Outline Structural Engineering and Basement Impact Assessment
June 2019
Clancy Consulting

115 - 119 CAMDEN HIGH STREET

Report

Rev 03

Outline Structural Engineering and Basement Impact Assessment Report

Proposed Superstructure and Basement Construction

at

115-119 High Street - Camden
London
NW1 7JS

03th June 2019

Job No. 2/8791

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Proposed Superstructure and Basement Construction

at

115-119 High Street - Camden
London
NW1 7JS

Report Reference: 2/8791/TU/YJ

Date originated: 13 May 2019

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CAVEAT

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1 INTRODUCTION

1.0 Clancy Consulting have been instructed by DEMAR (BVI) Holdings Ltd, to prepare an Outline Structural Engineering and Basement Impact Assessment Report for the proposed planning application for the redevelopment of 115-119 Camden High Street, London, NW1 7JS.

1.1 The superstructure comprises a part five, part four storey reinforced concrete framed building with reinforced concrete flat slabs to form the floor plates. A single level basement is also proposed at approximately the centre of the property. Where required, localised beams and thickened slabs are provided to support cantilevered edges and transfers.

Figure 1. Site Plan.

1.2 This report is to be read in conjunction with the proposed planning drawings prepared by Morris and Company, and Axiom Architects.

1.3 This report has been prepared following a review of the documents relating to Basement Impact Assessments prepared by the London Borough of Camden. In particular, “Basement Impact Assessments: Defining the scope of the Engineering Input – Guidance Notes 1v0”, and “Basement Impact Assessment: Pro-forma 1v0”.

1.4 A site-specific Phase 2 Geotechnical investigation has not been carried out at this stage due to access restrictions into the site. However, a site-specific Phase 1 Geo-Environmental desk study has been carried out and a copy of this desk study has been included in Appendix A.

1.5 An outline Hydrogeological and Hydrological Assessment has been undertaken by Geotechnical Consulting Group (GCG) – which has been included within Appendix B. In addition to this report, an Asset Protection Report for TFL will also be prepared. An addendum of this report will be issued in due course once the final reports have been prepared and issued.

1.6 This document should not be considered a comprehensive appraisal of the property, nor a “Structural Survey” as defined by the Royal Institution of Chartered Surveyors. It deals solely with the technical matters referred to within the instructions received, although some other matters are mentioned by way of completeness, which were observed during the inspection.

2 EXISTING SITE

2.0 Existing Configuration

2.0.1 The existing building is located at 115-119 Camden High Street, which is on the corner of Delancey Street in Camden, London.

2.0.2 The property is currently used as a retail unit along Camden High Street and appears to be built in the mid to late 19th century. The existing building is two-storey high with an ancillary basement.

2.0.3 A site inspection was not possible at this stage due to the current tenant restricting access to the site. Therefore, survey drawings of the existing building were examined which indicate the presence of load bearing masonry construction with an internal steel frame. The roof appears to be formed using timber joists and the first-floor slab can be assumed as a filler joist concrete slab given the age of the building, the spans and its commercial use case. We have also deduced that the basement and ground floors to be formed using concrete slabs.

2.0.4 Once the site is vacant and we are able to gain access to carry out a structural inspection of the existing property – we will gain a full understanding of the existing structure and the existing loads to fully inform the geotechnical considerations and the demolition plans.

2.1 Boundary Conditions

2.1.1 North wall of the property is a party wall which is shared with 121-123 Camden High Street. The south wall of the property forms the elevation on Delancey Street and a public pavement is present.

2.1.2 At this stage we are assuming that the neighbouring property at 121-123 Camden High Street also has a single storey existing basement and therefore the foundations would be formed at that level.

2.1.3 The boundary walls are of traditional masonry construction with assumed shallow foundations. The existing foundations will be confirmed with exploratory trial pit investigations which will be a part of the Phase 2 Geotechnical site investigation.

2.1.4 There are TfL tunnels located under Camden High Street and are assumed to be partially under the pavement / corner of the existing building. The exact depths and locations of the tunnels are to be confirmed by specialist surveys.

2.2 Geology

2.2.1 A desk study review of the British Geological Survey records suggest that the superficial deposits are absent on site with solid strata comprising clay of the London Clay formation.

2.2.2 Historic borehole records have recorded up to 2.1m of Made Ground soils within close proximity to the site with several areas of worked ground from 25m to the north east. Clays with organic pockets were also recorded within close proximity to the site.

2.2.3 A factual below ground site investigation study will be carried out in due course when access to the site is attained. This will be issued as an addendum to this report.

2.2.4 Since no water was recorded with the historic borehole records, a contiguous piled wall is to be adopted to facilitate the basement excavation. No pumping of ground water is anticipated thus reducing, if not eliminating the risk of loss of fines which could potential cause undue settlements of the adjacent structures.

2.2.5 However, groundwater monitoring should still be carried out to confirm groundwater levels and assist with the detailed design and construction of the basement.

3 PROPOSED STRUCTURE

3.0 Overview of Structural Works

3.0.1 The proposed structure is to be supported on a piled foundation system which is to be confirmed once the Phase 2 Geo-Environmental Investigation is carried out to inform the foundation design.

3.0.2 It is anticipated that the piles will be of Continuous Flight Auger (CFA) type given the expected soil conditions are London Clay.

3.0.3 It is also anticipated that on the Camden High Street elevation the piles will be pulled back approximately 3m from edge of the site (as per Transport for London (TfL) - Guidance Notes – G0023 – Infrastructure Protection requirements) to accommodate the existing Northern Line tube tunnels understood to be located underneath the North East section of the site.

3.0.4 The location of piles along Camden High Street elevation are to be confirmed once the exact locations and depths of the Northern Line running tunnels are understood by specialist surveys / investigations. We are currently under discussions with TfL regarding this issue. However, preliminary information of the tunnels has been obtained from TfL and this has been utilised within our structural engineering design.

3.0.5 The columns and cladding along the Camden High Street elevation will be picked up by cantilevered ground beams supported by the pile caps and piles inbound from the edge of the site / tunnels.

3.0.6 The current proposal is to construct a new basement after the demolition of the existing building and the backfilling of the existing basement currently on site. The proposed use for the basement space is for hotel facilities.

3.0.7 The proposed superstructure comprises a part four, part five storey reinforced concrete (RC) with RC flat slabs spanning between RC columns. The columns are to be located internally and along the perimeter of the building in approximately 5m grids.

3.1 Basement Excavation and Outline Sequence

3.1.1 Initially, the existing ancillary basement under part of the site is to be backfilled with suitable material to geotechnical engineers' recommendations.

3.1.2 Subsequently, CFA piles will be installed along the perimeter of the proposed basement to form a contiguously piled wall (Contig wall) and subsequently to that an RC capping beam will be installed to tie all piles together.

3.1.3 The proposed CFA system is an augured system and will limit any vibrations through the sub-strata which could potentially affect the adjoining structures.

3.1.4 The CFA system will be designed to support the lateral earth pressures and surcharge forces from the neighbouring properties and will eliminate the need to underpin the existing foundations of the neighbouring property, thus allowing for the basement to be excavated and construction of the permanent reinforced concrete retaining wall.

3.1.5 Incremental excavation will then be carried out to allow the installation of props to the capping beams to prevent any undue movement of the piles already installed.

3.1.6 After the contig wall is fully propped the remaining excavation can be carried out safely, down to basement slab formation level upon which the proposed basement slab can be cast.

3.1.7 The proposed basement slab will be tied back to the contig wall.

3.1.8 Following this, an internal RC liner wall will be constructed along the perimeter of the proposed basement and inbound of the contig wall.

3.1.9 The RC wall will form an integral part of the contig piled wall as it will be cast against the piles.

3.1.10 Reference should be made to the sequencing drawings in Appendix C of this document.

3.2 Structural Design Principles

3.2.1 **Basement Slab**

3.2.1.1 It is also proposed that the basement slab will be an in-situ suspended slab supported by singular piles where the slab restrains the piles in all directions.

3.2.1.2 Initial geo-technical appraisals indicate the presence of heave and water pressure which are anticipated to act upon the basement slab and apply uplift forces. The slabs and piles will be designed and detailed to accommodate these forces in due course.

3.2.1.3 The current proposals indicate that the basement slab SSL, will be approximately 3.6m from existing ground level.

3.2.2 **Retaining Walls**

3.2.2.1 All new permanent retaining walls will be designed and detailed as propped reinforced concrete retaining walls.

3.2.2.2 The stem of the wall will be designed to resist a surcharge load of 20kN/m2 (DL+LL) from the public highway which is Delancey Street, the pavement along it and the neighbouring property.

3.2.2.3 The foundations of the neighbouring property may also surcharge the proposed contig wall. However, at this stage it is assumed that the neighbouring property also has an existing basement level. The nature of the existing arrangements will be investigated with trial pit excavations during the Phase 2 Geo-Environmental investigations.

3.2.2.4 An internal cavity drain system will be provided for any potential surface water, that can potentially accumulate as perched water above the London Clays.

3.2.2.5 A water table level of ¾ of the wall height will also be considered, which is in accordance with the current code of practice.

3.2.3 **Ground Floor Slab**

3.2.3.1 The ground floor slab will be designed as a reinforced concrete flat slab and will provide propping reaction to the RC retaining walls in the permanent condition.

3.2.3.2 The ground floor slab is anticipated to be dowelled back into the capping beams over the contiguously piled wall.

3.2.4 **First Floor Slab**

3.2.4.1 The first-floor slab will be designed as a reinforced concrete flat slab which will act as the transfer structure by picking up columns from the upper floors.

3.2.4.2 This is required due to the number of cantilevered areas at this level and the fact that the ground floor plan is set back from the rest of the building.

3.2.4.3 Additional RC beams will be monolithically cast with the flat slab to provide support to the columns from the upper storeys over the cantilevered areas. It is anticipated that the depth of these beams is to be in region of 1000mm. This is to be finalised during subsequent RIBA Stages however preliminary analyses have been carried out to inform the architectural design.

3.2.4.4 It is anticipated that the depth of the transfer slab will be in the order of 600mm. This is to be finalised during subsequent RIBA Stages however preliminary analyses have been carried out to inform the architectural design.

3.2.4.5 Reference should be made to the structural engineering sketches in Appendix C of this document.

3.2.5 **Upper Floor Slabs**

3.2.5.1 The second, third and fourth floor slabs will be designed as reinforced concrete flat slabs supported on RC “blade” columns.

3.2.5.2 The column grids are approximately 5m x 5m and the slab depths are anticipated to be between 200 – 250mm. This is to be finalised during subsequent RIBA Stages however preliminary analyses have been carried out to inform the architectural design. References should be made to structural engineering sketches in Appendix C of this document.

3.2.5.3 The third-floor slab requires an area to be thickened to accommodate the step in the façade.

3.2.5.4 The fourth-floor slab may require to be designed as a transfer structure since cladding on this level is stepped back to be in line with architectural aspirations. However, the superstructure at this level (ie. 4th to Roof) is anticipated to be constructed using light gauge steel (LGS) or a timber framed system. Therefore, the self-weight due to these types of systems may be accommodated by the typical slab or possibly with a modest increase in slab thickness.

3.2.6 **Roof Structure**

3.2.6.1 The roof structure is to be designed by a the LGS / timber frame specialist as part of the fourth-floor superstructure.

3.2.6.2 The plant loading at roof level is proposed to be accommodated using hot-rolled steel elements to form an independent braced frame to pick up plant equipment.

3.2.6.3 The steel frame columns will be supported on the RC framed structure below by a series of transfer beams where required.

4 DESIGN STANDARDS

4.0 The new basement walls and bases will be designed using the appropriate structural design software, such as “TEDDS” and will be in accordance will current Eurocodes.

