



**PHASE I GEO-
ENVIRONMENTAL
DESK STUDY**

**Proposed Development
Rose Place
Liverpool
L3 3BN**

September 2017

Report Ref: 10/1063/001

Prepared on Behalf of:

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PHASE 1 GEO-ENVIRONMENTAL DESK STUDY REPORT ROSE PLACE, LIVERPOOL

Report Reference: 10/1063/001

Date: September 2017

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EXECUTIVE SUMMARY

Client	Impel Contracts Ltd
Location	Off Rose Place, Liverpool OS Grid Reference 335070, 391440
Description	The site forms a roughly rectangular shaped parcel of land covering an area measuring approximately 0.25 hectares and is currently occupied by an industrial unit and car parking.
Development	The proposed development will comprise a 7 to 8 story, 122 units apartment block with commercial unit car parking and communal space.
Site History	<p>The historical OS maps dating back to 1850 indicate that the site was first occupied by a flour cloth manufactory until the late 1800s when the site was used as a horse repository. In the early 1900s, the site became a furniture depository which was subsequently demolished during world war two. Later on, the site was developed as part of the adjoining bakery, becoming a works in the early 1980s and a depot in the early 1990s.</p> <p>The surrounding area has been occupied by mixed residential and industrial land with mills, timber yards, warehouses, depots, engineering works, builder yards and garages all located within close proximity to the site.</p>
Geology	Geological maps indicate that the site is not underlain by superficial deposits with solid strata comprising sandstone of the Helsby Sandstone Formation. Up to 2.9m of Made Ground deposits are indicated within the local area from historical borehole logs.
Mining	The site is not indicated to be affected by historic coal mining.
Environmental Setting	<p>According to the Environment Agency groundwater vulnerability maps solid strata located beneath site are classified as a Principal Aquifer. The site is not located within a Groundwater Source Protection Zone and there is one groundwater abstraction point within 500m of the site. The nearest surface water feature is a pond located 569m to the north of the site. The nearest tertiary watercourse is located 616m to the north associated with the pond.</p> <p>The site is not located within a nitrate vulnerable zone.</p> <p>There is a world heritage site 537m to the south with the buffer zone 257m to the south.</p>
Landfilling	<p>There are no historical landfill sites, BGS or Local Authority recorded landfill sites are recorded within 500m.</p> <p>Three Licensed Waste Management Facilities and three Registered Waste Treatment / Disposal Sites are located within 500m of the site.</p> <p>There are no areas of Potentially Infilled Land located within 500m of the site.</p>
Unexploded Ordnance	Due to significant changes to the site and surrounding area before and after World War II it can be assumed that the area may have been effected by bombing during the war. A UXO risk assessment should be carried out for the site to identify any risks.
Further Works	<p>The Phase 1 Risk Assessment and Preliminary Conceptual Site Model have identified potential contamination sources, pathways and receptors. We would therefore recommend that the following Phase 2 investigations are undertaken as a minimum:</p> <ul style="list-style-type: none"> • Carry out Unexploded Ordnance Risk Assessment to see if a risk is present during intrusive works from UXO. • The drilling of boreholes in the location of proposed new structures to assess the nature and depth of any Made Ground soils present beneath the site.

	<ul style="list-style-type: none">• Soil samples should be recovered and submitted for chemical testing to comprise a minimum of pH and metals, asbestos screening, PAH and TPH.• The ground investigation should allow for excavations/boreholes to be taken through any Made Ground soils and into the underlying natural strata. In-situ testing should be carried out during drilling to provide adequate recommendations for foundation design.• We would recommend the installation of a minimum of three gas monitoring wells in the location of the proposed new structures, with provision for an initial 6 monitoring visits carried out over a 2 month period in accordance with CIRIA Report C665.
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1.0 INTRODUCTION

1.1 Background

Clancy Consulting Limited has been instructed by Impel Contracts Ltd to carry out a Phase 1 Desk Study for a site located off Rose Place in Liverpool. A site location plan is presented as Drawing No. 10/1063/001 in Appendix I.

We understand that the site is being considered for redevelopment to include a new 122 unit apartment block over 7 to 8 storeys with commercial unit, communal space and car parking.

1.2 Objectives

The objectives of this investigation are summarised below:

- Provide a review of the sites land use history by reference to ordnance survey maps of the area.
- Assess the environmental setting, geology, hydrology, hydrogeology, mining and subsidence history of the site and surrounding area.
- Develop a detailed 'preliminary risk assessment' and 'conceptual site model' with regard to potential contamination sources, pathways and receptors.
- Consider the potential risk to end users of the site from hazardous ground gas.
- Provide recommendations regarding the requirement for further investigations, if required, to satisfy the Local Planning Authority.

1.3 Limitations of the Study

Clancy Consulting Limited cannot be held responsible for any omissions, misrepresentation, errors or inaccuracies with the supplied third party report information. The report is written in the context of an agreed scope of work and budget and should not be used in a different context. New information or improved practices and changes in legislation may require a reinterpretation of the report in whole or in part.

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2.0 DESK STUDY

2.1 Sources of Information

Background information was sought from the following sources:

- Ordnance Survey historical maps (selected copies included in Appendix II).

- British Geological Survey (BGS) Sheets (Appendix III).
- Environment Agency Groundwater Vulnerability Maps (Appendix IV).
- Environmental datasheets (Appendix V).

2.2 Site Setting and Description

The site is located off Rose Place in Liverpool at OS Grid Reference 335070, 391440. The site forms a roughly rectangular shaped parcel of land covering an area of 0.25 hectares and is currently occupied by an industrial unit and car parking.

The site bound to the north by a storage yard and grassed area, to the east by industrial units, to the south by Rose Place and to the west by St Anne Street with additional industrial units, roadways and housing beyond.

2.3 Site History

In order to investigate the development history and previous land uses at the site and surrounding area, historical Ordnance Survey (OS) maps were examined. Selected copies of the maps are presented in Appendix II.

Table 1 below is not intended to provide a comprehensive review of all the changes which have occurred at the site and instead provides a summary of the most salient points relating to the development history of the site. The most significant historical land uses are highlighted in bold text for ease of reference.

Table 1 – Site History

Date(s)	Site	Surrounding Land
1850 – 1851	The site is occupied by a flour cloth manufactory .	The surrounding area is a mix of residential and commercial / industrial land use with North Hey Market 110m to the north and St Martins Market 260m to the north west. St Anne's Church and grave yard is 20m to the south west with an Roman Catholic Church with associated grave yard 60m to the west. There are breweries 60m south, 150m south west, 160m south and south east and 260m to the south. Soaperys are located 210m and 280m to the south west. Timber yards are located 100m north east, 150m north west, 180m west, 190m north and 250m north. Mills and works are shown 160m east, 160m and 210m to the south east. A railway station is located 750m to the south.
1891 – 1899	The site is now shown as a Horse Repository .	St Anne's Church and grave yard 20m to the south has been demolished and re-built and League hall is located 40m to the south west. North Hay Market 110m to the north has expanded and is now called Wholesale Vegetable and Hay Market . Timber yards with associated cranes are located 110m and 200m to the east. The soaperys 210m and 280m to the south west are now shown as a tobacco manufactory and mineral water works . A disused brewery is located 110m to the north with breweries 160m to the south west, 180m and 250m to the west. The brewery and mill 160m to the south east are now shown as a flour mill and the timber yard

