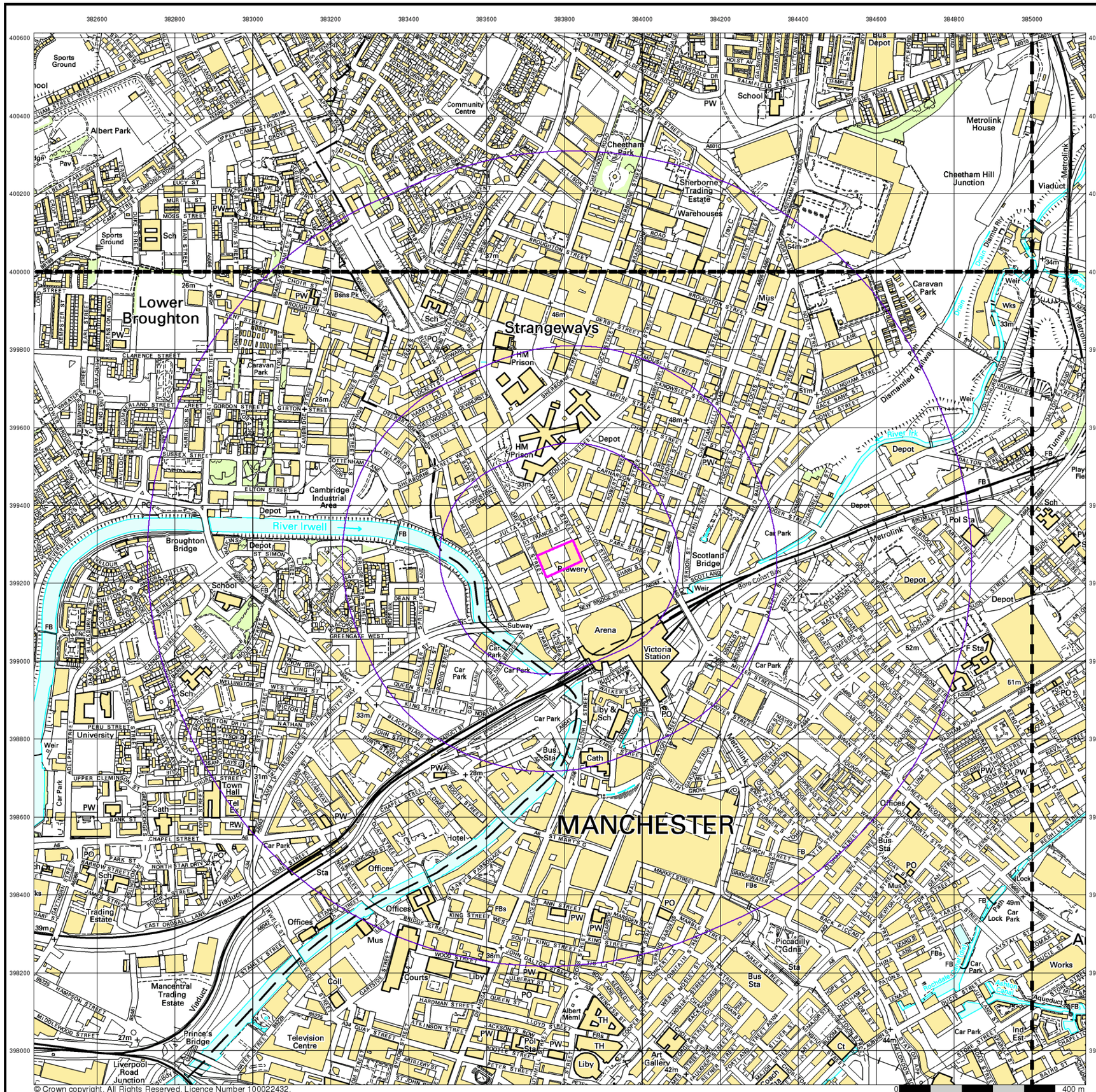
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|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## 10k Raster Mapping

## Published 2006

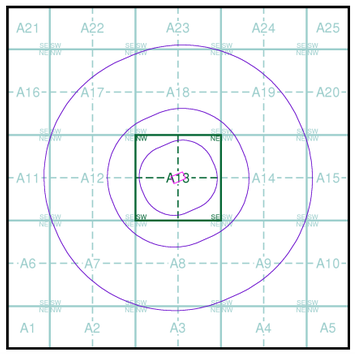
## Source map scale - 1:10,000

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)