4.1 Where relevant, the following design codes of practice and the associated UK National Annexes will be used in the design and checking of all works as the minimum standards adopted:

BS 648	Schedule of Weights of Building Materials (for reference only)
BS 7543:2015	Durability of Buildings and Building Elements, Products and Components
BS 8000-0:2014	Workmanship on Building Sites: Parts 1 to 16 as appropriate
BS 8002:2015	Code of Practice for Earth Retaining Structures
BS 8004:2015	Code of Practice for Foundations
BS 8500:2015	Concrete – Complimentary British Standard to BS EN 206-1
BS EN 1991-1-1	Actions on structures – Densities, self-weight, imposed loads for buildings
BS EN 1991-1-3	Actions on structures – Snow loads
BS EN 1991-1-4	Actions on structures – Wind actions
BS EN 1992-1-1	Design of Concrete Structures – General rules and rules for buildings
BS EN 1997-1	Geotechnical Design – General Rules

Appendix A

Phase 1 Geo-Environmental Desk Study Report

PHASE 1
GEO-ENVIRONMENTAL
DESK STUDY REPORT

115-119
Camden High Street
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February 2019
Report Ref: 10/1345/001

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PHASE 1 GEO-ENVIRONMENTAL DESK STUDY REPORT
115 - 119 CAMDEN HIGH STREET, LONDON

Report Reference: 10/1345/001

Date: February 2019

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EXECUTIVE SUMMARY

Client	Demar (BVI) Holdings Ltd
Location	Camden High Street and Delancey Street in Camden, London. At OS grid reference 528980, 183670.
Description	The site currently comprises a two-story retail unit with associated basement covering an approximate area of 826sqm including the Sign Maker's Yard. The site is generally fat lying and bound to the east by Camden High Street, south by Delancey Street, west by Sign makers Yard and north by commercial premises. The surrounding area is predominantly commercial premises and residential dwellings with associated infrastructure including railways and canals beyond.
Development	The site is proposed to be redeveloped for mixed commercial and residential purposes to include a basement café/bar ground floor retail unit and utilities rooms, above hotel rooms and residential apartments.
Site History	The site was historically occupied by several shops and a sausage factory before being redeveloped as a single retail premise between 1927 and 1930. The site has since remained relatively unchanged. The surrounding area has had a mixed development history with veterinary stables, mills, works, manufactories, stores, housing, electricity sub-stations, railways, tramlines and canals within close proximity to the site. Petrol tanks and oil fuel tanks have also been indicated within the surrounding area.
Unexploded Ordnance	Bomb risk mapping of the area indicates that the site is within a 'high' bomb risk zone with Pre-Desk Study Assessment information indicating High Explosive bombs and Incendiary Bombs falling within close proximity to the site during both WWI and WWII. A review of OS mapping and aerial photography from before and after WWII indicates several areas surrounding the site which were cleared or redeveloped during or immediately after WWII. There is potential for these clearances to be attributed to bomb damage. Whilst the site itself was not redeveloped during this time, given the proximity of cleared and redeveloped areas to the site, we would recommend a detailed UXO Risk Assessment be carried out to further investigate the potential risk from unexploded ordinance beneath the site.
Geology	The BGS scale map of the area indicates that superficial deposits are absent beneath the site with solid strata comprising clay of the London Clay Formation. Historic borehole records have recorded up to 2.1m of Made Ground soils within close proximity to the site with several areas of worked ground from 25m to the north east. Clays with organic pockets were also recorded within close proximity to the site. Slightly elevated background concentrations of cadmium, lead and nickel may be present within the urban soils beneath the site.
Mining & Ground Stability	The site is not indicated to be in an area affected by historic mining activities and no BGS recorded mineral sites within 500m of the site. The site is at very low to low risk of ground instability issues associated with the natural deposits with the exception of the potential for shrinking or swelling clay where the risk is indicated to be moderate. Given that the site has been completely redeveloped, there is potential for buried structures associated with the historic buildings. These may include historic foundations, hardstanding and basements. It is noted that the site is situated within close proximity to the London Underground Tube network and that tunnels associated with this network may run beneath the site. Inquiries should be made with relevant operating company as to the potential for railway tunnels beneath the site.
Environmental Setting	The nearest surface water feature is the Grand Union Canal 378m to the north. The London Clay formation is classified as a Non-Aquifer and Unproductive Strata. The site is not located within a Groundwater Source Protection Zone and there are no groundwater abstraction points within 500m of the site.

Flooding	According to Environment Agency records, the site is not at risk from flooding however Delancey Street immediately to the south of the site may be subject to surface water build up during periods of heavy rainfall. A flood risk assessment has been carried out and reported under separate cover.
Landfill	There are no recorded landfill sites within 500m of the site boundary. Four locations within 500m of the site are recorded as being potentially infilled land (water). All are associated with the infill of sections of canal and basins during the 1950s. There are three registered waste transfer sites and one licensed waste management facility within 500m of the site. All of the licences are recorded as surrendered.
Ground Gas Risk	Up to 2.1m of Made Ground, several areas of worked ground, infilled ground, a grave yard, organic soils and potential sources of hydrocarbon contamination have been identified which could be viewed as potential sources of hazardous ground gases. It is possible for large volumes of hazardous ground gas to be generated from sources that have a 'low' gas generation potential but where the total volume of gassing material is very large. Given that multiple sources of potential hazardous ground gas have been identified, we would recommend a ground gas monitoring program be carried out as part of any intrusive investigation works. Thought should also be given to the potential for hazardous vapours generated from any organic contamination such as hydrocarbons.
Further Works	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 further works and Phase 2 investigations are undertaken as a minimum: • Cary out a detailed UXO Risk Assessment for the site to further investigate the potential for unexploded ordinance beneath the site. • Enquiries to be made with the relevant operating authority in regard to potential railway tunnels beneath or within close proximity to the site. • Carry out an intrusive site investigation to confirm ground conditions at the site. 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 / geotechnical soil sampling should be carried out during intrusive investigation to provide adequate recommendations for foundation design. • Soil samples should be recovered from selected exploratory holes and tested for potential contaminants. This should include a minimum of pH, metals, asbestos screening, PAH and TPH. • Installation of gas monitoring wells and provision of a gas risk assessment to comprise 6 return visits over a minimum 2 month period (in line with CIRIA Report C665) to assess the risk posed from hazardous ground gases or provision of continuous ground gas monitoring over a period to be agreed with the local authority. • Groundwater monitoring should be carried out to confirm groundwater levels and assist with the detailed design and construction of the basement.

**Any future ground investigation should aim to assist the design team with preparing a Basement Impact Assessment (BIA) and provide baseline data for foundations, retaining walls, floor slabs, paving and slopes. It is recommended that the specification for the proposed site investigation works be reviewed by the design team prior to mobilisation to ensure enough information is collected.*

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DRAWINGS

Site Location Plan
Proposed Site Layout Plan

APPENDICES

1.0 INTRODUCTION

1.1 Background

Clancy Consulting Limited has been instructed by Demar (BVI) Holdings Ltd to carry out a Phase 1 Geo-Environmental Desk Study Report for a site located on the corner of Camden High Street and Delancey Street in Camden, London.

This report relates to a planning application for the demolition of the existing building which is proposed to be redeveloped into a new part 4, part 5 storey building comprising retail floorspace including a basement cafe/bar, 80 bed hotel and 3 residential apartments and associated works.

A site location plan and copy of the proposed development layouts are presented in Appendix I.

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.
- Consider the potential risk to end users of the site from hazardous ground gas.
- Identify potential geotechnical constraints associated with the proposed development.
- Develop a detailed 'preliminary risk assessment' and 'conceptual site model' regarding potential contamination sources, pathways and receptors.
- Provide recommendations regarding the requirement for further investigations, if required, to satisfy the Local Planning Authority and assist with structural and civil design.

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.

Clancy Consulting Limited reserves the right to amend either conclusions or recommendations considering any further information that may become available. The report is provided for the sole use of Demar (BVI) Holdings Ltd for the objectives discussed previously only and is confidential to them.

The report may not be relied upon by any other party without prior written consent of Clancy Consulting Limited. Those using this information in subsequent assessments or evaluations do so at their own risk.

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).
- Zetica Bomb Risk Mapping (Appendix III).
- British Geological Survey (BGS) Sheets (Appendix IV).
- Environment Agency Groundwater Vulnerability & Flood Risk Maps (Appendix V)
- Environmental datasheets (Appendix VI).

2.2 Site Setting and Description

The site is located on the corner of Camden High Street and Delancey Street at national grid reference 528980, 183670. The site currently comprises a two-story retail unit with associated basement covering an approximate area of 826sqm. The site is generally flat lying and bound to the east by Camden High Street, to the south by Delancey Street, to the west by a Sign makers Yard and north by commercial premises.

The surrounding area is predominantly developed with commercial premises and residential dwellings with associated infrastructure including railways and canals beyond.

2.3 Site History

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
1851	The site is **developed** with several small buildings, thought to be either **residential or commercial premises**.	The surrounding area is also developed with associated roads and infrastructure. **High Street** is immediately to the east, **Warren Street** to the south and unspecified **buildings** to the north and west. The **Regent Canal** is 340m to the south west.
1873	A **stable** is shown in the north western corner.	The surrounding area is shown as a mix of commercial and residential premises. **St Martins Burial Ground (disused)** is 160m to the north east and a **railway** line is 240m to the south west which runs into a **tunnel** 250m to the west. A **pianoforte manufactory** is 340m to the north east and there is a **timber yard** 350m to the north west.
1874 – 1882	No significant change.	**Railway stations** and **depots** are shown within the wider area including St Pancras, Kings Cross and Euston Stations. A **canal** is shown 400m to the north. A **gas works** is shown 1000m to the south east.

Date(s)	Site	Surrounding Land
1891 (Town Plan)	A **sausage factory** is shown in the north west of the site, boots in the east and an old clothes shop in the central south of the site. The rest of the site is shown covered by other unspecified shops with associated yard areas.	The building immediately to the north west of the site is shown **J.T Morris, Veterinary Stables** with associated loft and yard area. A **Bakery, drapery, stables, oil shop, printers, parquet factory, smithy** and **drug stores** along with various other shops and stores are also shown in the immediate area.
1895 - 1896	No significant change.	A **tramway** runs along High Street immediately to the east. Several of the buildings 20mm to the north east have been redeveloped as a **printing works**. An **organ works** has been constructed 80m to the east with a **glass works** 95m to the east and **pianoforte manufactories** constructed 220m to the east, 330m to the south east 140m to the south and 210m to the west. **Cobden Works** (furniture) is 250m to the south with a **depository** (furniture) 300m to the east. An embankment is shown along the **Regents Canal** 350m to the south west.
1916	No significant change.	Several of the buildings immediately to the west and 10m to the north have been **redeveloped** along with several buildings 190m to the south, 340m to the south, 220m to the north, 220n and 340m to the north east. The **printing works** 20m to the east **organ works** 80m to the east, **glass works** 95m to the east and **pianoforte manufactories** 210m to the west, 220m to the east and 340m to the north east are no longer marked. The **depository** 300m to the east has expanded. Additional **railway** lines and a **carriage shed** have been constructed 240m to the south west. Part of the **tramline** 220m to the north has been demolished and an additional **tramline** has been constructed 330m to the south east.
1927 (Town Plan)	No significant change.	An **electricity sub-station** is shown 10m to the west and a **saw mill** is shown 70m to the north east. A **drill hall** is shown 100m to the south east. The surrounding buildings include **motor builders, furniture warehouses, drapers, printers, stables, oil stores** and **shops, undertakers** and **smithies**.
1930 (Town Plan)	The site has been completely **redeveloped** and is now shown as **F.W. Woolworth & Co Ltd Bazaar**.	The **veterinary stables** immediately to the north west are now shown as a **packing case** and **garage**. The buildings to the north are shown as **printers** and **stationary** and a **draper**. The wider area has not shown any significant change.
1940 – 1951 & 1946 (Aerial Photo)	No significant change.	**Building clearance** has occurred 50m to the south west, 30m and 65m to the north, 70m, 170m, 200m and 210m to the south with additional building clearance within the wider area. **Redevelopment** has occurred 120m to the north west, 150m to the north east, 220m to the south west and 240m to the north. The **tramline** immediately to the east has been demolished.
1948 (Town Plan)	Not shown.	An **electricity sub-station** is shown 100m to the north east. A **sunk petrol tank** is shown 70m to the north east. Buildings within the surrounding area are shown as **drapers, Marks & Spencer Bazaar, furniture stores** and **workshops, banks** and **schools**.
1951 (Town Plan)	No significant change.	A **sheet metal works** is shown 10m to the north west. The buildings in the surrounding area include **motor body builders, saw mills, garages, oil and colour mills** and **stores, printers** and **engineers**. The **drill hall** 100m to the south east is now an offices.
1953 – 1955	No significant change.	**Works** are shown 20m to the east, 50m to the north, 120m 150m to the north west, 140m and 170m to the north east, 235m to the south east, 230m to the south and 210m to the west. A section of the **Regents Canal** 350m to the south west has been **infilled** and is now shown as a wooded area with three small sections of **canal** also **infilled** 450m to the north.