Date(s)	Site	Surrounding Land
		100m to the north east, brewery 150m to the south west and the works 210m to the south east are no longer shown. There is a black lead and blue works 260m to the south. Sugar refineries are shown 240m to the west and there is a tannery 280m to the west. There is a wagon works 260m to the north. Additional housing has been built 220m and 300m to the north east and the housing 120m to the north west has been re-developed as Victoria square.
1908 - 1910	The Horse Repository is now a Furniture Depository .	Mineral water works are located 30m to the east and 140m to the south. There is a timber yard 50m to the south east and saw mill 150m to the south. The timber yards 110m and 200m to the east, 180m to the west are no longer shown. The disused brewery 110m to the north has been demolished and the wagon works 260m to the north is no longer marked. The sugar refineries 240m to the west are no longer shown. There is a leather works 140m to the south west. The mineral water works 280m to the south west has become part of the tobacco manufactory . There is a glass stores 180m to the south. The black lead and blue works 260m to the south is no longer shown.
1927	No significant change.	The mineral water works 30m to the east is now shown as a bakery . There is an iron works 70m to the south, confectionary works 110m to the north east and a timber yard 280m to the south. The buildings immediately to the north east, 50m to the north, 200m and 300m to the north east have been demolished. The buildings 200m to the south have been re-developed and the brewery 260m to the south is no longer marked.
1954 - 1955	The buildings on the eastern boundary along with in the center and west of the site are no longer shown.	The bakery 30m to the east has expanded and there are warehouses 50m to the north, 120m to the east and 240m to the west. The confectionary works 110m to the north east is now shown as a works . Ruins and areas of demolished buildings are shown immediately to the north, 80m to the west, from 100m to the south west and east. Some of the buildings associated with the Wholesale Fruit and Vegetable Market have been demolished / re-developed and the tobacco manufactory 210m to the south west has been partially re-developed. Areas of new housing are shown from 190m to the south east. Garages are shown 80m to the south, 210m to the east and 270m south. Factories are shown 140m and 240m to the south, 280m to the east. The flour mill 160m to the south east is now shown as a bakery .
1958 - 1962	A ramp is shown in the north of the site.	The warehouse 50m to the north is now shown as a ruin . There are works 20m to the east, 70m to the south east and north east. There is a scrap metal yard 140m to the north east. The glass stores 180m to the south is now shown as a warehouse and there are warehouses and factories 240m to the south

Date(s)	Site	Surrounding Land
		and south east. The tannery 280m to the west is now shown as a works and St Martins Market 260m to the north west has been re-developed as housing .
1968 – 1976	The bakery located 30m to the east of the site has extended occupying the center and east of the site.	A paper works is located 20m to the south of the site. A scrap works is located 190m to the south east, an engineering works and rubber works 200m to the north east and a timber storage depot 250m to the south. Schools and colleges have been built 240m and 290m to the north east and 290m to the south west. The remaining buildings immediately to the north of the site have been demolished along with the residential buildings from 130m to the north west and 150m to the east. Scotland Road 200m to the west and St Anne Street 30m to the north have been widened with several of the commercial / residential premises adjacent demolished / re-developed as part of the construction of the A59 ring road . The brewery 160m to the south east is no longer shown and the factory and warehouses 240m to the south have been demolished.
1983 - 1985	The bakery is now shown as a works .	Works have been built 20m to the north, 70m and 150m to the north east. The warehouse 100m to the east and the bakery 160m to the south east are now shown as a works . St Anne's Church 20m to the south has been re-developed with unspecified buildings and Roman Catholic Church 60m to the west has been re-developed as a primary school . A builders yard is shown 70m to the south east and an unspecified building has been built 150m to the north west. The housing development 190m and 230m to the south east have been demolished.
1987 – 1988	No significant change.	The works 20m to the north is now shown as a garage and additional works have been built 170m to the north east. A housing development has been created 130m to the south west 210m to the south.
1991 – 1996	The works is now shown as a depot .	The undeveloped land 160m to the east and 240m to the south east are shown as parks . The scrap yard and warehouses 190m to the south east have been demolished and the unspecified building 150m to the north west is shown as Kingsway Industrial Park .
2006 – 2017	No significant change.	No significant change.

2.4 Unexploded Ordnance (UXO) Risk Assessment

From a review of the sites development history there have been changes to the site or surrounding area before and after World War II with ruins and areas of demolished buildings both on site and within the surrounding area. It can therefore be assumed that the area was subject to bombing during the war and that the risk of unexploded ordnance being present on the site is considered to be moderate to high.

2.5 Geology

The 1:50,000 British Geological Survey (BGS) scale map for the area (096 Liverpool) indicates that the site is not underlain by superficial deposits with solid strata comprising sandstone of the Helsby Sandstone Formation.

Historical BGS boreholes within close proximity to the site indicate up to 2.9m of Made Ground soils including brick fill type material generally underlain by sandstone bedrock.

According to the 1:50,000 Artificial Ground maps, an area of worked ground is located 113m to the north west associated with the construction of the A59 with areas of artificial ground / made ground 234m to the south east and 316m to the north.

Copies of the geological plans are attached in Appendix III.

2.6 Soil Geochemistry

According to the BGS National Geoscience Information Service no elevated background concentrations of arsenic, cadmium or nickel are anticipated in the natural soils beneath the site. Slightly elevated naturally occurring lead and chromium concentrations may however be present. Lead can be anticipated at concentrations between 300mg/kg and 600mg/kg with chromium at concentrations between 60mg/kg and 90mg/kg.

2.7 Mining & Ground Stability

According to Coal Authority records the site is not located in an area affected by coal mining.

There are no BGS recorded mineral sites located within 500m of the site.

2.8 Hydrogeology

According to the Environment Agency groundwater vulnerability maps the solid strata located beneath the site is classified as a Principal Aquifer.

The site is not located within a Groundwater Source Protection Zone.

There is one groundwater abstraction point within 500m of the site located 407m to the west at Blackstock Street, Liverpool operated by W F Doyle & Co Ltd.

Copies of the hydrological site sensitivity maps are included in Appendix IV.

2.9 Hydrology

The nearest surface water feature is a pond located 569m to the north of the site.

The nearest tertiary water course is an inland river 616m to the north, associated with the pond 569m to the north. There is a canal 927m to the north west.

There are no recorded surface water abstractions within 500m of the site.

A Pollution Incident of Controlled Waters is located 459m to the west. It is a Category 3 – Minor Incident, no other information is available.

One Water Industry Act Referral is located 446m to the north associated with N and P Platers Ltd and the discharge of special category effluents.

2.10 Flood Risk

According to Environment Agency records the site is located within an area of limited potential for groundwater flooding to occur.

2.11 Radon Risk Potential

The Radon Guidance on protective measures for new dwellings indicates that the site is not in an area affected by radon. Basic radon gas protective measures are therefore not required.

2.12 Landfill Sites

There are no historical landfill sites, BGS or Local Authority recorded landfill sites are recorded within 500m.

Three Licensed Waste Management Facilities are located within 500m of the site. They are 161m to the north east registered to Williams Brothers Scrap Metals Ltd associated with mixed metal recycling, 240m to the south east registered to Mr John Short and Mr John Lee Timmings and 439m to the west registered to W F Doyle & Co Ltd associated with household, commercial and industrial transfer stations.

There are three Registered Waste Treatment / Disposal Sites are located within 500m of the site. The closest licence is 155m to the north east registered to Williams Brothers Scrap Metal Ltd with a second 216m to the east registered to Lyons bros (metals) Ltd. Both licences were issued in 1988 and authorised to accept scrap metal, vehicles and white goods. A third site is located 386m to the west associated with W F Doyle & Co Ltd dated 1990. The authorised waste is solid construction or demolition industrial wastes. Prohibited wastes include commercial, household, liquid / sludge and special wastes.

There are no areas of Potentially Infilled Land located within 500m of the site.

2.13 Industrial Land Uses

A number of industrial and commercial directory entries are located within 250m of the site including joinery manufacturers, cleaning materials, car dealers, garage services, sports equipment manufacturers and other light industrial and commercial premises.

No Integrated Pollution Prevention and Control or Local Authority Integrated Pollution Prevention and Control permits are recorded within 500m of the site.

Three Local Authority Pollution Prevention and Control permits are recorded within 500m of the site. The closest is 127m to the east registered to Palatine Engraving, dated 2008 associated with the coating of metal and plastic. The license has been revoked. The other two permits are registered to W F Doyle & Co Ltd 430m to the west. Both are in association with mobile screening and crushing processes. The status of one is shown as exempt from APC, the other has been revoked.

A comprehensive list of the waste management and industrial sites located within 1km of the site are presented in the Environmental Datasheets in Appendix V.

2.14 Sensitive Land Uses

The site is not indicated to be within a nitrate vulnerable zone.

Liverpool – Maritime Mercantile City world heritage site is 537m to the south of the site with the buffer zone 257m to the south.