| | |
|---|---|
| SD80SW 2006 1:10,000 | SD80SE 2006 1:10,000 |
| SJ89NW 2006 1:10,000 | SJ89NE 2006 1:10,000 |

## Historical Map - Slice A




## Order Details

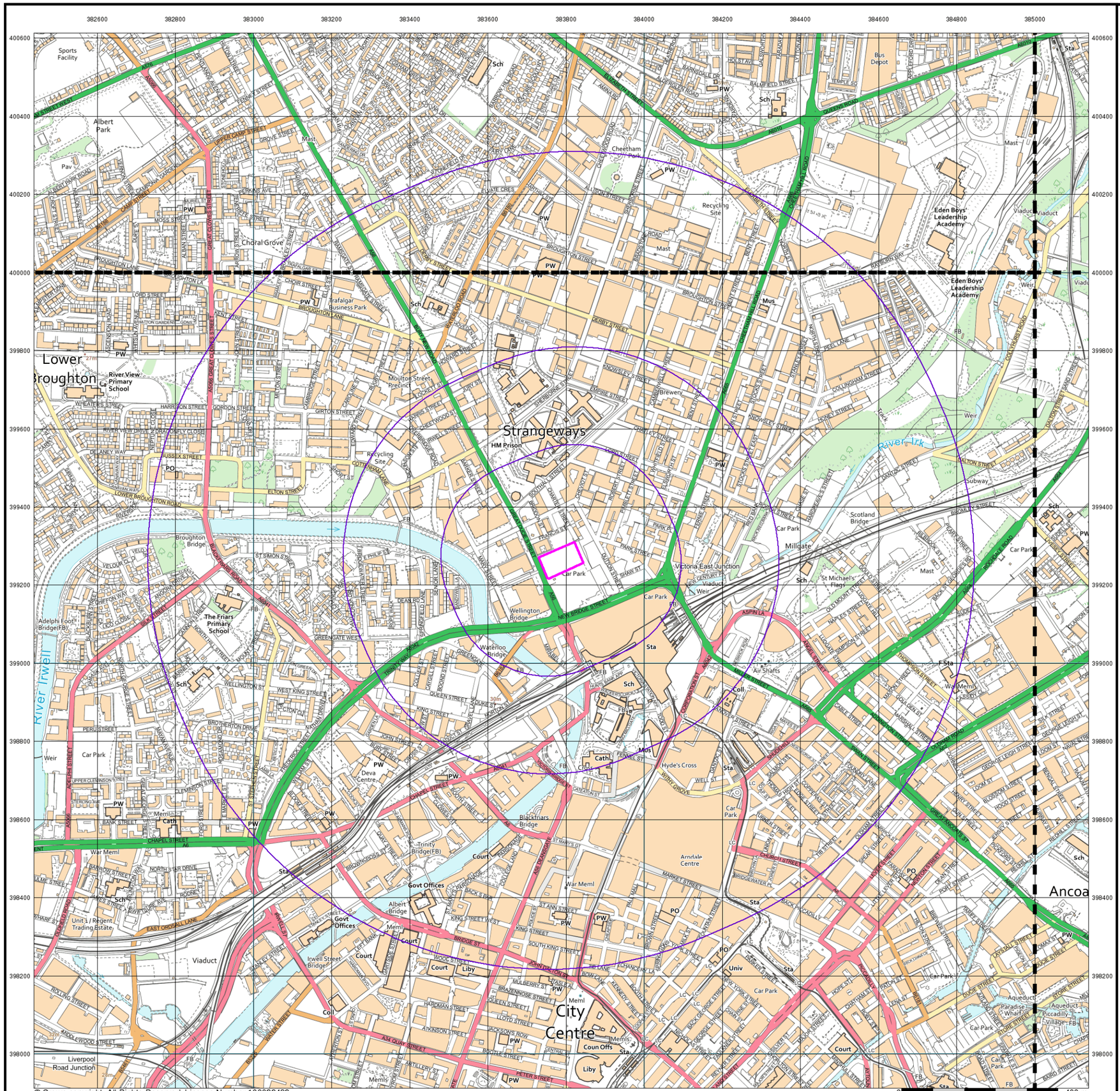
| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

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## VectorMap Local

## Published 2021

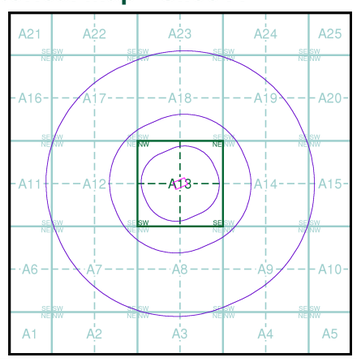
## Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

## Map Name(s) and Date(s)

| | |
|---|---|
| SD80SW 2021 Variable | SD80SE 2021 Variable |
| SJ89NW 2021 Variable | SJ89NE 2021 Variable |