Date(s)	Site	Surrounding Land
1957 (Town Plan)	No significant change.	An **electricity sub-station** is shown 30m to the south. Several buildings have been cleared and **redevelopment** has occurred 70m to the south.
1960 – 1967 (Town Plans)	No significant change.	The **electricity sub-station** 10m to the west is shown as London Transport Executive Bard before becoming Hackbridge & Hewittic Electric Co Electrical Stores. **Oil fuel tanks** are shown 25m to the north and 35m to the north east. The **oil and colour mills** and **stores** are no longer shown. A **scrap iron warehouse** is shown 90m to the east.
1962 – 1969	No significant change.	The building immediately to the north is marked as North West Polytechnic. The **cleared ground** 50m to the south west, 170m, 200m and 210m to the south have been partially **redeveloped**. **Redevelopment** has also occurred 220m to the south west, 230m to the south east and 300m to the north west. The buildings 150m to the north east have expanded and are now marked as a **works** with an additional **works** 190m to the south. The former **Regent Canal** 350m to the south west is shown as part of several gardens.
1970 (Town Plans)	Not shown.	No significant change.
1970 – 1971	No significant change.	A **metal works**, **works** and a **clothing factory** are marked 60m to the north east and the **houses** from 120m to the east have been **redeveloped** for residential purposes.
1973 – 1975	No significant change.	No significant change.
1991	No significant change.	The **carriage shed** 240m to the south west is no longer shown.
1991 – 1995	No significant change.	The building immediately to the north of the site is no longer marked and the buildings 30m to the north east have been split into smaller units. The buildings 40m to the south have been demolished and are now shown as a **car park**. The **works** 10m, 120m, 150m and 200m to the north west, 50m to the north, 20m to the east, 230m to the south and 210m to the west are no longer marked.
1999	No significant change.	No significant change.
2006	No significant change.	The **gas works** 1000m to the south east is no longer shown.
2018	No significant change.	No significant change.

2.4 Unexploded Ordnance (UXO) Risk Assessment

A review of publicly available bomb risk mapping from Zetica (accessed January 2019) indicates that the site is within a 'high' bomb risk zone. A copy of the bomb risk mapping for the site is presented in Appendix III.

In addition to the bomb risk mapping, a review of the historical areal maps, survey maps and town plans has been undertaken which indicates that some significant areas of building demolition and clearance within the surrounding area immediately after WWII which could be associated with bomb damage.

Whilst the site itself was not redeveloped following WWII, buildings 50m to the south west, 30m and 65m to the north, 70m, 170m, 200m and 210m to the south have been demolished with redevelopment occurring 120m to the north west, 150m to the north east, 220m to the south west and 240m to the north.

Given the above, a Pre-Desk Study Assessment was ordered which has indicates that several High Explosive bombs and Incendiary Bombs fell in close proximity to the site in December 1917 during WWI. During WWII, 663 High Explosive bombs fell within the borough with several of these falling within close proximity to the site.

As such, it is recommended that a detailed UXO Risk Assessment is recommended to further investigate the potential for unexploded ordnance on site.

2.5 Geology

The British Geological Survey (BGS) scale map for the area indicates that superficial deposits are absent beneath the site with solid strata comprising clay of the London Clay Formation.

Areas of worked ground are indicated 25m to the north east, 40m to the south, 70m to the east and 210m to the south east along with in the wider area. These are located in areas where large scale redevelopment has historically taken place.

There are several BGS historical boreholes within close proximity to the site which indicate up to 2.1m of Made Ground underlain by soft becoming firm and stiff clay with occasional gravel and sand partings. In one location, a band of clay with peat pockets was also encountered between 0.8m and 1.3m bgl.

Copies of the geological plans are provided in Appendix IV.

2.6 Soil Geochemistry

According to the BGS National Geoscience Information Service slightly elevated background concentrations of cadmium, lead and nickel may be present within the urban soils beneath the site.

2.7 Mining & Ground Stability

The site is not indicated to be in an area affected by historic mining activities and no BGS recorded mineral sites are recorded within 500m of the site.

The site is at very low to low risk of ground instability issues associated with the natural deposits with the exception of the potential for shrinking or swelling clay where the risk is indicated to be moderate.

Given that the site has been completely redeveloped, there is potential for buried structures associated with the historic buildings. These may include historic foundations, hardstanding and basements.

It is noted that the site is situated within close proximity to the London Underground Tube network and that tunnels associated with this network may run beneath the site. Enquiries should be made with relevant operating company as to the potential for railway tunnels beneath the site.

2.8 Hydrogeology

According to the Environment Agency groundwater vulnerability maps the London Clay Formation is classified as a Non-Aquifer (negligibly permeable) and Unproductive Strata.

The site is not located within a groundwater Source Protection Zone (SPZ) and there are no groundwater abstraction points within 500m of the site.

Groundwater was recorded within a BGS historical borehole within close proximity to the site at 3.0m bgl. However, groundwater was otherwise not recorded at shallow depth within the historic boreholes.

2.9 Hydrology

The nearest recorded surface water feature is the Grand Union Canal 378m to the north of the site.

There are no recorded surface water abstraction points located within 500m of the site.

There are no recorded pollution incidents to controlled waters within 500m of the site.

2.10 Flood Risk

According to Environment Agency records, the site is not located within an area susceptible to flooding from groundwater, rivers or seas. However, whilst the site is not indicated to be subject to flooding from surface water, the roadway immediately to the south of the site is indicated to be at low risk of flooding from surface water during periods of heavy rainfall.

A standalone detailed flood risk assessment report has been carried out for the site and has been issued under separate cover.

Copies of the hydrological site sensitivity and flood risk maps are included in Appendix V.

2.11 Radon Risk Potential

The Radon Guidance on protective measures for new dwellings indicates that the site is in a lower probability area (where less than 1% of homes are estimated to be at or above the action level).

Radon gas protective measures are therefore not required in new buildings at the site.

2.12 Landfill Sites

There are no recorded landfill sites within 500m of the site boundary.

Four locations within 500m of the site are recorded as being potentially infilled land (water). These are located 318m to the south west, 450m, 458m and 471m to the north west. All are associated with the infill of sections of canal and basins during the 1950s.

All the above infilled land features were also identified in Section 2.3 above during a review of historical maps of the area.

There are three registered waste transfer sites within 500m of the site. One is located 381m to the north west associated with the transfer of between 25,000 - 75,000 tonnes of civic / refuse waste, house, commercial and industrial waste along with waste oil per year. The license is recorded as surrendered. Two are located 432m to the north west. The first record is associated with the transfer of between 10,000 – 25,000 tonnes of batteries, inert wastes, non putrescible wastes, mineral oils, putrescible wastes, scrap metal and wastes for recycling per year. The license is recorded as surrendered. The second record is associated with the transfer of less than 10,000 tonnes of civic / refuse waste, scrap metal and waste mineral oil per year. The license is recorded as surrendered.

One licensed waste management facility is located within 500m of the site. This is located 458m to the north west, associated with a Camden London Borough Council household waste amenity. The licence is recorded as being surrendered on 25th July 1997.

The waste transfer sites outlined above will not have any adverse impact on the development.

2.13 Industrial Land Uses

There are 126 contemporary trade directory entries within 500m of the site, 25 of these are recorded as being active.

The nearest entry is 2m to the east associated with an oven cleaning service. This entry is inactive. The nearest active entry is 43m to the east associated with a dance studio.

There are two fuel station entries within 500m of the site. These are located 248m to the south east and 425m to the north west. Both are recorded as obsolete and will have no impact on the proposed development.

In addition to the above, several petrol tanks and fuel oil tanks were identified in Section 2.3. These are located 25m to the north, 35m to the north east and 70m to the north west. It is unknown if these remain active or have been de-commissioned.

Four recorded Local Authority Pollution Prevention and Controls are recorded within 500m of the site. Three are located 215m to the west, 243m to the south east and 261m to the west associated with dry cleaning. Their status is recorded as permitted. The forth is 292m to the west associated with a petrol filling station. The status is recorded as authorised.

Three Registered Radioactive Substances are recorded within 500m of the site. Two are located 103m to the north in association with the keeping, use and disposal of radioactive wastes. These licenses are recorded as revoked or cancelled. The third is 414m to the north east associated with the keeping and use of radioactive materials. The license is recorded authorised.

Electrical cables are shown to run north east / south west approximately 185m to the north west with further cables indicated beyond.

2.14 Sensitive Land Uses

There are no sensitive land uses have been identified within 500m of the site.

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 considering 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 following potential contamination sources have been identified:

- Possible contamination associated with historic building use on site (sausage factory and unspecified shops).
- Possible Made Ground associated with the demolition of historic buildings / structures on site and in the surrounding area along with construction of existing building on site.
- Possible mobile contamination associated with Made Ground in the surrounding area.
- Possible mobile contamination associated with electricity sub-stations, petrol and fuel oil tanks within surrounding area.
- Possible mobile contamination associated with historic land uses (veterinary stables, mills, works, manufacturers, railways) within the surrounding area.
- Possible mobile contamination associated with infilled ground (canals) within the surrounding area.
- Possible mobile hazardous ground gas associated with Made Ground deposits on and off site along with infilled ground within surrounding area (canals) and historic burial ground 160m to the east.

Based on the site history, it is considered possible that some form of contamination may be located beneath the site. The perceived risk is therefore medium. If present, contaminants of concern may include metals, hydrocarbons (PAHs and TPHs), PCBs, asbestos.

Potential pollutant pathways include:

- Dermal contact.
- Inhalation and ingestion of particulates.
- Migration of leachable contaminants (vertical and lateral).
- Migration of possible ground gas.
- Acidic ground conditions affecting building infrastructure.

The following contamination receptors have been identified:

- Future site users.
- Construction workers.
- Controlled waters (canal 378m to the north)
- 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	Severity	Probability	Risk	Justification	Further Action Required
On site: Possible Made Ground and contamination associated former uses i.e. factory and commercial premises. Contamination associated with demolition of historic buildings on site i.e. asbestos	Inhalation, ingestion and dermal contact of soil	Future site users	**Medium** Long term risk to human health	**Unlikely**	**Low**	The demolition of historic buildings and construction of the existing building on site may have given rise to ground level changes in which Made Ground soils may have been generated. Whilst their depth, composition and distribution on site is currently unknown, these potential Made Ground soils could be a source of contamination including asbestos, heavy metals, hydrocarbons and putrescible materials. As the proposed development will comprise a predominantly commercial premise with basement and residential premises the potential for end users of the site to come into direct contact with any Made Ground soils is low. In addition, there is potential for much of the Made Ground soils to be removed during development to facilitate the construction of the proposed basement.	Intrusive investigation to be undertaken with chemical testing of soils to confirm whether contamination is present within shallow soils underlying the site.
		Construction workers during development	**Medium** Long term risk to human health	**Low Likelihood**	**Moderate / Low**	If contamination associated with Made Ground or historic site processes are present underlying the site, it may be present in such quantities that would cause harm to construction workers during development. Construction workers are expected to undertake good working practices including regular hand washing and other hygiene techniques which would reduce the likelihood of long-term exposure to any contamination.	
	Acidic ground conditions affecting future site buildings	Building infrastructure	**Minor** Minor damage to buildings	**Low Likelihood**	**Very Low**	If contamination associated with Made Ground is present underlying the site it is unlikely that it will be present in such quantities that it would cause significant damage to the proposed buildings, however foundations for the buildings could come into contact with contamination if present.	
	Vertical and lateral migration	Controlled waters	**Medium** Pollution of sensitive controlled watercourses	**Unlikely**	**Low**	The site is anticipated to be underlain by Made Ground over extensive cohesive deposits of the London Clay Formation which are typically of low permeability. Given the distance of the nearest surface water feature from the site (378m) and the absence of any underlying aquifer, it is unlikely that any contamination present would impact upon controlled waters.	
Off site: Possible mobile contamination associated with industrial land uses, Made Ground and filled ground from development of the surrounding area. Potential mobile contamination associated with petrol tank and fuel oil tanks within the surrounding area.	Lateral migration onto site with subsequent dermal contact of soils	Future site users	**Medium** Long term risk to human health	**Unlikely**	**Low**	There are potential sources of off-site contamination which could migrate onto the site. The presence of cohesive deposits underlying the site could limit the migration potential of contamination onto the site. However, if present contamination could pose a chronic health risk to future site users.	
		Construction workers during development	**Medium** Long term risk to human health	**Low Likelihood**	**Moderate/Low**	If contamination associated with Made Ground and industrial land uses within the surrounding area are present underlying the site, it is of low likelihood that that it would be present in such quantities that would cause harm to construction workers during development. Construction workers are expected to undertake good working practices including regular hand washing and other hygiene techniques which would reduce the likelihood of long-term exposure to any contamination.	
Ground Gas: Possible mobile ground gas associated with potential Made Ground on and off site along with infilled ground within the surrounding area and burial ground 160m to the east.	Migration of ground gas	Future site users	**Severe** Acute risk to human health (asphyxiation)	**Low Likelihood**	**Moderate**	Made Ground from the construction / demolition of buildings and historical uses of the site and surrounding area are likely to be present and may be in sufficient quantities to generate ground gas, though this is unconfirmed.The site is also anticipated to be underlain by natural cohesive deposits which can limit the migration of hazardous ground gas, however, one BGS borehole within the surrounding area has recorded the presence of clays containing organic material which could be considered a source of hazardous ground gases. Though the proposed development is to benefit from a basement which is planned to cover the majority of the site, the depth of Made Ground and composition of both the Made Ground and natural deposits is unconfirmed at this stage.	Intrusive investigation to confirm the nature and depth of Made Ground and underlying natural strata to include the installation of gas monitoring wells and a program of monitoring in line with guidance provided in CIRIA Report C665.
		Building Infrastructure	**Severe** Significant damage to buildings (explosion)	**Low Likelihood**	**Moderate**		

4.0 CONCLUSIONS AND RECOMMENDATIONS

The historical OS maps dating back to 1851 indicate the site was historically occupied by several small shops, a stable yard and a sausage factory before being redeveloped as a single retail premise (Woolworths) between 1927 and 1930. The site has since remained relatively unchanged. The surrounding area has had a mixed development history with veterinary stables, mills, works, stores, housing, electricity sub-stations, railways, tramlines and canals within relatively close proximity to the site. Petrol tanks and oil fuel tanks have also been indicated within the surrounding area.