3.0 PHASE 1 RISK ASSESSMENT

3.1 General

The “suitable for use” approach is adopted for the assessment of contaminated land and remedial measures are only undertaken where unacceptable risk to human health or the environment can be proven when taking into account the proposed use of the site and environmental setting.

A risk assessment process should be carried out to determine potential hazards to human health and the environment and be based on the “source” “pathway” “receptor” principal. For a potential risk to be present there must be a viable pollutant linkage whereby a contamination source may impact upon a receptor. The absence of one or more of these key components (source, pathway or receptor) prohibits a viable pollution linkage being formed.

3.2 Preliminary Conceptual Site Model

In accordance with CLR11 “Model Procedures for the Management of Land Contamination” (2004) and BSI 10175 “Code of Practice for Investigation of Potentially Contaminated Land” (2011), a Preliminary Conceptual Site Model was developed to identify potential contamination sources, migration pathways and receptors within the study area.

The site has a limited development history but the following potential contamination sources have been identified:

- Made Ground associated with the construction and subsequent demolition of the historical buildings on site and in the surrounding area.
- Possible contamination associated with any Made Ground on site and with historic land use including flour cloth manufactory, works and depot. Contaminants may include asbestos, heavy metals and hydrocarbons.
- Possible migration of mobile contamination from off-site sources including mills, works, warehouses and garages.
- Potential generation of hazardous ground gas from any Made Ground soils on site or in the surrounding area along with graveyards 20m to the south and 60m to the west.
- Potential for Unexploded Ordnance (UXO) beneath the site.

We have referred to CLR 8 “Potential Contaminants for the Assessment of Contaminated Land” and the primary contaminants of concern include metals, hydrocarbons (PAHs and TPHs), PCBs, asbestos and hazardous ground gas from filled ground both on and off-site along with graveyards within the local area.

Potential pollutant pathways include:

- Dermal contact.
- Inhalation of particulates.
- Migration of leachable contaminants.
- Migration of hazardous ground gases into new structures.
- Acidic ground conditions affecting building infrastructure.

The following contamination receptors have been identified:

- Future site users.
- Construction workers.
- Controlled waters (surface water courses and aquifer).
- Buildings and infrastructure.

A preliminary risk assessment can be carried out using guidance outlined in Section 6.3 of CIRIA Document C552 “Contaminated Land Risk Assessment – A Guide to Good Practice” (2001).

For a risk to be present there must be a viable pollutant linkage whereby a contamination source can impact on a receptor via a pathway. To carry out the risk assessment an estimate must be made of the potential severity of the risk and the likelihood of the risk occurring. The following Tables set out the criteria for this principal.

Table 2 - Severity of Risk

Severity	Description
Severe	Acute risk to human health likely to result in ‘significant harm’ i.e. very high concentrations of contamination or ground gases. Catastrophic damage to building i.e. by explosion from high gassing sites or VOC concentrations. Major pollution of controlled waters i.e. surface watercourses and Principal aquifers, source protection zones. Short term damage to ecosystems.
Medium	Long term risk to human health likely to result in ‘significant harm’ i.e. elevated concentrations of contaminants or ground gases. Pollution of sensitive controlled watercourses i.e. Principal or Secondary Aquifers. Significant effects on sensitive ecosystems or species.
Mild	Pollution of non-sensitive waters i.e. smaller surface watercourses or unproductive strata. Significant damage to crops, buildings, structures or services i.e. by explosion from sites with medium gassing potential, elevated concentrations of contaminants.
Minor	Non-permanent human health effects i.e. requirement for protective equipment during site works to mitigate health effects. Damage to non-sensitive ecosystems or species. Minor damage to buildings, structures or services.

Table 3 - Probability of Risk Occurring

Probability	Description
High Likelihood	Pollutant linkage may be present that appears very likely in the short term and risk is almost certain to occur in long term or evidence of harm to receptor exists.
Likely	Pollutant linkage may be present and is likely that the risk will occur over the long term.
Low Likelihood	Pollutant linkage may be present and there is a possibility of the risk occurring although no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur even in the long term are improbable.

Table 4 - Comparison of Risk & Probability

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

A summary of potential pollutant linkages and perceived risks for this site are outlined in the Table below:

Table 5 - Pollutant Linkages & Perceived Risk

Sources of Contamination	Pathways	Receptors	Risk
Possible inorganic and organic contaminants and asbestos from demolition of former buildings and historic site use.	Inhalation and dermal contact of soil particles during site construction works and by future end users.	Current site users	Very Low
		Future site users	Low / Moderate
		Construction workers during development	Low / Moderate
Migration of mobile contaminants from off-site sources, i.e. mills and works.	Potential movement of mobile contaminants through underlying strata to controlled waters. Migration of ground gases into proposed new structures at the site.	Principal Aquifer (solid strata)	Low / Moderate
Potential generation of hazardous gas from Made Ground on site and in surrounding area along with grave yards.		Future Site Users	Low
		Construction Workers During Development	Low
		Building Infrastructure	Low

The historical OS maps dating back to 1850 indicate that the site was first occupied by a flour cloth manufactory until the late 1800s when the site was used as a horse repository. In the early 1900s, the site became a furniture depository which was subsequently demolished during world war two. Later on, the site was developed as part of the adjoining bakery, becoming a works in the early 1980s and a depot in the early 1990s. The surrounding area has been occupied by mixed residential and industrial land with mills, timber yards, warehouses, depots, engineering works, builder yards and garages all located within close proximity to the site.

Given the development history of the site and surrounding area it is possible that some ground contamination will be present beneath the site. Made Ground soils could be present in the areas where former structures and localised concentrations of inorganic and organic contamination may be present.

Geological maps indicate that the site is not underlain by superficial deposits with solid strata comprising sandstone of the Helsby Sandstone Formation. BGS historic boreholes of the area indicate up to 2.9m of Made Ground soils within close proximity of the site underlain by weathered sandstone bedrock.

According to the Environment Agency groundwater vulnerability maps, the solid strata located beneath site is classified as a Principal Aquifer. The site is not located within a Groundwater Source Protection Zone. There is one groundwater abstraction point within 500m of the site. The nearest surface water feature is a pond located 569m to the north of the site and the nearest tertiary watercourse is located 616m to the north associated with the pond.

According to Environment Agency records the site is located within an area of limited potential for groundwater flooding to occur.

Regarding hazardous ground gas risk the site has been developed since the mid 1800s. Made Ground deposits are anticipated to be present beneath the site and the surrounding area has been subject to varied development which may have resulted in filled ground. Any filled ground could potentially contain organic materials with the potential to generate hazardous ground gases. In addition, grave yards have been identified 20m to the south and 60m to the west which could be viewed as sources of hazardous ground gases. As such, gas monitoring will be required as part of any future investigations and should be carried out in accordance with guidance presented in CIRIA C665.

Based on the desk study information the environmental setting of the site is considered to be of 'low' to 'moderate' risk due to the presence of the underlying aquifers. Given the residential nature of the development, the risk to human health can be considered to be 'high'.

4.0 CONCLUSIONS & RECOMMENDATIONS

The Phase 1 Risk Assessment and Preliminary Conceptual Site Model have identified potential contamination sources, pathways and receptors. We would therefore recommend that the following Phase 2 investigations are undertaken as a minimum:

- Carry out Unexploded Ordnance Risk Assessment to see if a risk is present during intrusive works from UXO.
- The drilling of boreholes in the location of proposed new structures to assess the nature and depth of any Made Ground soils present beneath the site.
- Soil samples should be recovered and submitted for chemical testing to comprise a minimum of pH and metals, asbestos screening, PAH and TPH.
- The ground investigation should allow for excavations/boreholes to be taken through any Made Ground soils and into the underlying natural strata. In-situ testing should be carried out during drilling to provide adequate recommendations for foundation design.
- We would recommend the installation of a minimum of three gas monitoring wells in the location of the proposed new structures, with provision for an initial 6 monitoring visits carried out over a 2 month period in accordance with CIRIA Report C665.