## Historical Map - Slice A




## Order Details

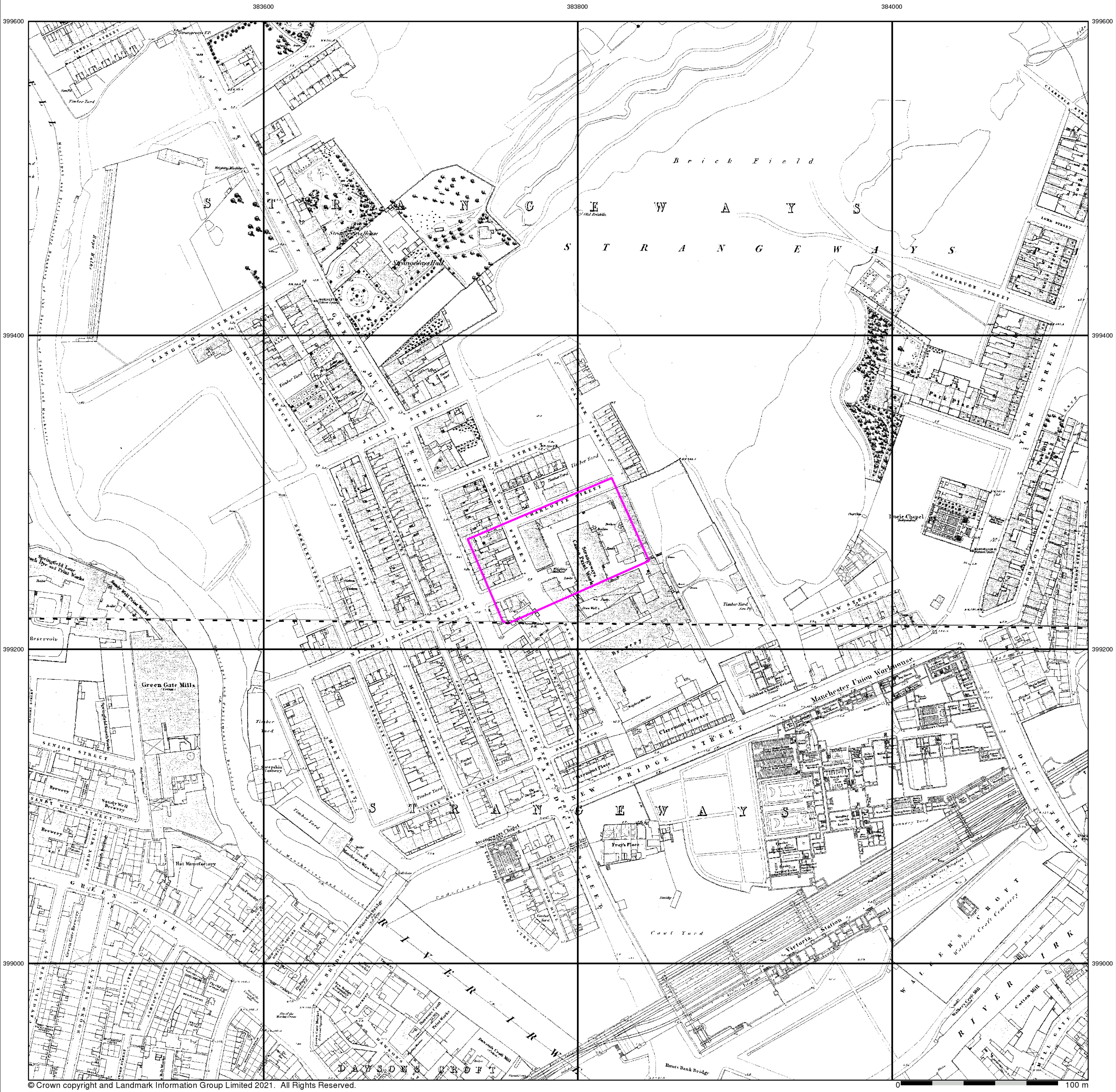
| | |
|---|---|
| Order Number: | 286062703_1_1 |
| Customer Ref: | 15175 |
| National Grid Reference: | 383790, 399260 |
| Slice: | A |
| Site Area (Ha): | 0.59 |
| Search Buffer (m): | 1000 |

## Site Details

Great Ducie Street, MANCHESTER

Landmark INFORMATION GROUP

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




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## Lancashire And Furness

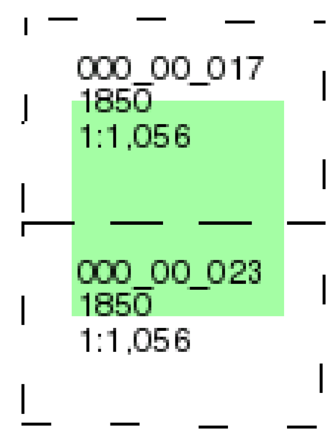
## Published 1850

## Source map scale - 1:1,056

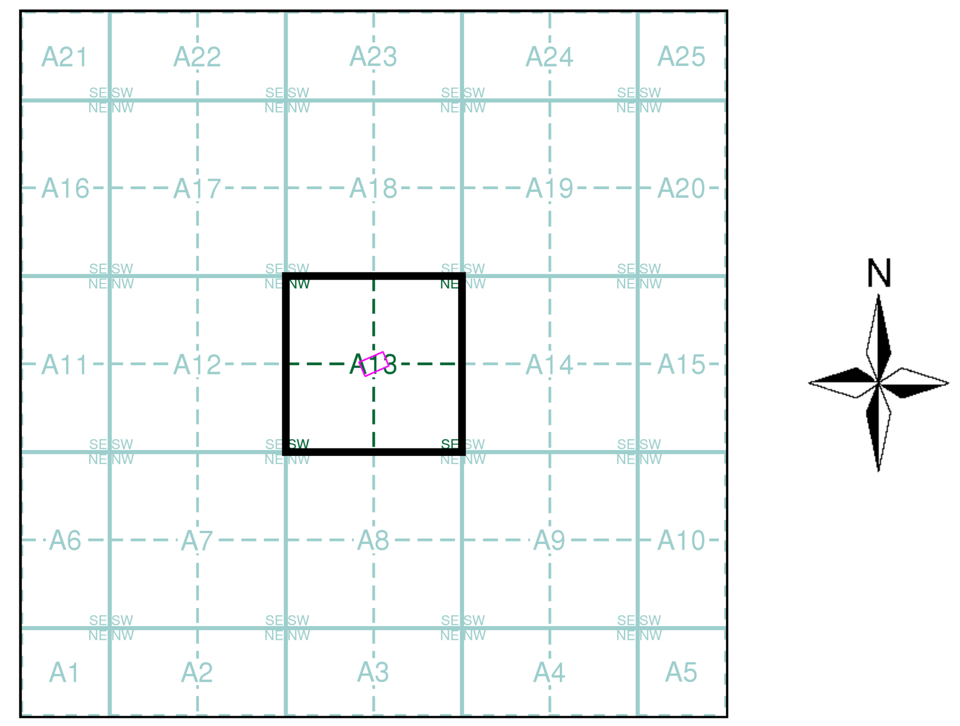
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