Given that the site has undergone more than one phase of development the historic construction and demolition activities may have given rise to buried structures such as infilled basements and relic floor slabs and foundations.

It is noted that the London Underground Tube network runs within close proximity to the site and there is potential for tunnels associated with these lines to run beneath the site. Inquiries should be made with the relevant operating company as to the potential for railway tunnels beneath the site.

Bomb risk mapping of the area indicates that the site is within a 'high' bomb risk zone with Pre-Desk Study Assessment information indicating High Explosive bombs and Incendiary Bombs falling within close proximity to the site during both WWI and WWII. A review of OS mapping and aerial photography from before and after WWII indicates several areas surrounding the site which were cleared or redeveloped during or immediately after WWII. There is potential for these clearances to be attributed to bomb damage. Whilst the site itself was not redeveloped during this time, given the proximity of cleared and redeveloped areas to the site, we would recommend a detailed UXO Risk Assessment be carried out to further investigate the potential risk from unexploded ordinance beneath the site.

Given the site and surrounding areas development history, it is considered possible that some form of ground contamination is present beneath the site. Made Ground soils could be present with localised concentrations of inorganic and organic contamination with asbestos containing materials from previous demolition activities. The most significant off-site contamination sources are the former fuel and oil tanks and adjacent printing works.

The British Geological Survey (BGS) maps of the area indicate that superficial deposits are absent beneath the site with solid strata anticipated to comprise clay of the London Clay Formation. Worked ground and infilled ground deposits are indicated within close proximity of the site. The closest of which is 25m to the north. Historical borehole records indicate Made Ground deposits up to 2.1m bgl underlain by natural soils comprising soft becoming firm and stiff clays with localised peat pockets within the shallow natural soils.

The nearest surface water feature is the Grand Union Canal 378m to the north. The London Clay formation is classified as a Non-Aquifer and Unproductive Strata. The site is not located within a Groundwater Source Protection Zone and there are no groundwater abstraction points within 500m of the site. Historical borehole records confirm the geological sequence and it is noteworthy that groundwater has typically been found to be absent.

According to Environment Agency records, the site is not at risk from flooding however Delancey Street immediately to the south of the site may be subject to surface water build up during periods of heavy rainfall. A flood risk assessment has been carried out and issued under separate cover.

Based on the desk study information, the environmental setting of the site is considered to be of 'low' sensitivity due to the soils underlying the site being classified as Unproductive Strata and the distance to the nearest surface water course (378m).

The risk to human health is considered to be 'low' to 'moderate' given the mixed commercial and residential end use. The proposed basement and ground floor are intended for commercial end use where there would be very limited opportunity for the end users of the site to come into direct contact with any potential contaminants. The proposed basement will likely extend across much of the site, removing much of any Made Ground soils and therefore reducing the contamination source potential. There would however be a residual risk from any remaining Made Ground.

Construction workers and members of the public may however be exposed potential contaminants during development, and this poses a potential risk in terms of human health.

In view of this, an intrusive ground investigation will be required in order to assess the nature of the soils beneath the site with samples recovered for chemical laboratory testing to further assess the contamination risk.

With regards to hazardous ground gas risk a number of potential gas sources have been identified including Made Ground soils, several areas of worked ground from 25m to the north east, infilled ground from 318m south west, a grave yard 160m to the east and naturally occurring organic soils.

Given the age of the grave yard and the anticipated nature of the organic soils, these potential sources are considered to have a 'low' gas generation potential in accordance with BS 5876:2013. The infilled ground is considered to have a 'low' to 'moderate' gas generation potential however given its distance from site and anticipated cohesive nature of the natural strata beneath the site, it is considered that the potential for mobile ground gases generated from these soils to migrate to site is low. The potential Made Ground on site and within the surrounding area are considered to have a 'very low' to 'low' gas generation potential. This may however be higher if they contain large quantities of putrescible material, such as large wood and timber fragments.

It is possible for large volumes of hazardous ground gas to be generated from sources that have a 'low' gas generation potential but where the total volume of gassing material is very large. Given that multiple sources of potential hazardous ground gas have been identified, we would recommend a ground gas monitoring program be carried out as part of any intrusive investigation works. Thought should also be given to the potential for hazardous vapors generated from any organic contamination such as hydrocarbons.

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 further works and Phase 2 investigations are undertaken as a minimum:

- Cary out a detailed UXO Risk Assessment for the site to further investigate the potential for unexploded ordinance beneath the site.

- Enquiries to be made with the relevant operating authority in regard to potential railway tunnels beneath or within close proximity to the site.

- Carry out an intrusive site investigation to confirm ground conditions at the site. 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 / geotechnical soil sampling should be carried out during intrusive investigation to provide adequate recommendations for foundation design.

- Soil samples should be recovered from selected exploratory holes and tested for potential contaminants. This should include a minimum of pH, metals, asbestos screening, speciated PAH and speciated TPH.

- Installation of gas monitoring wells and provision of a gas risk assessment to comprise 6 return visits over a minimum 2-month period (in line with CIRIA Report C665) to assess the risk posed from hazardous ground gases or provision of continuous ground gas monitoring over a period to be agreed with the local authority.

- Groundwater monitoring should be carried out to confirm groundwater levels and assist with the detailed design and construction of the basement.

The ground investigation should aim to assist the design team with preparing a Basement Impact Assessment (BIA) and provide baseline data for foundations, retaining walls, floor slabs, paving and slopes. It is recommended that the specification for the proposed site investigation works be reviewed by the design team prior to mobilisation to ensure sufficient information is collected.

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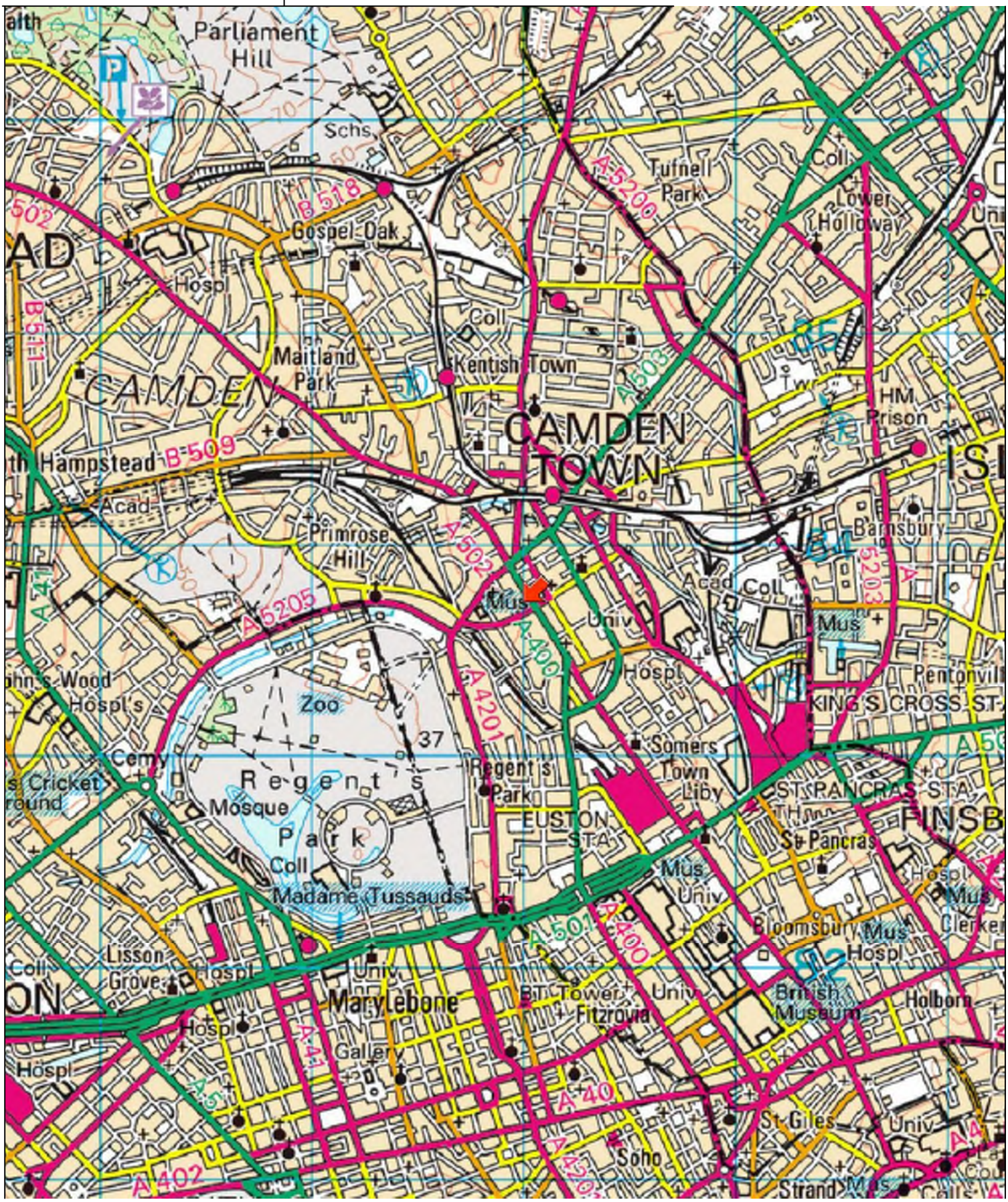
Appendix I

Birmingham 0121 200 7800 . Glasgow 0141 222 1720 . Liverpool 0151 227 5300 . London 020 3077 0970 . Manchester 0161 613 6000 . Newcastle 0191 221 0702 . Norwich 01603 305190 . Prestwick 01292 475375 . Reading 0118 941 7888

Client	Demar Holdings (BVI) Ltd
Project	115-119 Camden High Street
Title	Site Location Plan
Office	Altrincham
Discipline	Geo-environmental

clancy consulting
www.clancy.co.uk



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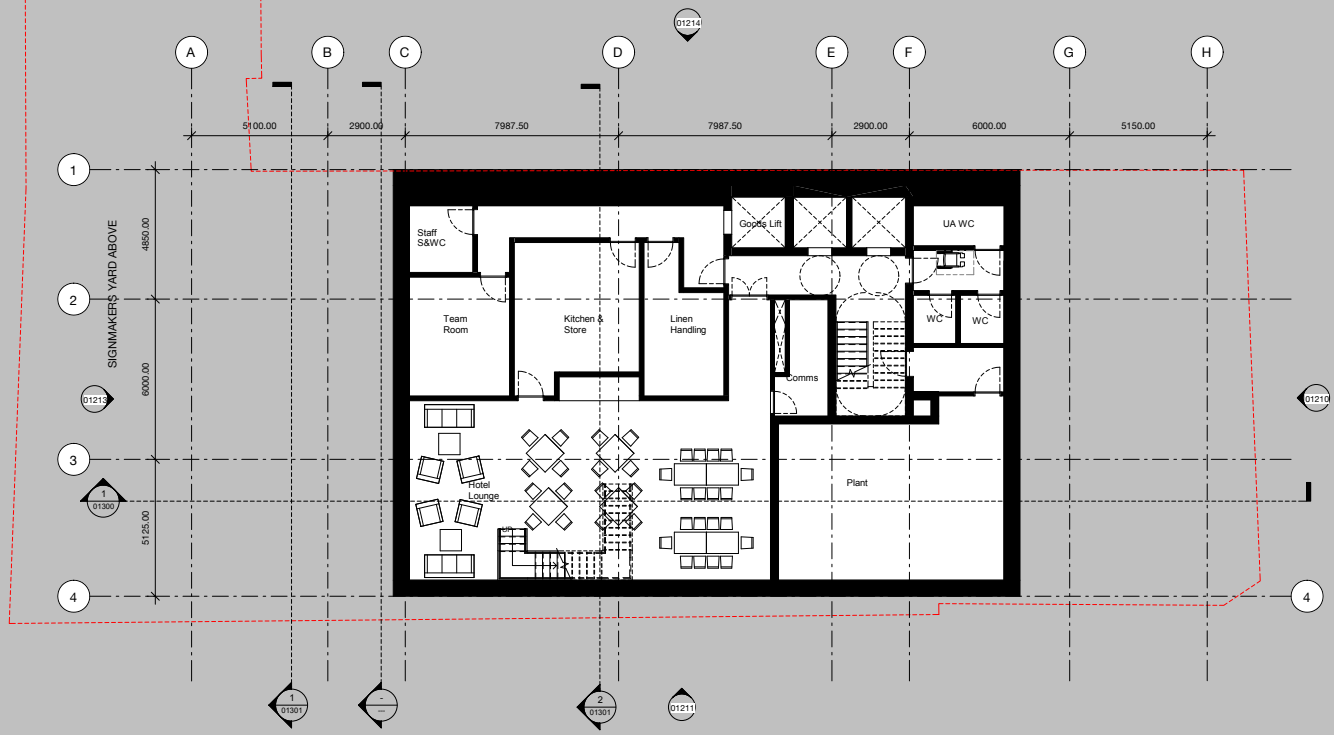
Rev	Date	Description	By	Check	App.