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Appendix I

Client Impel Contracts Ltd

Project Rose Place, Liverpool

Title Site Location Plan

Office Altrincham

Discipline Geo-environmental



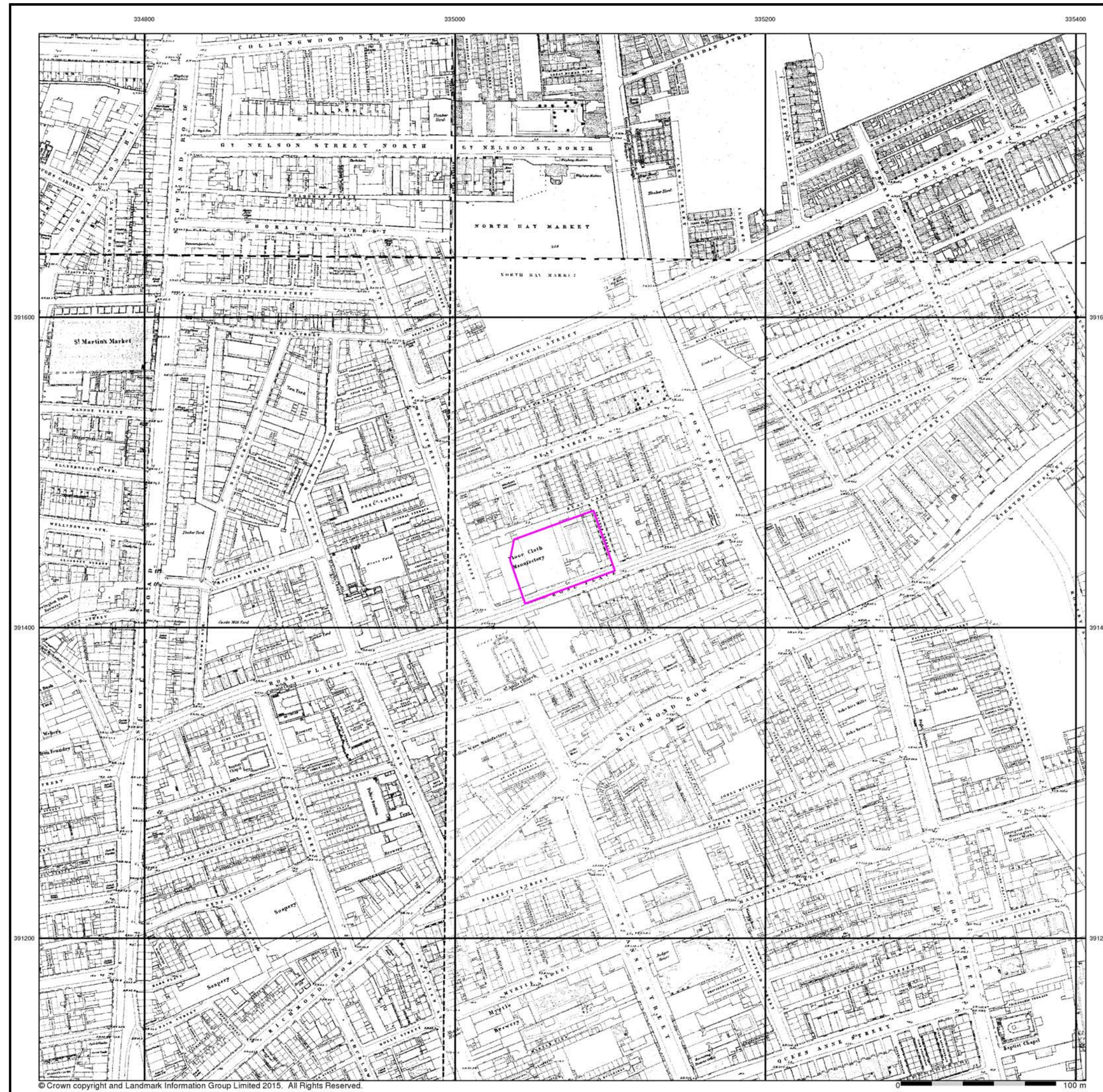
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REV	DATE	DESCRIPTION	BY	CHK.	APP.	Drawn	Date	Job number	Drawing number	Revision
Rev	Date	Description	By	Check	App.	SHP	Sep 2017	10/1063	001	A
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						Approved	Status			
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Appendix II



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Envirocheck®

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Lancashire And Furness

Published 1850

Source map scale - 1:1,056

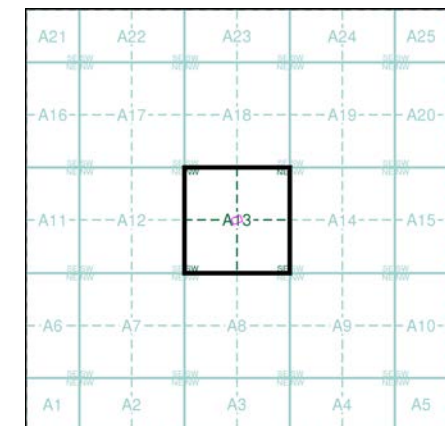
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the 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)

000_00_015 1850 1:1,056	000_00_016 1850 1:1,056
000_00_019 1850 1:1,056	000_00_020 1850 1:1,056

Historical Town Plan - Segment A13



Order Details

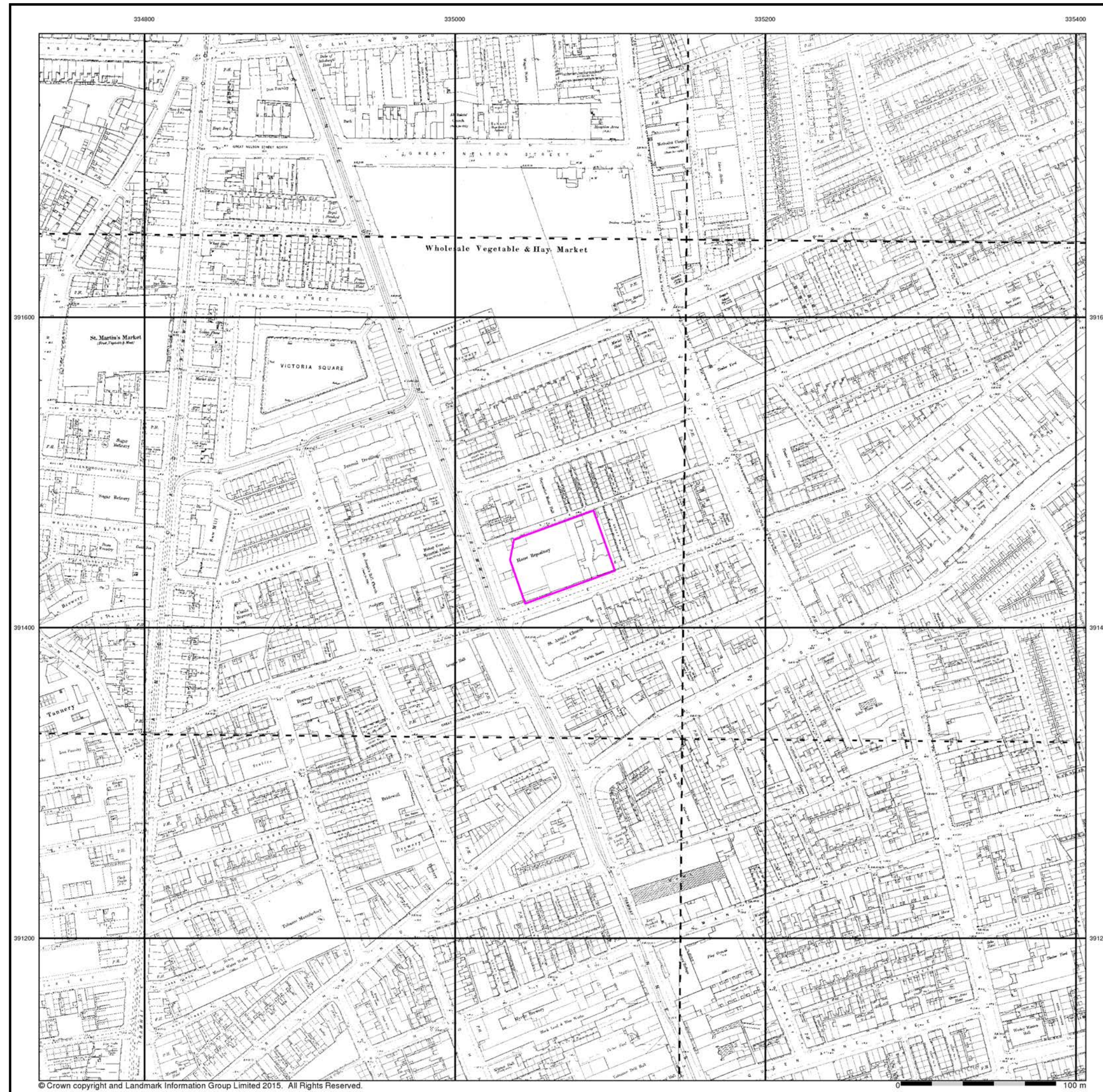
Order Number: 136100686_1_1
Customer Ref: 10/1063
National Grid Reference: 335070, 391440
Slice: A
Site Area (Ha): 0.25
Search Buffer (m): 0