## Map Name(s) and Date(s)




## Historical Town Plan - Segment A13



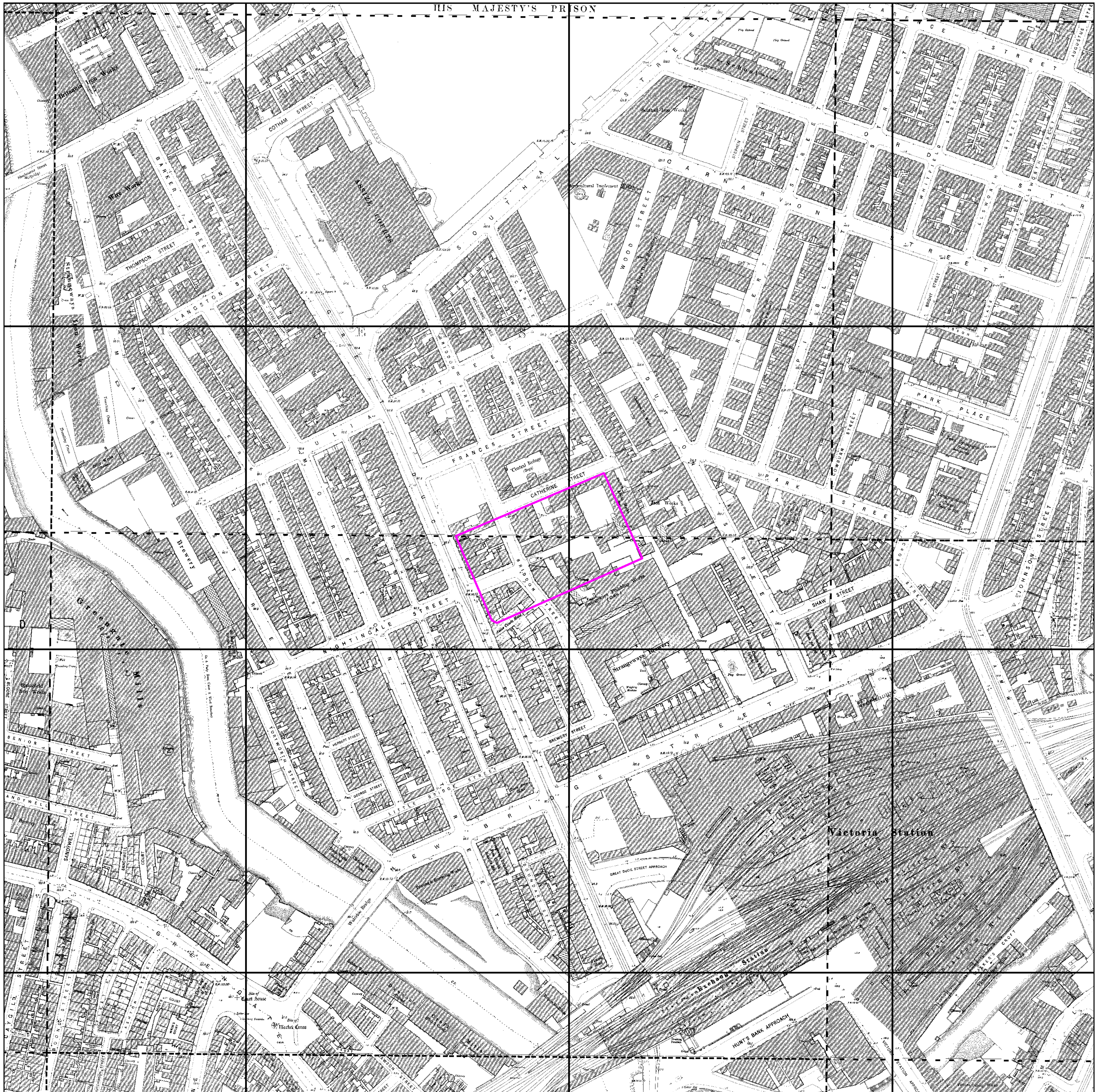

## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 0

## Site Details

Great Ducie Street, MANCHESTER

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




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# e3p

## Lancashire And Furness

## Published 1890 - 1891

## Source map scale - 1:500

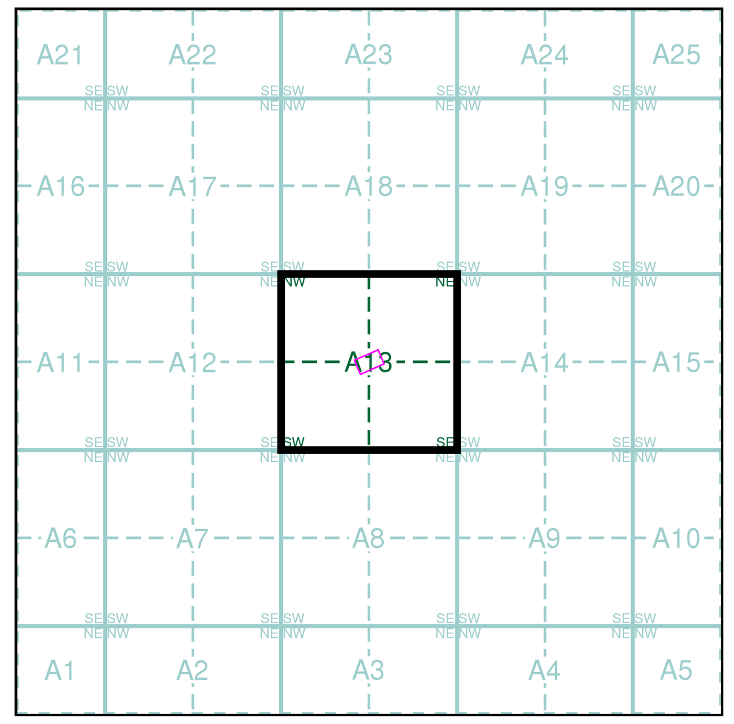
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to compliment the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped more than once at this scale, and none have been since 1910. The 1:500 scale gives particular emphasis to such features as lamp posts, man holes, arched passages and minor building projections. Also often featured are divisions between tenements, interior ground floor layouts of public buildings, and on earlier plans, the functions of the various parts of larger industrial premises are also indicated. Content of the plans does vary however, from one town to the next in terms of, for example, the completeness of railway tracks and the coverage of public buildings.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

## Map Name(s) and Date(s)

104_06_00 104_06_00 104_06_005
1891 1890 1891
1:500 1:500 1:500
04_06_008 04_06_009 04_06_010
891 1891 1891
:500 1:500 1:500
04_06_01 04_06_01 04_06_015
891 1891 1891
:500 1:500 1:500
04_06_01 04_06_01 04_06_020
891 1891 1891
:500 1:500 1:500

## Historical Town Plan - Segment A13




N

## Order Details

Order Number: 286062703_1_1
Customer Ref: 15175
National Grid Reference: 383790, 399260
Slice: A
Site Area (Ha): 0.59
Search Buffer (m): 0

## Site Details

Great Ducie Street, MANCHESTER

Landmark INFORMATION GROUP

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

CHAS. E. GOAD, LTD. CIVIL ENGINEERS

# EXPLANATION OF SIGNS

USED ON