Drawn	SHP	Date	Feb 2019
Checked	NR	Scale @ A4	NTS
Approved	NR	Status	

Job number	Drawing number	Revision
10/1345	001	C



KEY LEGEND

Site ownership boundary

NOTES:

These drawings have been produced by Morris+Company and should be read in conjunction with the following information, prepared by others:
- Internal Layout Detailed Drawings (AXIOM)
- Structural Engineers Drawings and Specification (Clancy)
- MEP Engineers Drawings and Specification (PSH Consulting)
- Acoustic Report (24 Acoustic)
- Transport & Servicing Strategy Report (RGP)
- Townscape & Heritage Report (KM Heritage)
- Daylight & Sunlight Report (Point2Survey)
- Access and Maintenance Report (Morris+Company)

The scheme requires the input from other specialist consultants listed below in order to develop a coordinated design. Without input from these specialist consultants the design is based on a series of assumption and is subject to design change.
- Sustainability consultant
- Fire Engineer
- Landscape Architect
- Approved Inspector / Building Control
- Access Consultant

Disclaimer:

All constructions build-ups are indicative only.
All floor to ceiling heights have been driven by the interior architect's brief following the tenant's turnkey specification
These drawings combine survey and site information produced by others and should be verified in accuracy.
Existing site and definition of red line plot boundary as shown in the Tittle Plan and Land Register documents received from client and existing building OS datum survey is derived from drawings produced by Lane & Frankham.
Level information received from Lane & Frankham.
Spot levels are defined as AOD and are expressed in millimeters.
All areas provided are intended for illustrative purposes only.
Morris+Company advise that the validity of all quantities and numbers be subject to a detailed check, audit and sign off by an RICS chartered surveyor.
Morris+Company do not accept any liability for decisions or actions derived from interpretation, extrapolation or use of the areas shown.
Measurements have been calculated in accordance with the UK Government Code of Measuring Practice: Definitions for Rating Purposes.

Refer to the following website for more information:
www.gov.uk/government/publications/measuring-practice-for-voa-property-valuations/code-of-measuring-practice-definitions-for-rating-purposes

revision	date	amendment

SCALE BAR

0 1000 2000 5000 10000 mm

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- All dimensions to be checked on site by the Contractor
- And such dimensions to be their responsibility
- Report all drawing errors and omissions to the Architect
- All dimensions in millimeters unless noted otherwise
- If in doubt ask Contract Administrator

job title
Camden High Street Hub Hotel

drawing title / location
Proposed Basement Plan

status	Stage 2							
date	12/02/2019							
scale	1 : 100 @ A1					1:200 @ A3		
project	originator	zone	level	type	role	number	status - revision	
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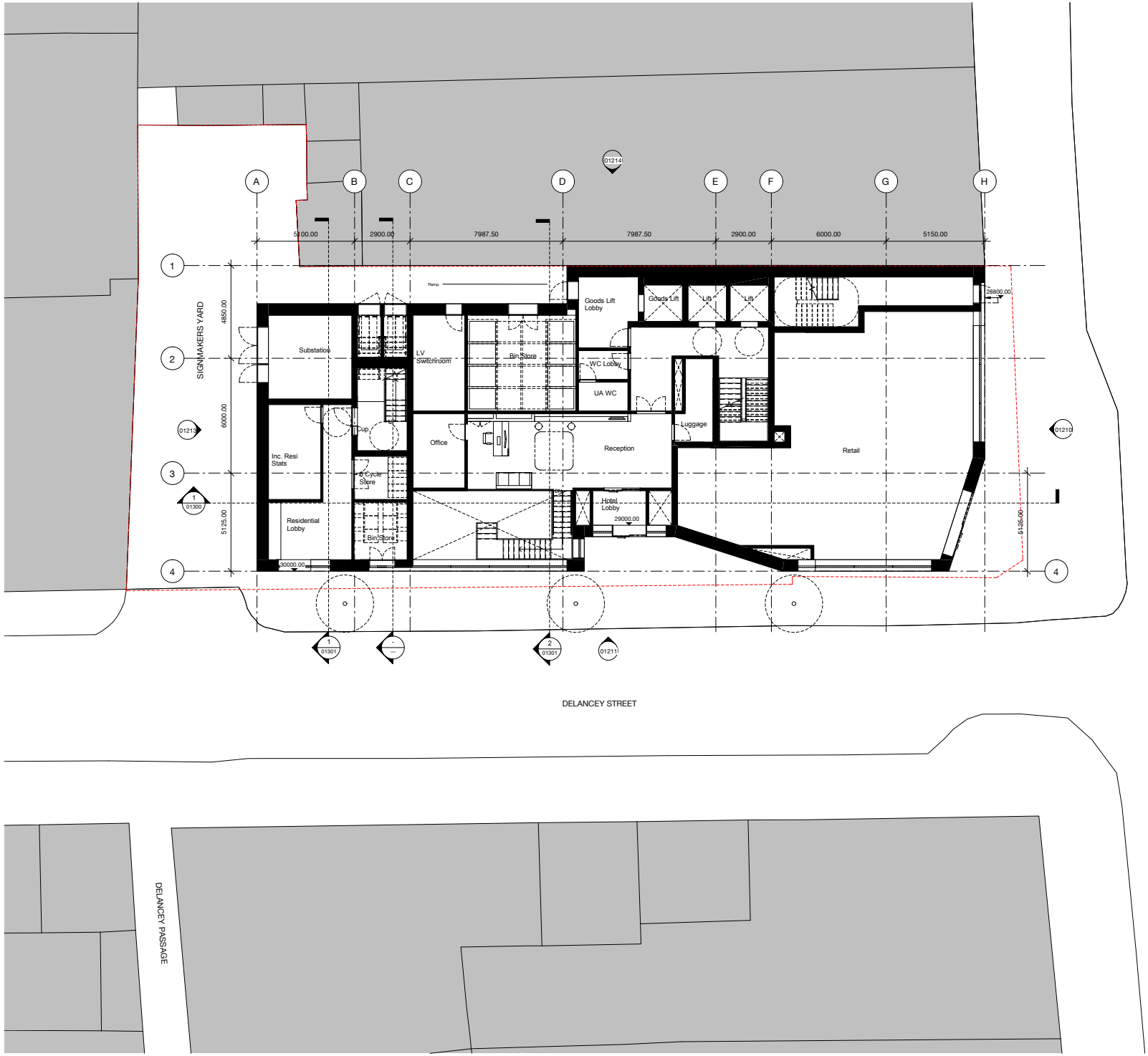

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revision	date	amendment

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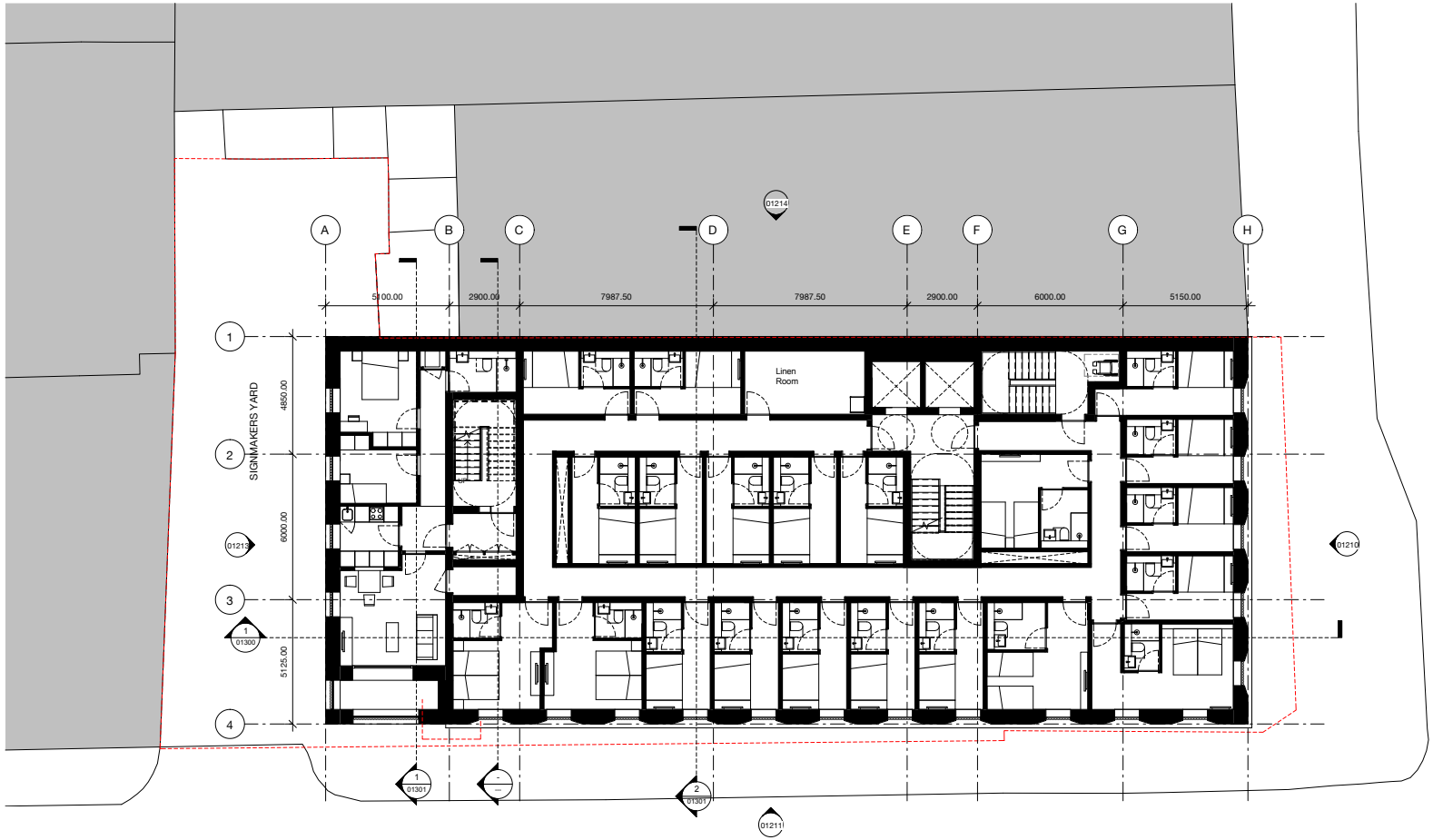
job title
Camden High Street Hub Hotel

drawing title / location
Proposed Ground Floor Plan

status	Stage 2							
date	24/06/2016							
scale	1 : 100 @ A1				1:200 @ A3			
project	originator	zone	level	type	role	number	status - revision	
A277	MCO	XX	G0	DR	A	01110		



KEY LEGEND

Site ownership boundary

NOTES:

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- Structural Engineers Drawings and Specification (Clancy)
- MEP Engineers Drawings and Specification (PSH Consulting)
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- Transport & Servicing Strategy Report (RGP)
- Townscape & Heritage Report (KM Heritage)
- Daylight & Sunlight Report (Point2Survey)
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- Fire Engineer
- Landscape Architect
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revision	date	amendment