Site Details

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Lancashire And Furness

Published 1891

Source map scale - 1:500

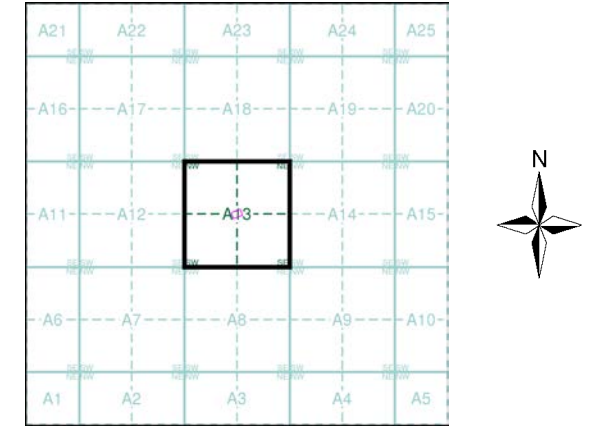
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to complement the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped 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)

106_10_008	106_10_009
1891	1891
1:500	1:500
106_10_013	106_10_014
1891	1891
1:500	1:500
106_10_018	106_10_019
1891	1891
1:500	1:500

Historical Town Plan - Segment A13



Order Details

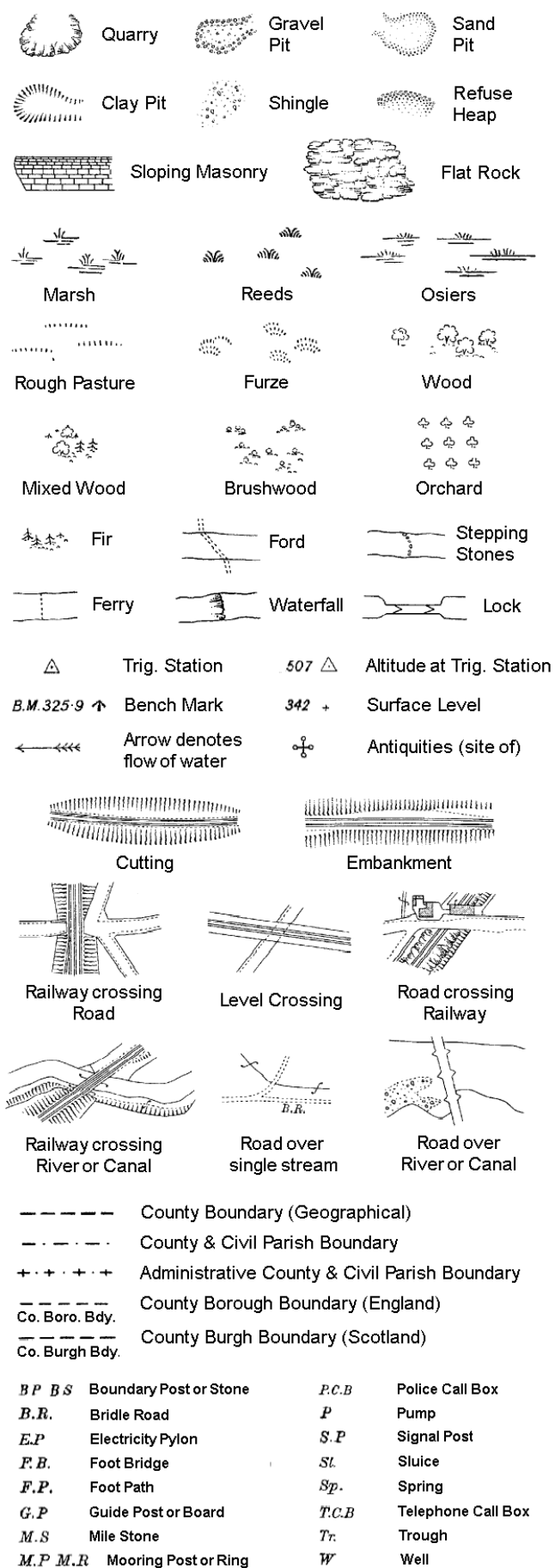
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Customer Ref: 10/1063
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Search Buffer (m): 0

Site Details

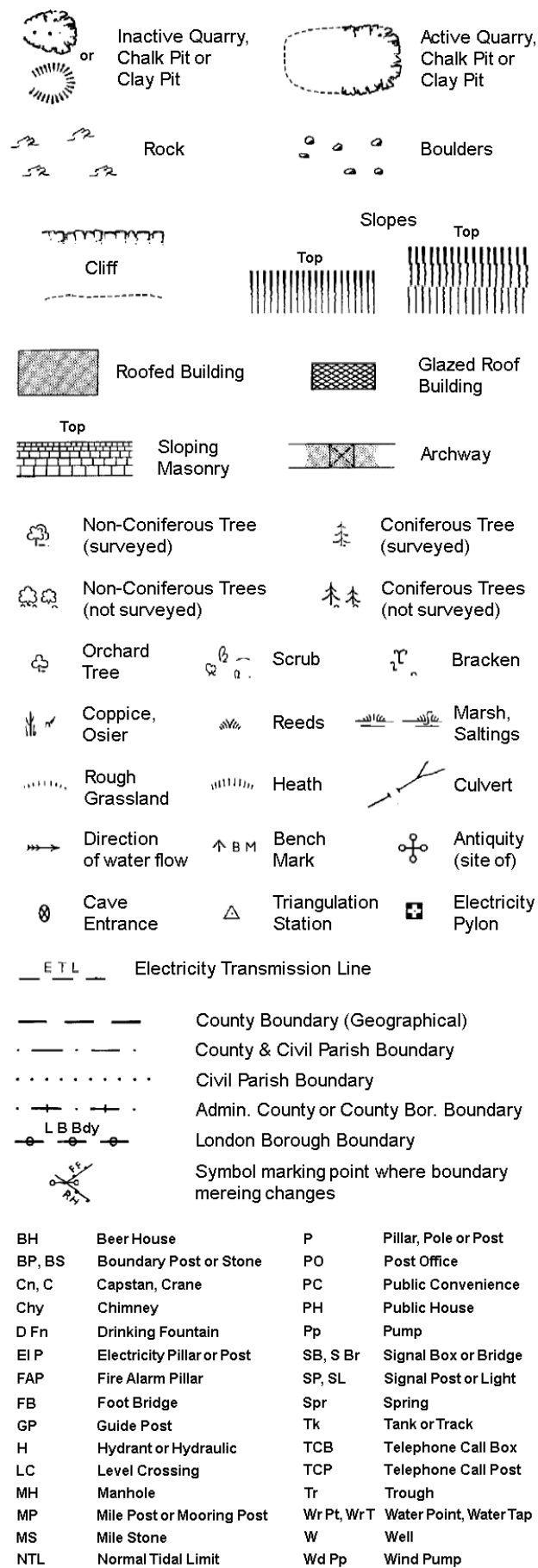
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Historical Mapping Legends