# INSURANCE PLANS OF TOWNS & CITIES

56 CROUCH HILL LONDON N.4.

## ABBREVIATIONS

| | |
|---|---|
| ASB. | ASBESTOS |
| CORR | CORRUGATED IRON |
| D.I.D. | DOUBLE IRON DOORS |
| DRA. | DRAPERY |
| D | DWELLING |
| ELECT. | ELECTRICIAN |
| (E.M.) | ELECTRIC MOTORS |
| (ENG.) | STEAM ENGINE |
| FURNE. | FURNITURE |
| GAR. | GARAGE |
| (G.E.) | GAS ENGINE |
| H.W. | HARDWARE |
| I.COLS. | IRON COLUMNS OR STEEL STANCHIONS |
| JWLY. | JEWELLERY |
| M.CL. | METAL CLAD |
| M.W. | MANCHESTER WAREHOUSE |
| m.l. | MATCH (OR WOOD) LINED |
| OIL | OIL & COLOR |
| (O.E.) | OIL ENGINE |
| P.H. | PUBLIC HOUSE |
| S. | SHOP |
| S.I.D. | SINGLE IRON DOORS |
| S.I.S. | SINGLE IRON SHUTTERS |
| TAI. | TAILORS |
| TENS. | TENEMENTS |
| W.G. | WIRED GLASS |
| W.N. | WIRE NETTING OVER GLASS. |

## COLORS

- BRICK, STONE OR CONCRETE.
- WOOD
- AREAS CLEARED DUE TO ENEMY ACTION
- SKYLIGHTS ON 1 & 2 STORY BUILDINGS
- SKYLIGHTS ON HIGHER BUILDINGS
- METAL BUILDINGS.
- TIMBER PILED OR STACKED

## WALLS

- PARTY WALL 2 STORIES OR OVER, A PROBABLE FIRE CUT OFF
- ENTIRE WALL, BUT DOUBTFUL AS FIRE CUT OFF
- DEFECTIVE WALL — IMPERFECT
- WALL ABOVE, IRON COLS: UNDER
- WALL SOME FLOORS ONLY (OR WOOD OR PLASTER PARTITION)
- ABOVE ROOF 6" TO 1'-6"
- —Dº— 1'-6" TO 2'-6".
- MATCH OR WOOD LINED
- WOOD CLAD WITH CORRUGATED IRON

## OPENINGS

- PASSAGE UNDER
- ON ALL FLOORS
- SOME FLOORS ONLY } UNPROTECTED
- ALL FLOORS (PROTECTED)
- ALL FLOORS (SOME PROTECTED) } SINGLE IRON DOORS
- SOME FLOORS ONLY (PROTECTED)
- ALL FLOORS (SOME PROTECTED)
- ALL FLOORS (PROTECTED) } DOUBLE IRON DOORS
- SOME FLOORS ONLY (PROTECTED)
- WOOD LOADING DOOR
- IRON LOADING DOOR

## WINDOWS

- ON ALL OR MOST FLOORS
- MORE THAN USUAL
- OVERLOOKING
- NEARLY ALL GLASS
- OPENINGS THRO' & WINDOWS OVER
- ON SOME FLOORS ONLY

} UNPROTECTED

- PROTECTED BY WIRED GLASS
- PROTECTED BY SINGLE IRON SHUTTERS
- PROTECTED BY DOUBLE IRON SHUTTERS.