N

SCALE BAR

0 1000 2000 5000 10000 mm

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www.morrisand.company

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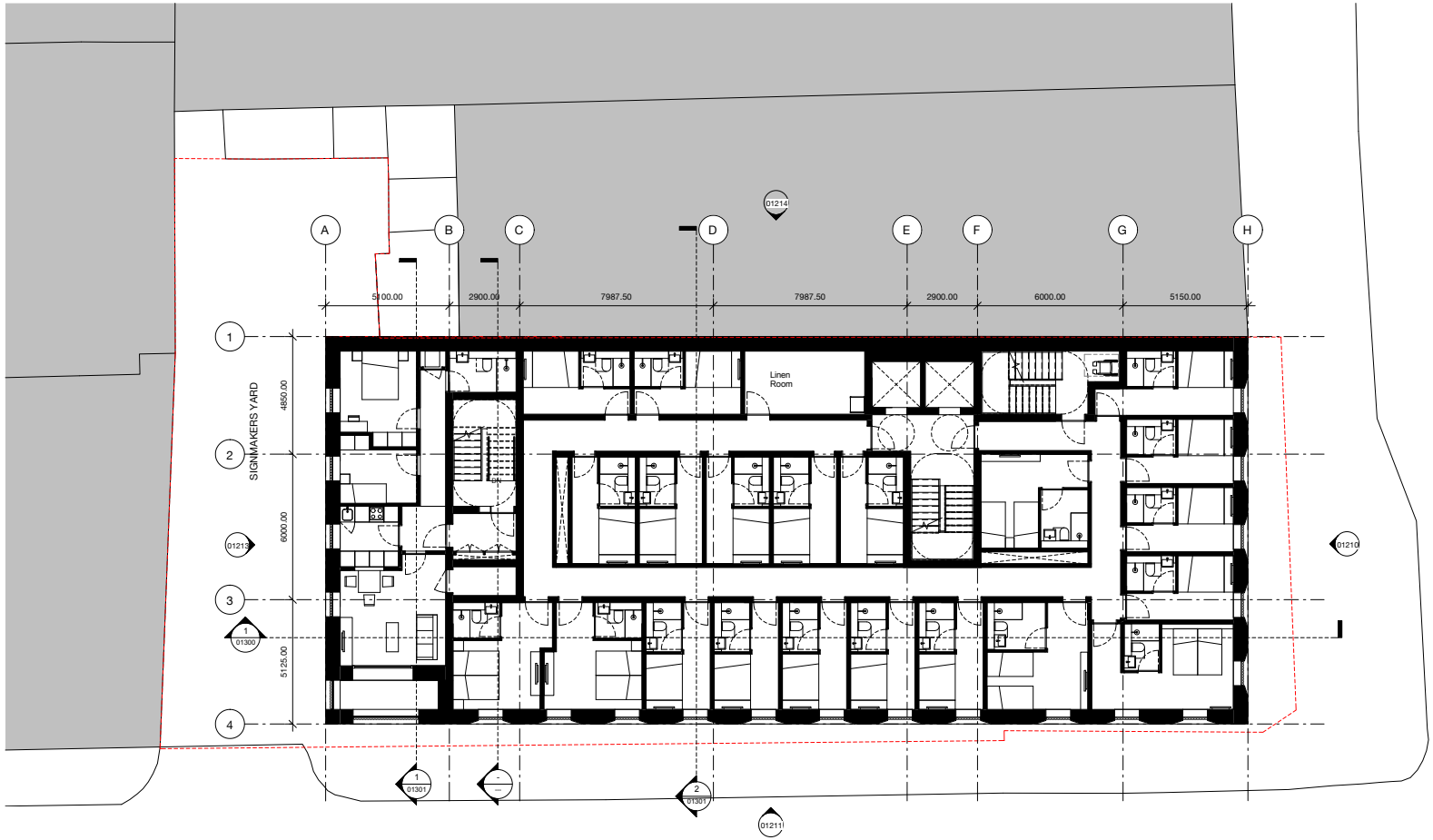
- If in doubt ask Contract Administrator

job title
Camden High Street Hub Hotel

drawing title / location
Proposed First Floor Plan

status	Stage 2							
date								
scale	1 : 100 @ A1						1:200 @ A3	
project	originator	zone	level	type	role	number	status - revision	
A277	MCO	XX	01	DR	A	01111		



KEY LEGEND

Site ownership boundary

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revision	date	amendment

N

SCALE BAR

0 1000 2000 5000 10000 mm

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job title
Camden High Street Hub Hotel

drawing title / location
Proposed Second Floor Plan

status	Stage 2							
date								
scale	1 : 100 @ A1				1:200 @ A3			
project	originator	zone	level	type	role	number	status - revision	
A277	MCO	XX	02	DR	A	01112		

KEY LEGEND

Site ownership boundary

NOTES:

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- MEP Engineers Drawings and Specification (PSH Consulting)
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revision	date	amendment

N

SCALE BAR

0 1000 2000 5000 10000 mm

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job title
Camden High Street Hub Hotel

drawing title / location
Proposed Third Floor Plan

status	Stage 2							
date								
scale	1 : 100 @ A1				1:200 @ A3			
project	originator	zone	level	type	role	number	status - revision	
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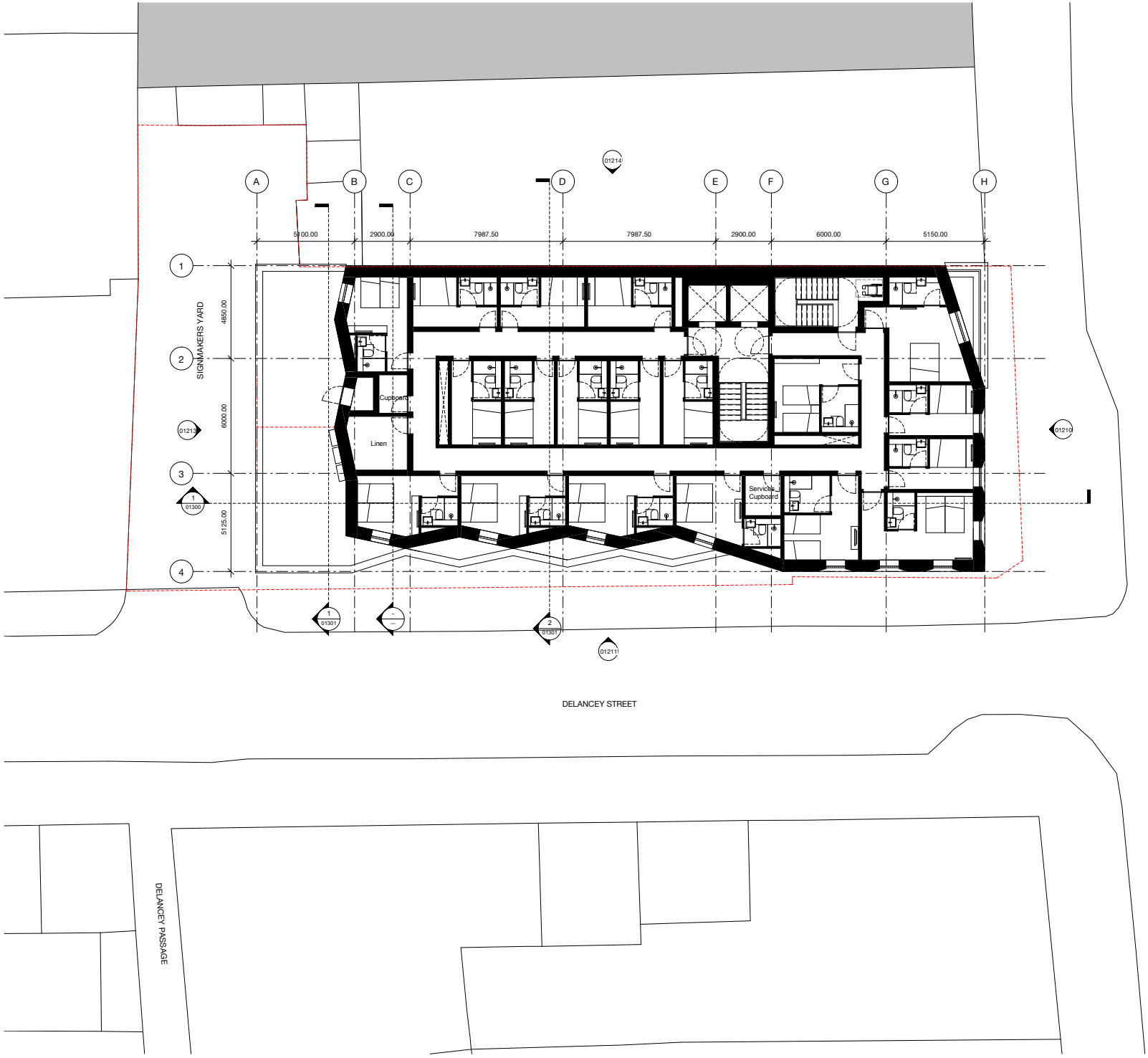

KEY LEGEND

Site ownership boundary

NOTES:

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- Townscape & Heritage Report (KM Heritage)
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revision	date	amendment

N

SCALE BAR

0 1000 2000 5000 10000 mm

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job title
Camden High Street Hub Hotel

drawing title / location
Proposed Fourth Floor Plan

status	Stage 2							
date								
scale	1 : 100 @ A1					1:200 @ A3		
project	originator	zone	level	type	role	number	status - revision	
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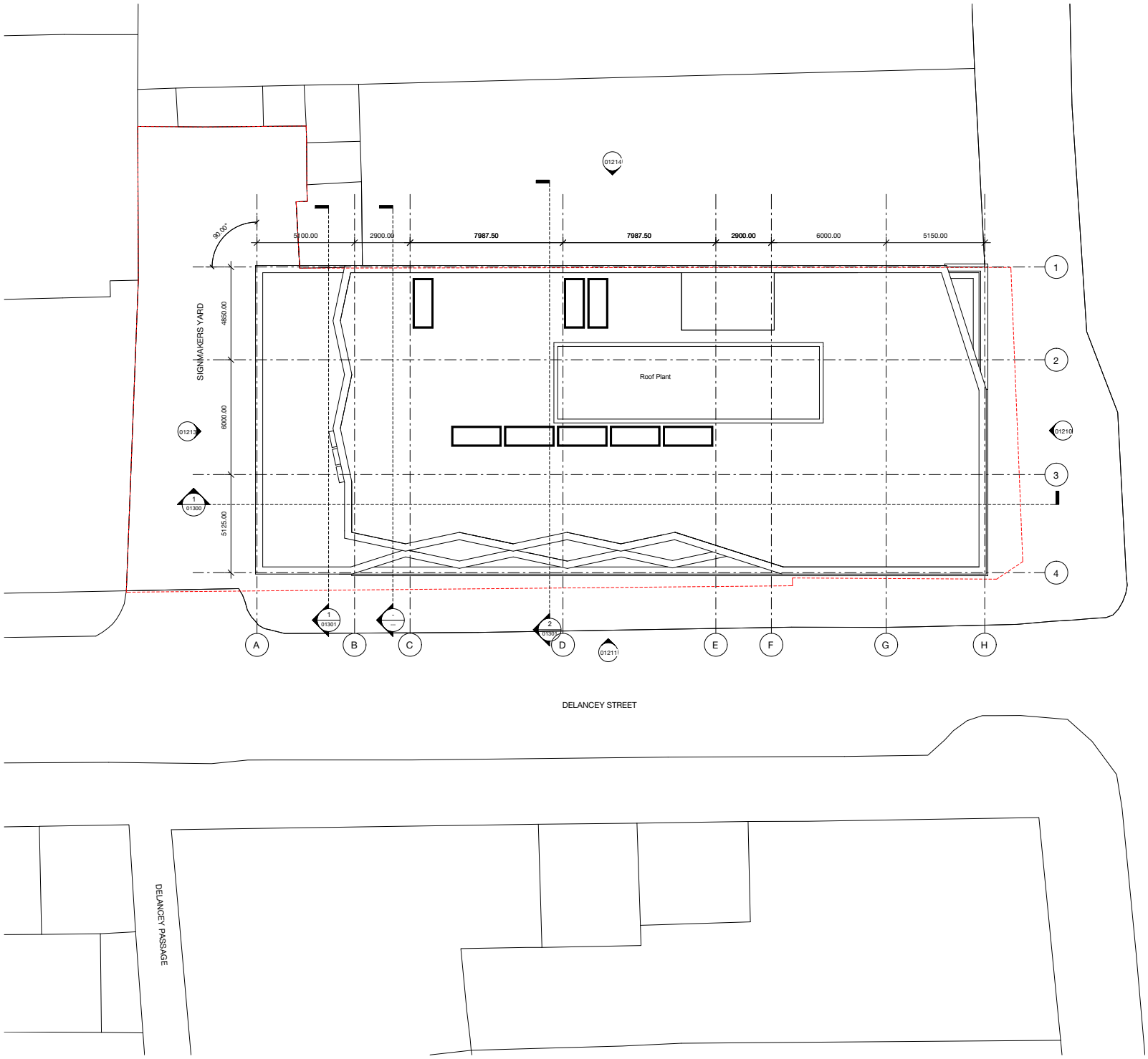