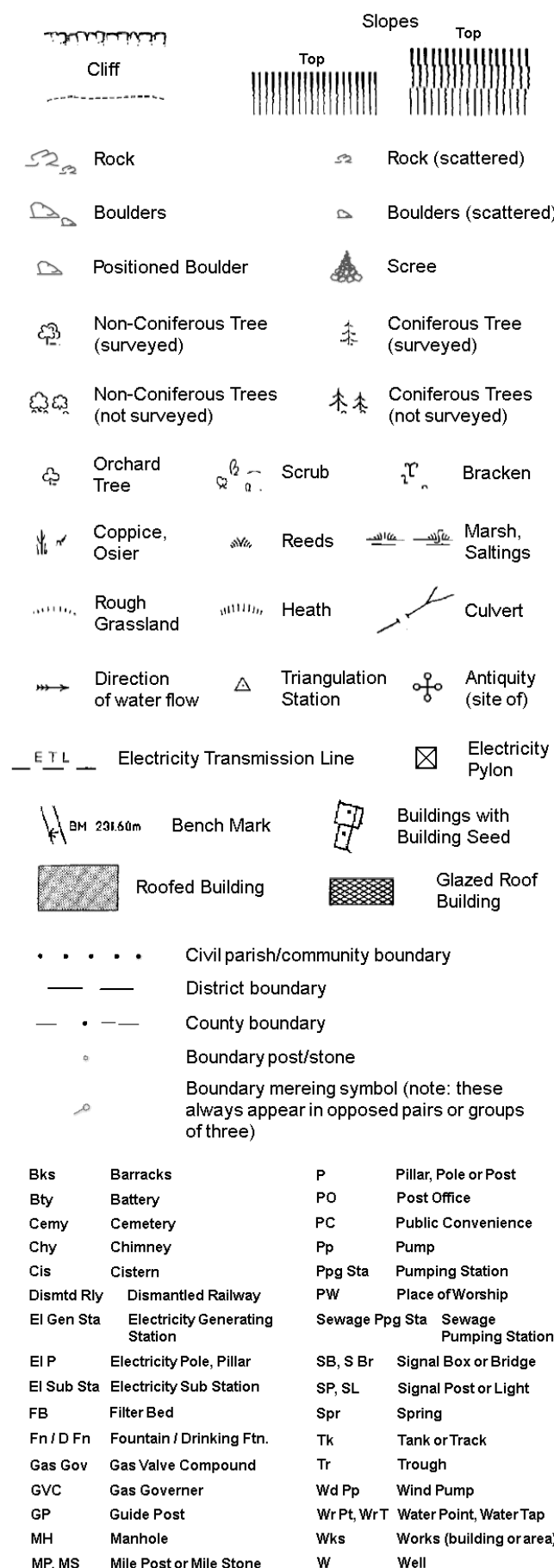
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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



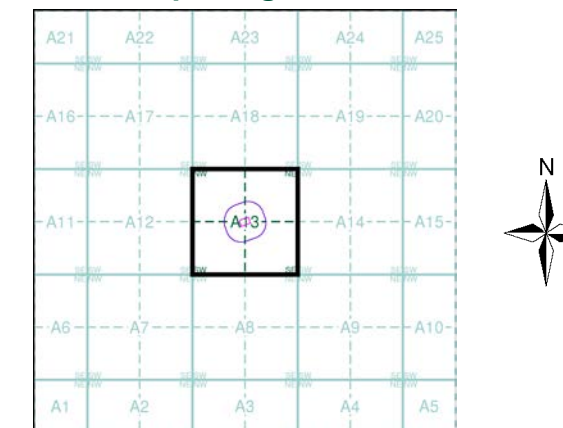
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Page
Cheshire	1:2,500	1876	2
Lancashire And Furness	1:2,500	1893	3
Cheshire	1:2,500	1899	4
Lancashire And Furness	1:2,500	1908	5
Cheshire	1:2,500	1911	6
Lancashire And Furness	1:2,500	1927	7
Cheshire	1:2,500	1935	8
Ordnance Survey Plan	1:1,250	1954	9
Ordnance Survey Plan	1:2,500	1955	10
Ordnance Survey Plan	1:1,250	1958 - 1962	11
Ordnance Survey Plan	1:2,500	1961	12
Ordnance Survey Plan	1:1,250	1968 - 1976	13
Ordnance Survey Plan	1:2,500	1971	14
Supply of Unpublished Survey Information	1:1,250	1973 - 1975	15
Ordnance Survey Plan	1:1,250	1975 - 1990	16
Additional SIMs	1:1,250	1983 - 1985	17
Additional SIMs	1:1,250	1987 - 1988	18
Ordnance Survey Plan	1:1,250	1991	19
Additional SIMs	1:1,250	1991	20
Large-Scale National Grid Data	1:1,250	1993	21
Large-Scale National Grid Data	1:1,250	1993 - 1995	22
Large-Scale National Grid Data	1:1,250	1996	23
Historical Aerial Photography	1:2,500	2000	24

Historical Map - Segment A13



Order Details

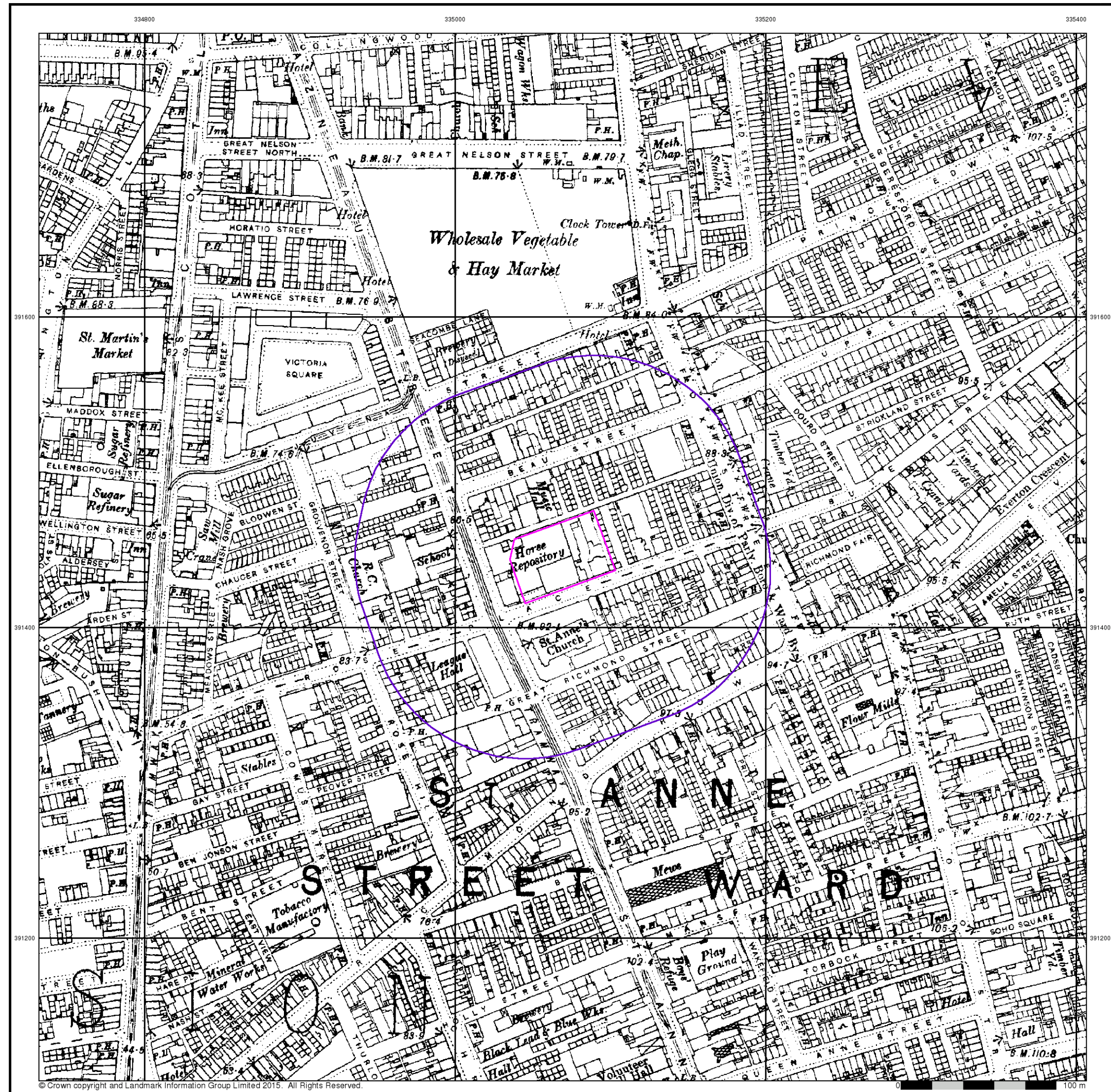
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Customer Ref: 10/1063
National Grid Reference: 335070, 391440
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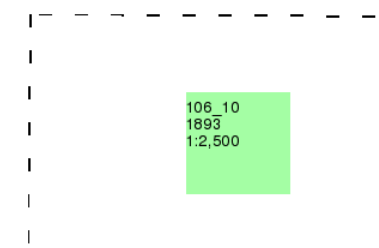
Lancashire And Furness