WINDOWS IN FRONT & REAR OF BUILDINGS UNDERSTOOD UNLESS OTHERWISE SHOWN

## FLOORS

1.2.3.3½ &c ON BUILDINGS ARE NUMBER OF STORIES ABOVE GROUND (3½=3 FLOORS & ATTIC)

2&2B MEANS 2 STORIES & 2 BASEMENTS BAST & SUB-BASEMENT.

## SKYLIGHTS

- Λ LESS THAN 50 SQUARE FEET (SAY 10'x5', OR 7'x7')
- ≙ OPENINGS THROUGH 2 FLOORS UNDER (EACH STROKE DENOTES AN OPENING.)
- WITH WELL HOLE THROUGH 3 FLOORS
- LANT. LANTERN LIGHT, SIDES ONLY GLASS.
- OR VENT. OR RAISED VENTILATOR

} OVER 50 SQ: FT. TO SCALE

## HOISTS & LIFTS

- H OPEN
- H (WOOD FLAPS TO FLOORS.) OPEN
- H ENCLOSED WOOD OR PLASTER
- WH OPEN TO STREET
- H ENCLOSED BRICK OR FIRE RESISTING WIRED GLASS DOORS

IRON DOORS SHOWN AS EXPLAINED UNDER "OPENINGS"

## ROOFS

| | |
|---|---|
| ASB | ASBESTOS |
| C | CONCRETE |
| CORR: | CORRUGATED IRON |
| ⌐ | METAL |
| P | PATENT (FELT &c) |
| O | SLATE |
| T | TILE |

PROFILES

WITH NORTH LIGHTS

## SUNDRIES

- STEAM BOILERS
- —"— BOILER SET IN BRICK
- FACTORY CHIMNEYS
- (ENG.) STEAM ENGINE
- OVERHANGING WOOD CORNICE
- FIRE ALARM BOX
- —— Dº —— ON KEY PLAN
- HYDRANT
- HYDRAULIC HYDRANT
- PRIVATE HYDRANT OR STAND PIPE
- DOUBLE HYDRANT
- SALT WATER HYDRANT
- SPRINKLER OR AUTO ALARM BELL

## REFERENCE NUMBERS

NUMBERS PARALLEL WITH STREET ARE EXISTING STREET Nºs

WHERE TWO SETS OF STREET Nºs IN SAME BLOCK COINCIDE, ADDITIONAL ARBITRARY Nºs ARE GIVEN TO ONE SET (500 & UPWARDS.)

WHERE BUILDINGS TO WHICH THEY APPLIED ARE DEMOLISHED, STREET & ARBITRARY Nºs ARE SHOWN & CROSSED THROUGH ON REVISION

—48'— ARE STREET WIDTHS.

(37') ARE HEIGHTS OF GROUND ABOVE ORDNANCE DATUM

HEIGHT IN FEET OF ADJOINING BUILDINGS WHERE STORIES DIFFER IN HEIGHT

10" 6" 8" SIZES OF WATER MAINS SUPPLYING HYDRANTS

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Published Date : 1933
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0 50m




e3p

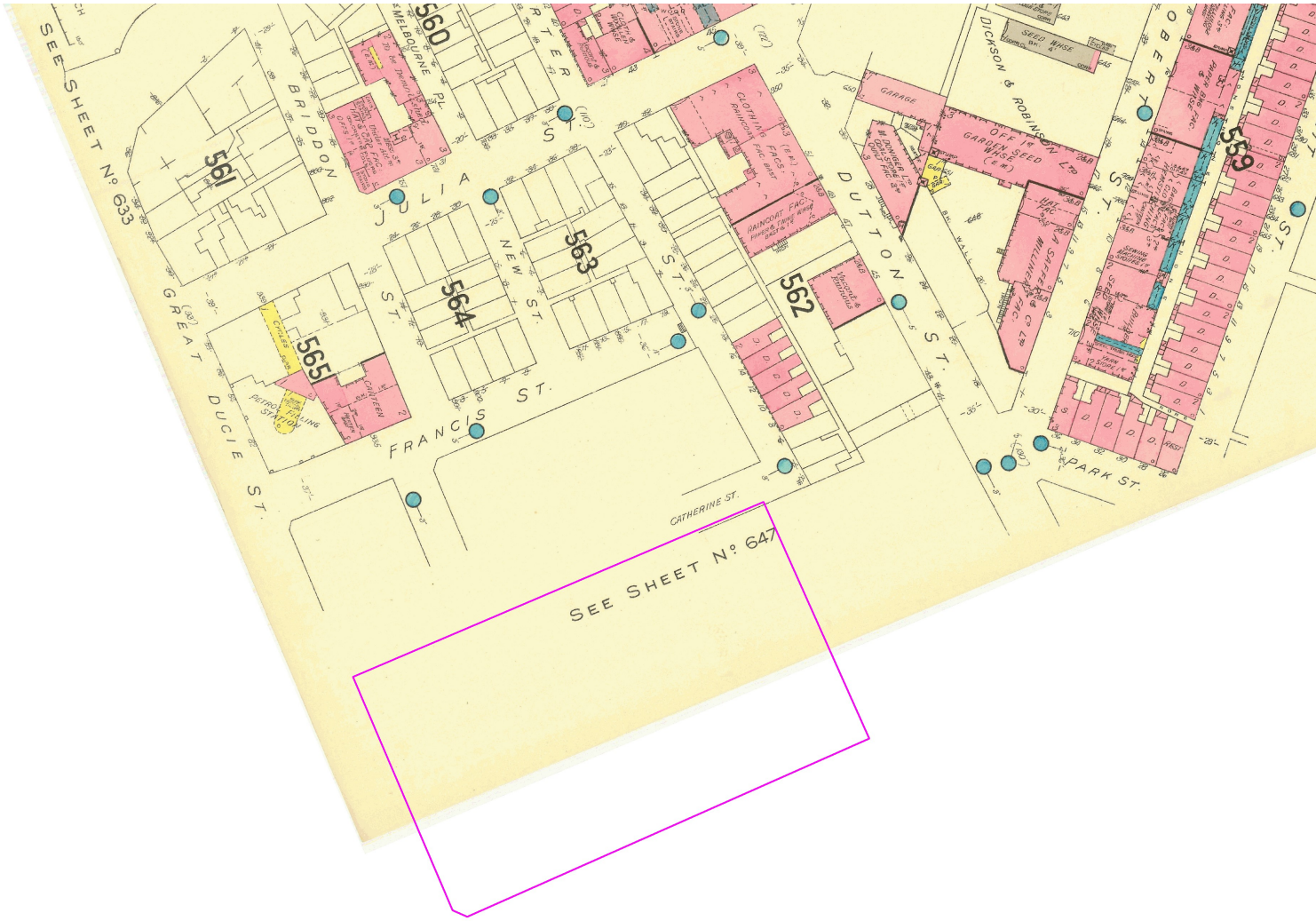
Published Date : 1962
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0 50m