KEY LEGEND

Site ownership boundary

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- Transport & Servicing Strategy Report (RGP)
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- Daylight & Sunlight Report (PointZSurvey)
- Access and Maintenance Report (Morris+Company)

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revision	date	amendment

N

SCALE BAR

0 1000 2000 5000 10000 mm

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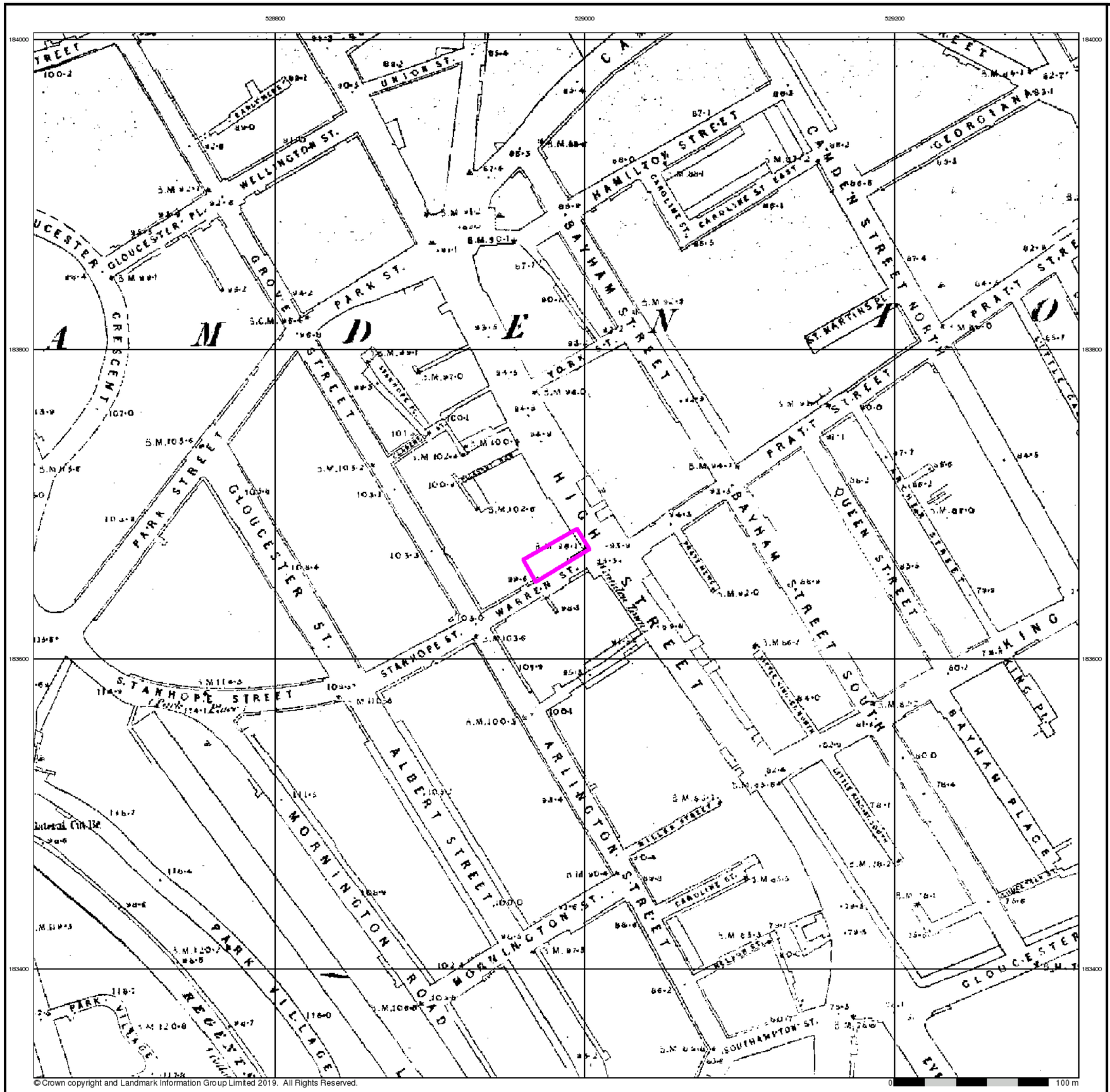
job title
Camden High Street Hub Hotel

drawing title / location
Proposed Roof Plan

status	Stage 2							
date								
scale	1 : 100 @ A1				1:200 @ A3			
project	originator	zone	level	type	role	number	status - revision	
A277	MCO	XX	R0	DR	A	01115		

Appendix ll



Envirocheck

LANDMARK INFORMATION GROUP®

London

Published 1851

Source map scale - 1:5,280

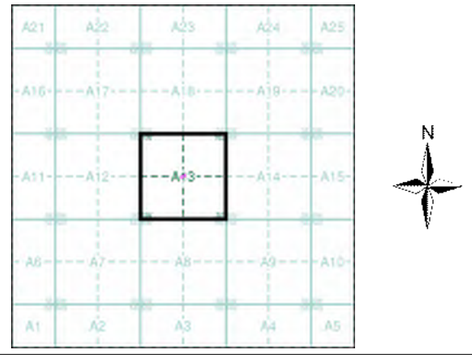
The historical town plans shown derive from Ordnance Survey mapping from the early to mid 1850s. The 1:2640 scale was introduced in the early 1850s, to survey districts covered by the Local Boards of Health and for a map of the Osborne Estate of Queen Victoria. The general style is similar to that of the early 1:2500s published shortly afterwards.
1:5280 scale was surveyed shortly afterwards in the mid 1850s as general purpose mapping with a standard of content similar to the more contemporary 1:10.560 mapping. The scale was also used for a reduction of the 1:1056 'skeleton survey' of London that was undertaken between 1848 and 1850.

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)

007_00_000_NW
1851
1:5280

Historical Town Plan - Segment A13



Order Details

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Customer Ref:	10/1345
National Grid Reference:	528980, 183670
Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	0

Site Details

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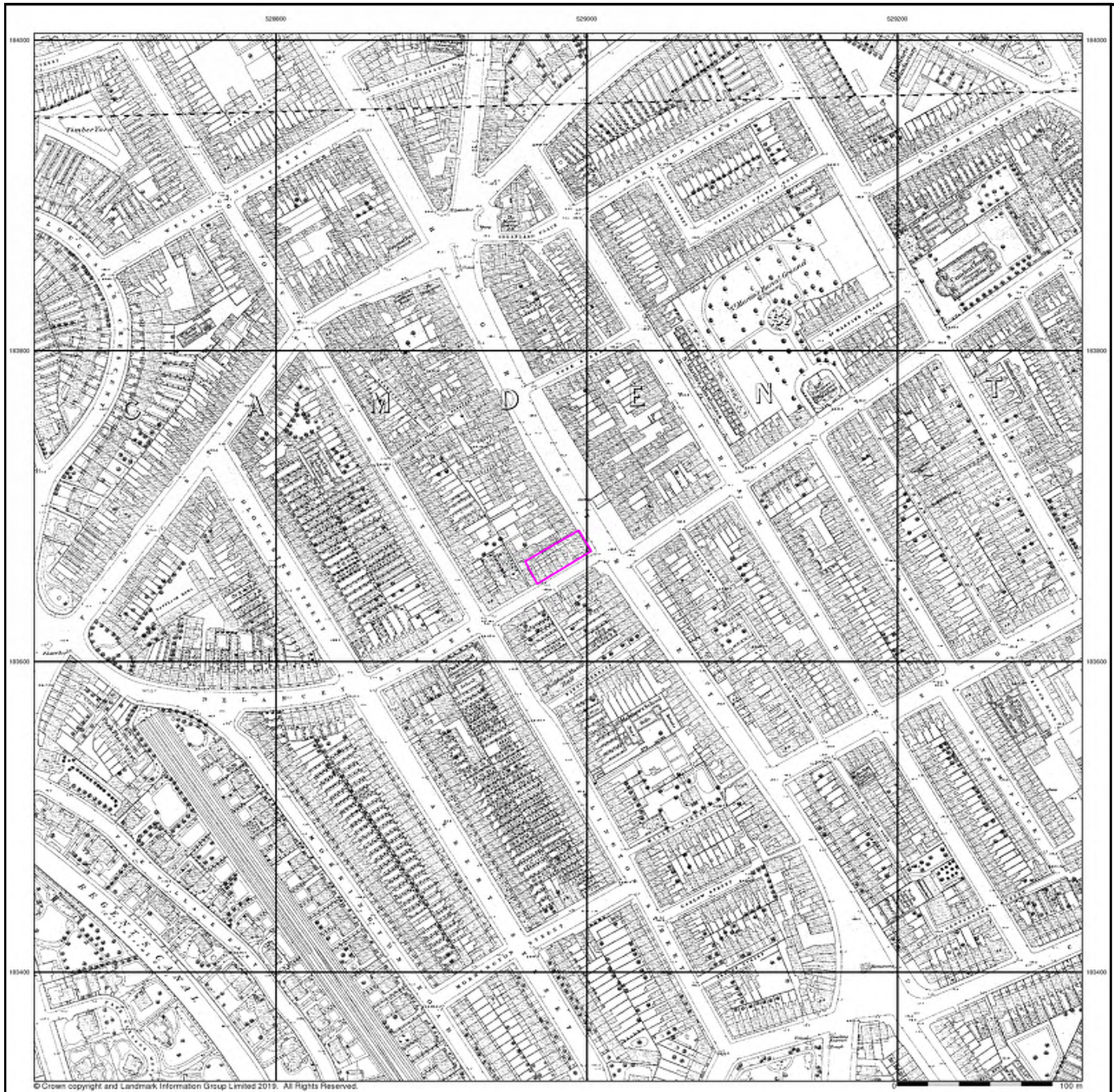
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529200
184000
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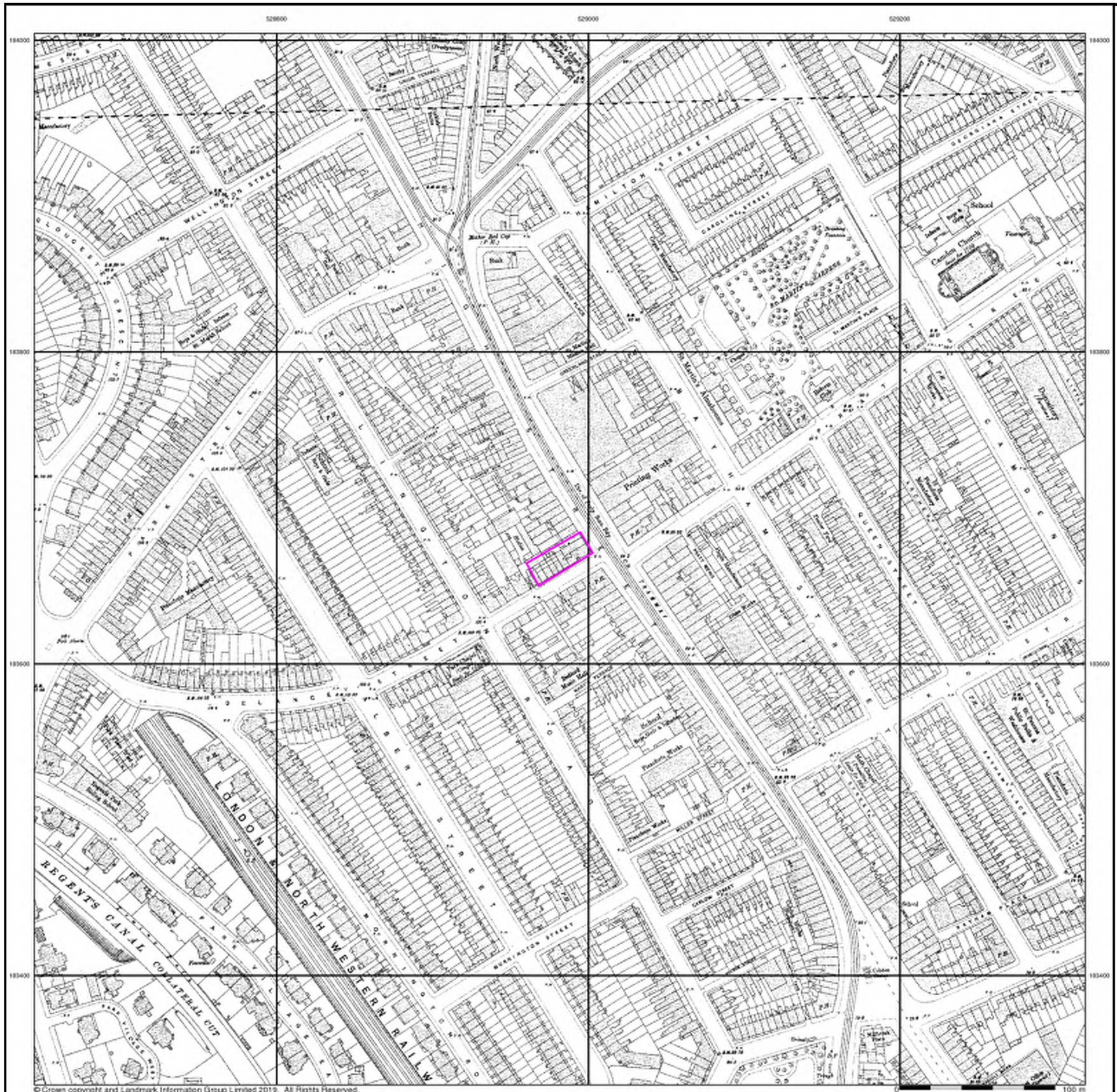
183600
183400
CAMDEN
Timber Yard
Wellington Terrace
Gloucester Place
Gloucester Street
Bell Place
Regents Canal
Park Village East
Albany Street
Harrington Street
Hampstead Road
Munster Square
Clarence Gardens
Regents Park Road
Primrose Hill
Chalcot Road
Adelaide Road
Eton Avenue
Belsize Park
Belsize Road
Belsize Grove
Lancaster Grove
Fitzjohns Avenue
Finchley Road
Swiss Cottage
Avenue Road
Eton Road
Hampstead Heath
Parliament Hill
Fitzroy Park
Highgate
Kenwood
Hampstead Heath Extension
Hampstead Cemetery
Hampstead Heath Extension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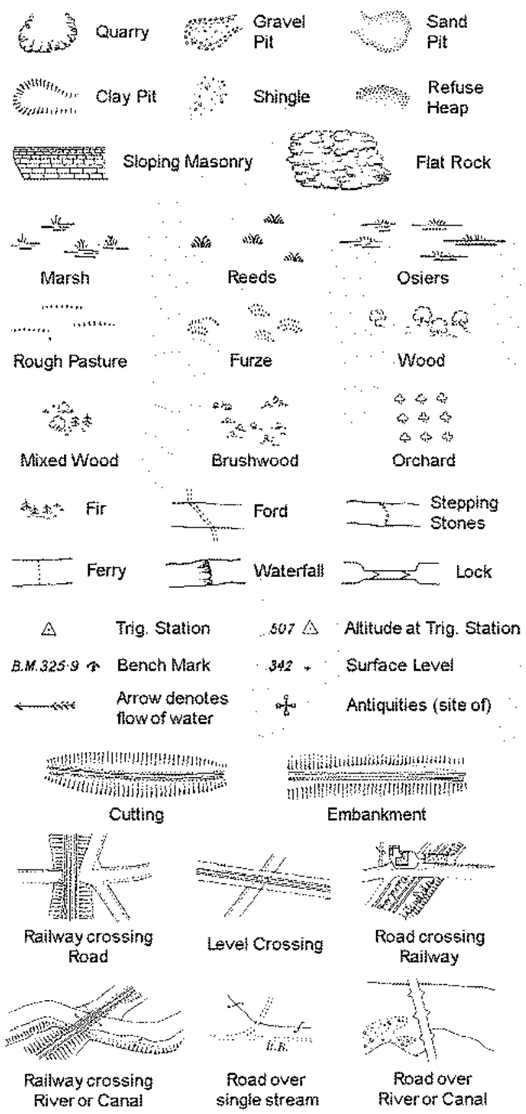
MILTON STREET
WELLINGTON STREET
CAROLINE STREET
Camden Church
Printing Works
Printing Works
Printing Works
Printing Works
Baker And Cpt
Bank
Bank
Bank