Published 1893

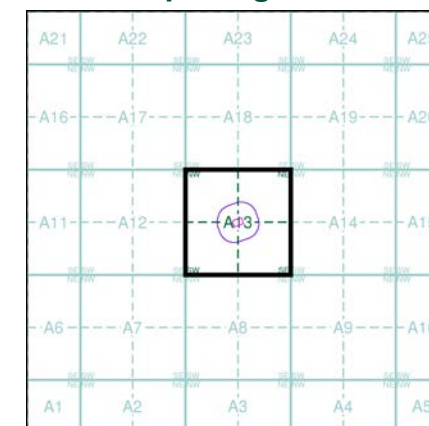
Source map scale - 1:2,500

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

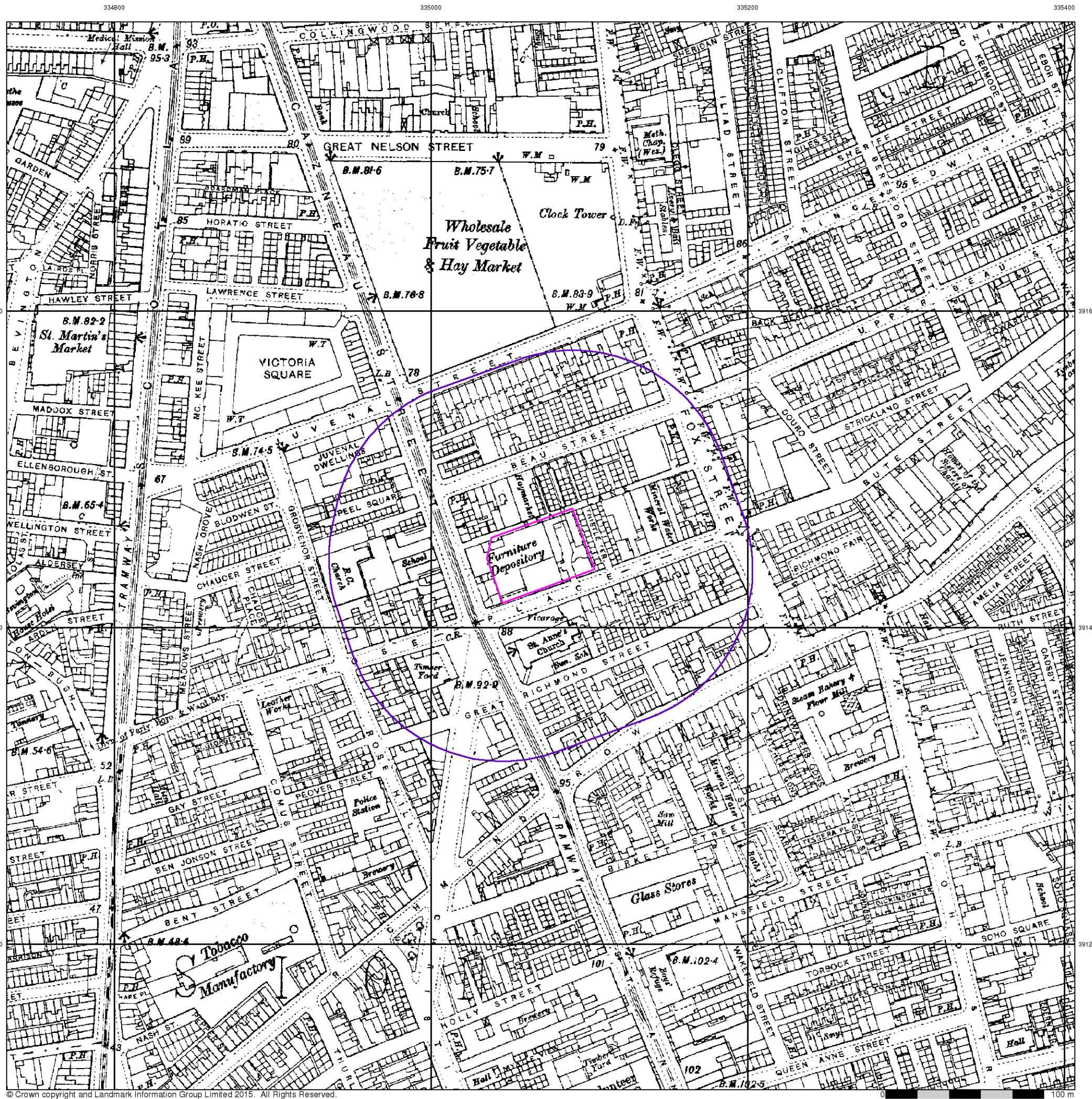


Order Details

Order Number: 136100686_1_1
Customer Ref: 10/1063
National Grid Reference: 335070, 391440
Slice: A
Site Area (Ha): 0.25
Search Buffer (m): 100

Site Details

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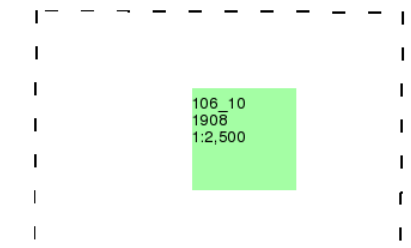
Lancashire And Furness