Published Date : 1962
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0 50m




Published Date : 1948
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0 50m

# APPENDIX VI
# COAL AUTHORITY REPORT

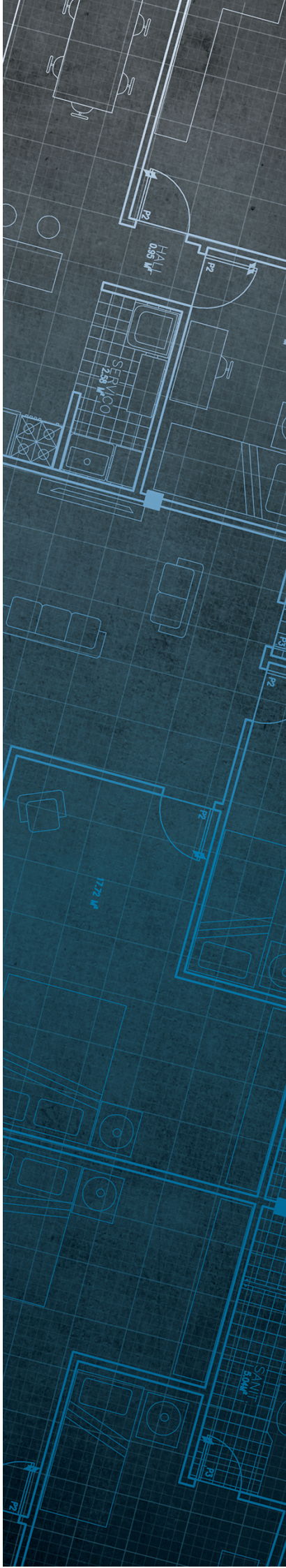
The Coal Authority

# Consultants

## Coal Mining Report

Great Ducie Street
Manchester
M3 1PT

| | |
|---|---|
| Date of enquiry: | **14 October 2021** |
| Date enquiry received: | **14 October 2021** |
| Issue date: | **14 October 2021** |
| Our reference: | **51002694223001** |
| Your reference: | **15175- BH- G** |



# Consultants

# Coal Mining Report

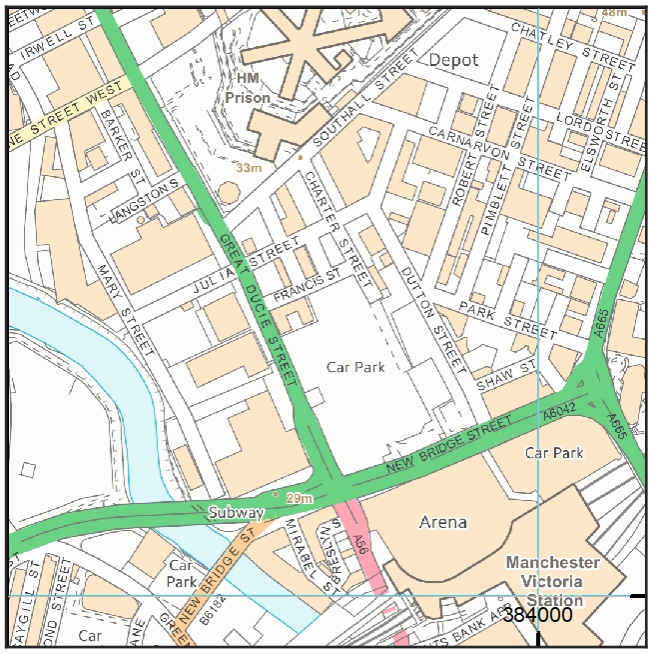
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

**Client name**

E3P

**Enquiry address**

Great Ducie Street
Manchester
M3 1PT




Approximate position of property

Map data

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200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

# Section 1 – Mining activity and geology

### Past underground mining
No past mining recorded.

### Probable unrecorded shallow workings
None.

### Spine roadways at shallow depth
No spine roadway recorded at shallow depth.

### Mine entries
None recorded within 100 metres of the enquiry boundary.

### Abandoned mine plan catalogue numbers
None available.

### Outcrops
No outcrops recorded.

### Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

### Opencast mines
None recorded within 500 metres of the enquiry boundary.

### Coal Authority managed tips
None recorded within 500 metres of the enquiry boundary.

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# Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

### Site investigations
None recorded within 50 metres of the enquiry boundary.

### Remediated sites
None recorded within 50 metres of the enquiry boundary.

### Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

### Mine gas
None recorded within 500 metres of the enquiry boundary.

### Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

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# Section 3 – Licensing and future mining activity

### Future underground mining
None recorded.

### Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

### Court orders
None recorded.

### Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

### Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

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

### Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

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# Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

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# Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

### Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

### Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

### Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

### Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

### Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

### Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

### Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

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### Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

### Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

### Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

### Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

### Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

### Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

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### Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

### Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

### Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

### Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

### Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

### Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

### Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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The Coal Authority

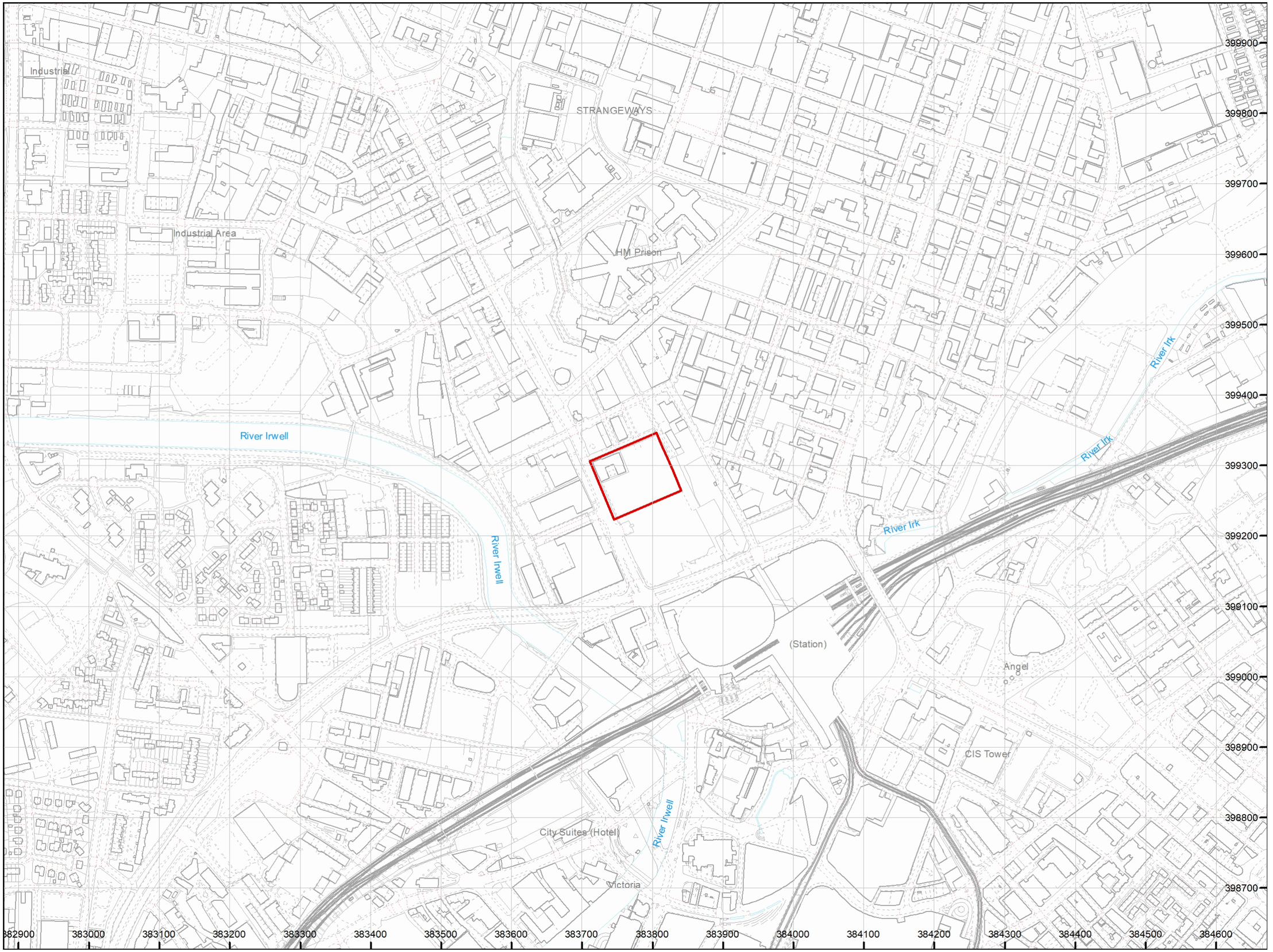
# Summary of findings

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The map highlights any specific surface or subsurface features within or near to the boundary of the site.

## Key

Approximate position of the enquiry boundary shown




**How to contact us**
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+44 (0)1623 637 000 (International)
www.groundstability.com