Published 1908

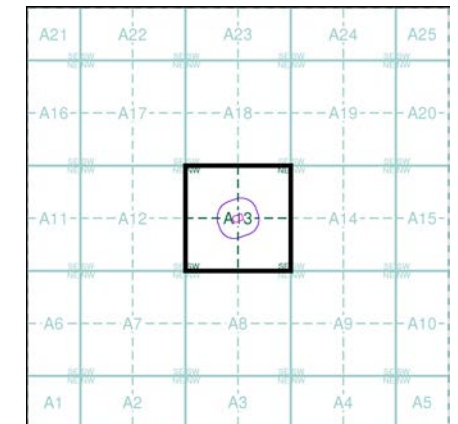
Source map scale - 1:2,500

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

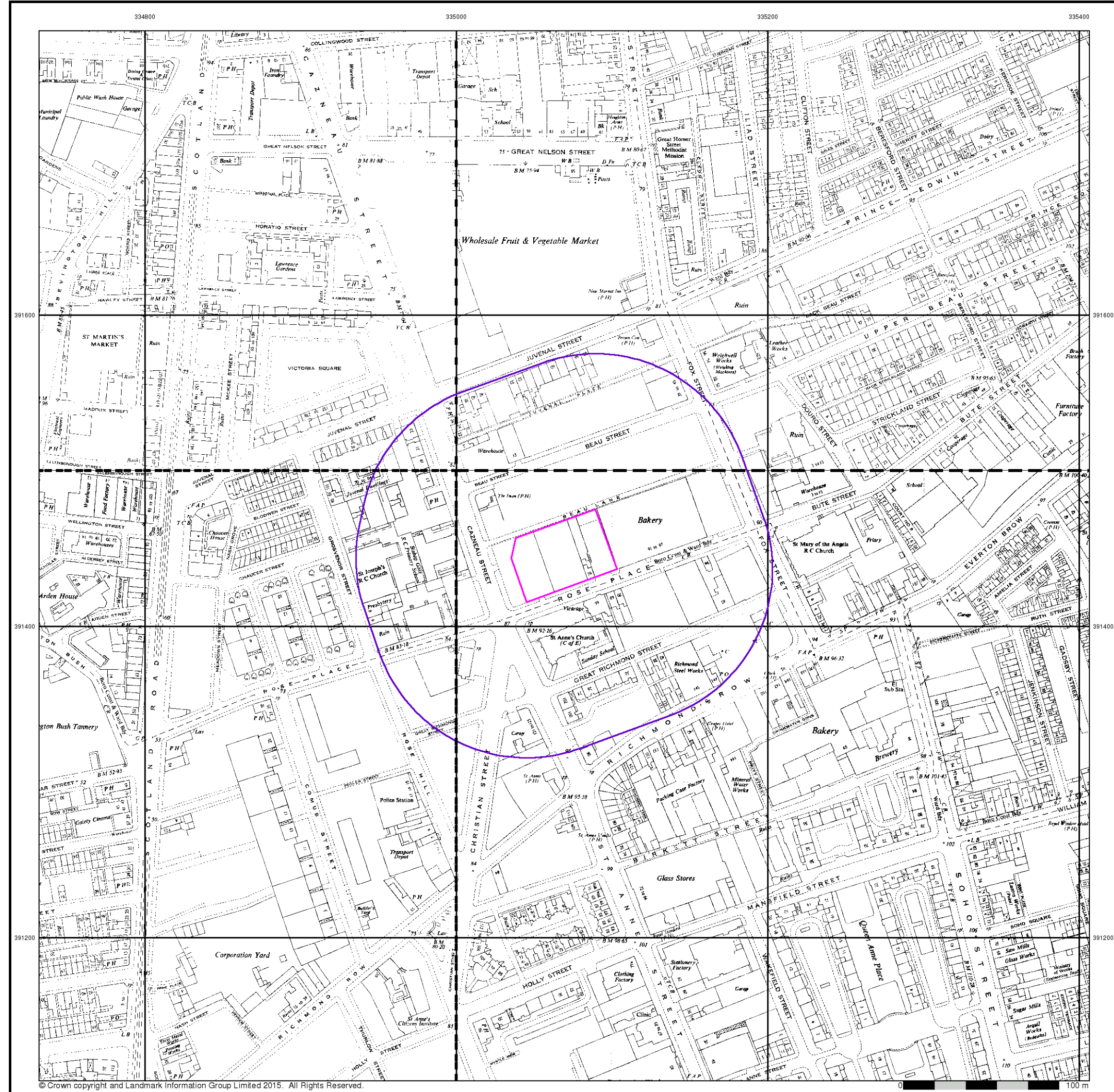
Order Number: 136100686_1_1
Customer Ref: 10/1063
National Grid Reference: 335070, 391440
Slice: A
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Ordnance Survey Plan

Published 1954

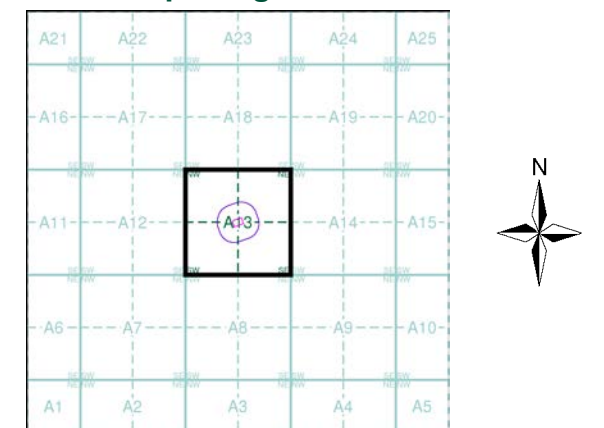
Source map scale - 1:1,250

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)

SJ3491NE	SJ3591NW
1954	1954
1:1,250	1:1,250
SJ3491SE	SJ3591SW
1954	1954
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 136100686_1_1

Customer Ref: 10/1063

National Grid Reference: 335070, 391440

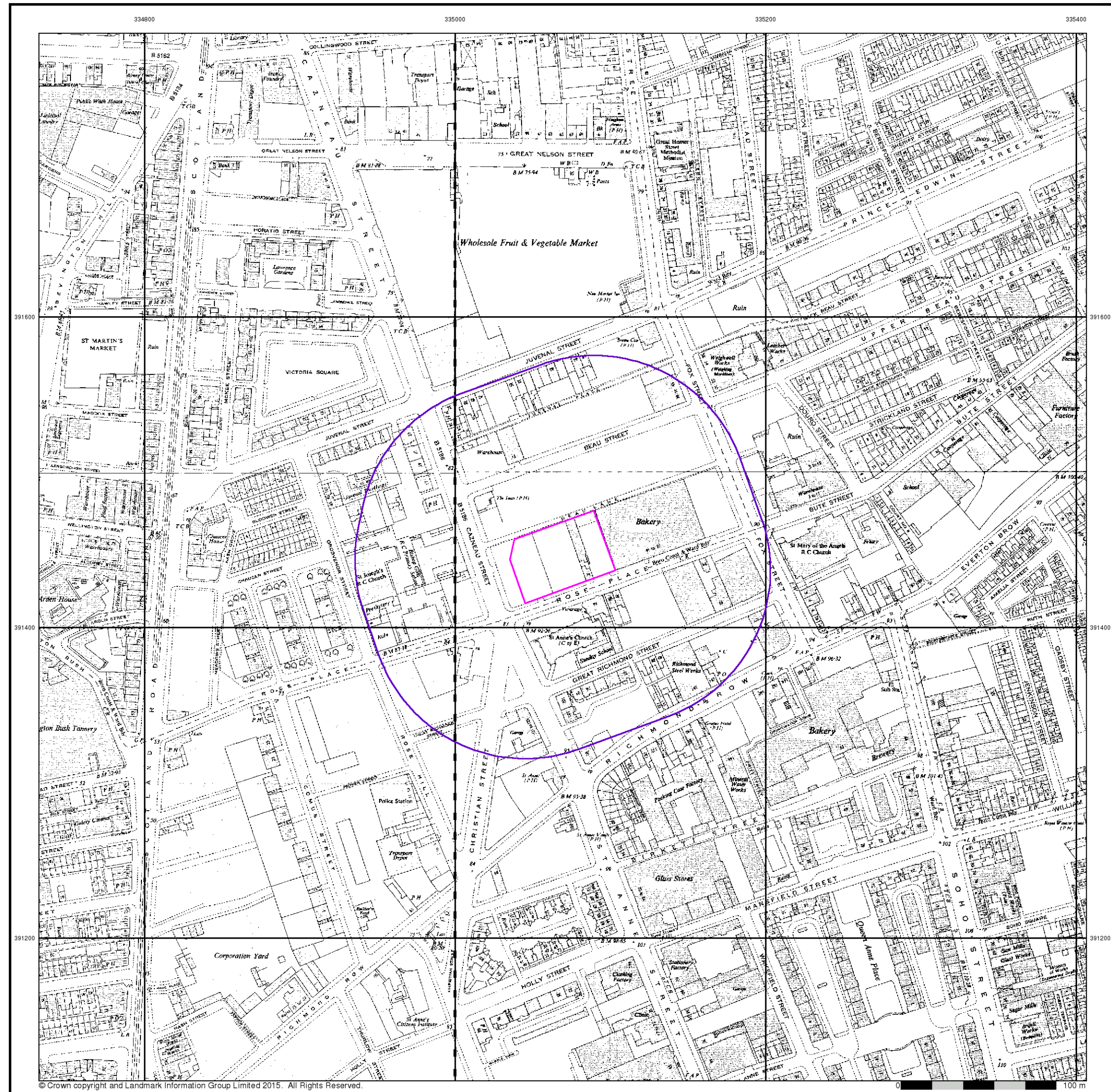
Slice: A

Site Area (Ha): 0.25

Search Buffer (m): 100

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Ordnance Survey Plan

Published 1955

Source map scale - 1:2,500

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Map Name(s) and Date(s)

SJ3491 1955 1:2,500	SJ3591 1955 1:2,500
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Historical Map - Segment A13

N

Order Details

Order Number:	136100686_1_1
Customer Ref:	10/1063
National Grid Reference:	335070, 391440
Slice:	A
Site Area (Ha):	0.25
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