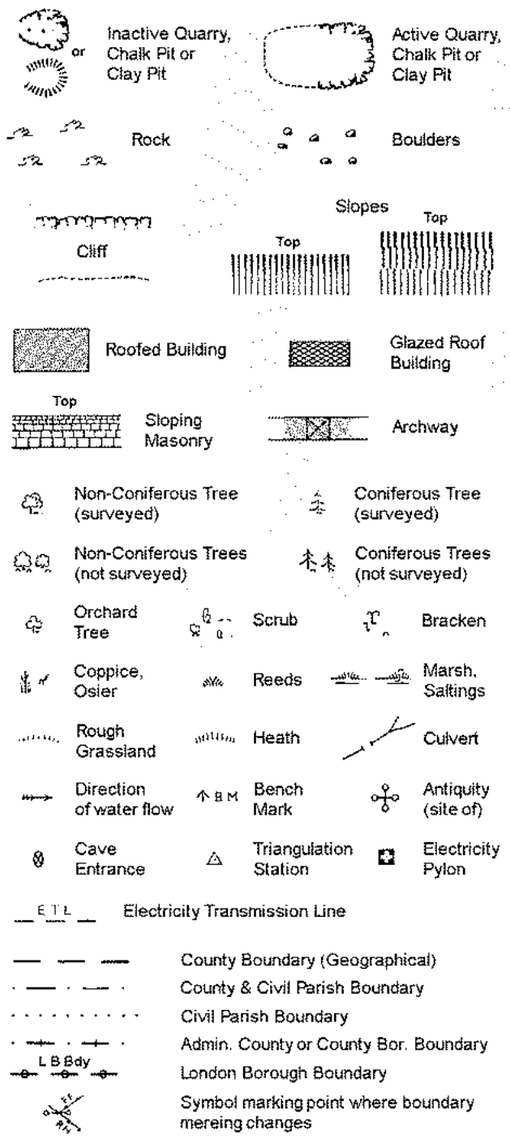
Historical Mapping Legends

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



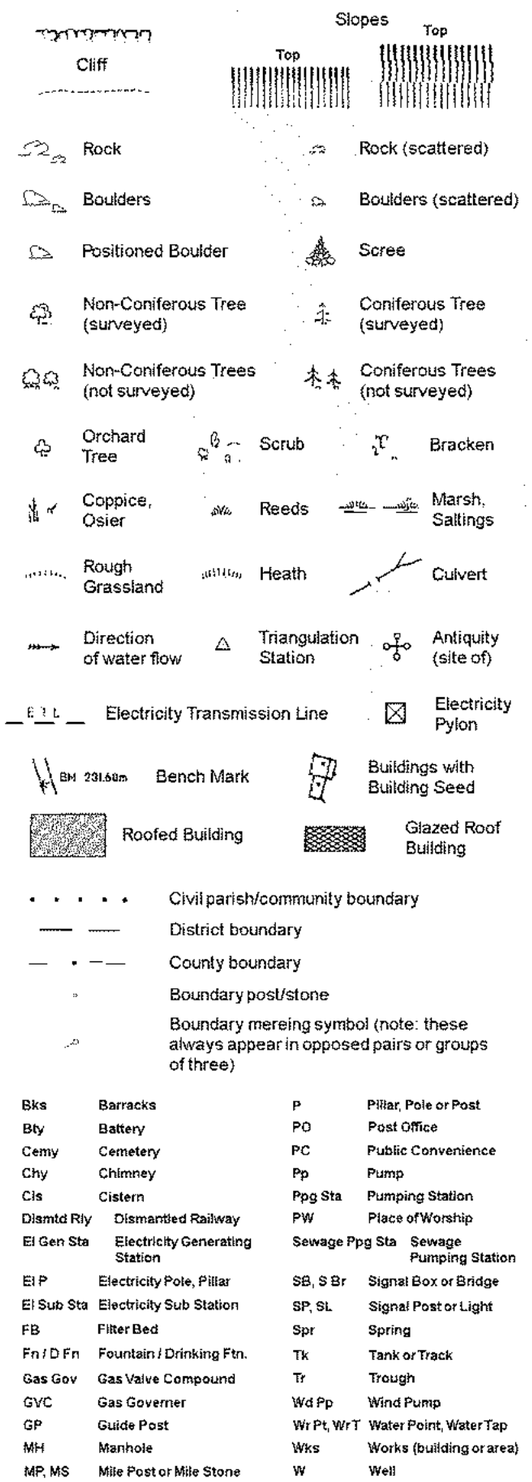
B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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



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

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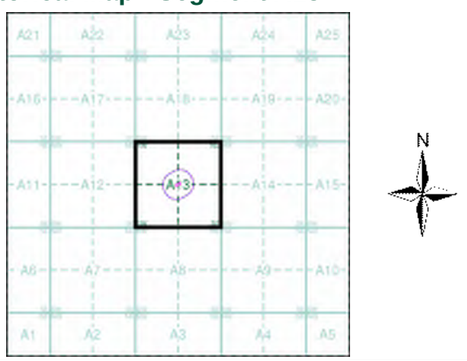
Historical Mapping & Photography included:

Historical Map - Segment A13



Order Details

Order Number:	193786874_1_1
Customer Ref:	10/1345
National Grid Reference:	528980, 183670
Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	100

Site Details

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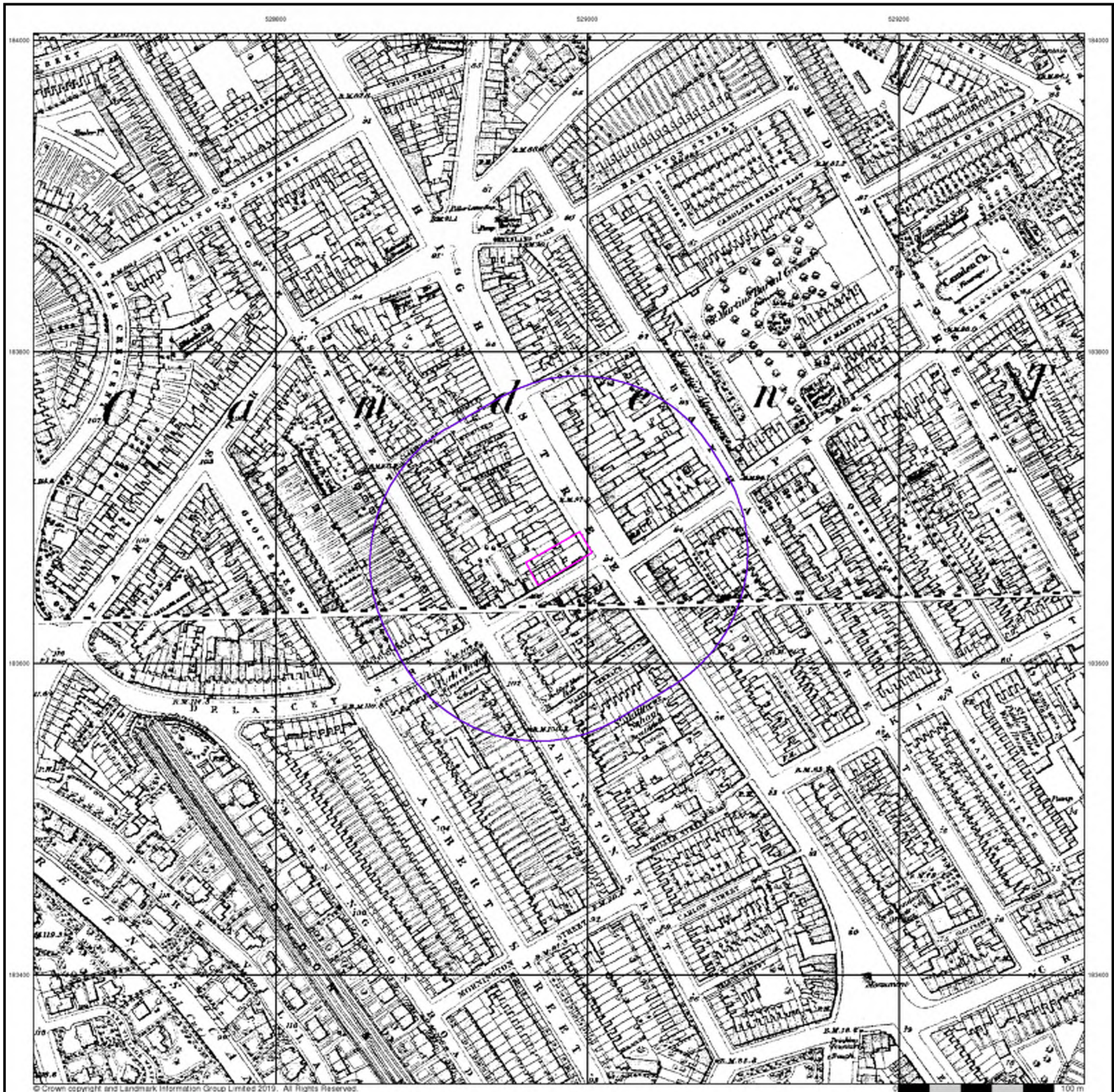
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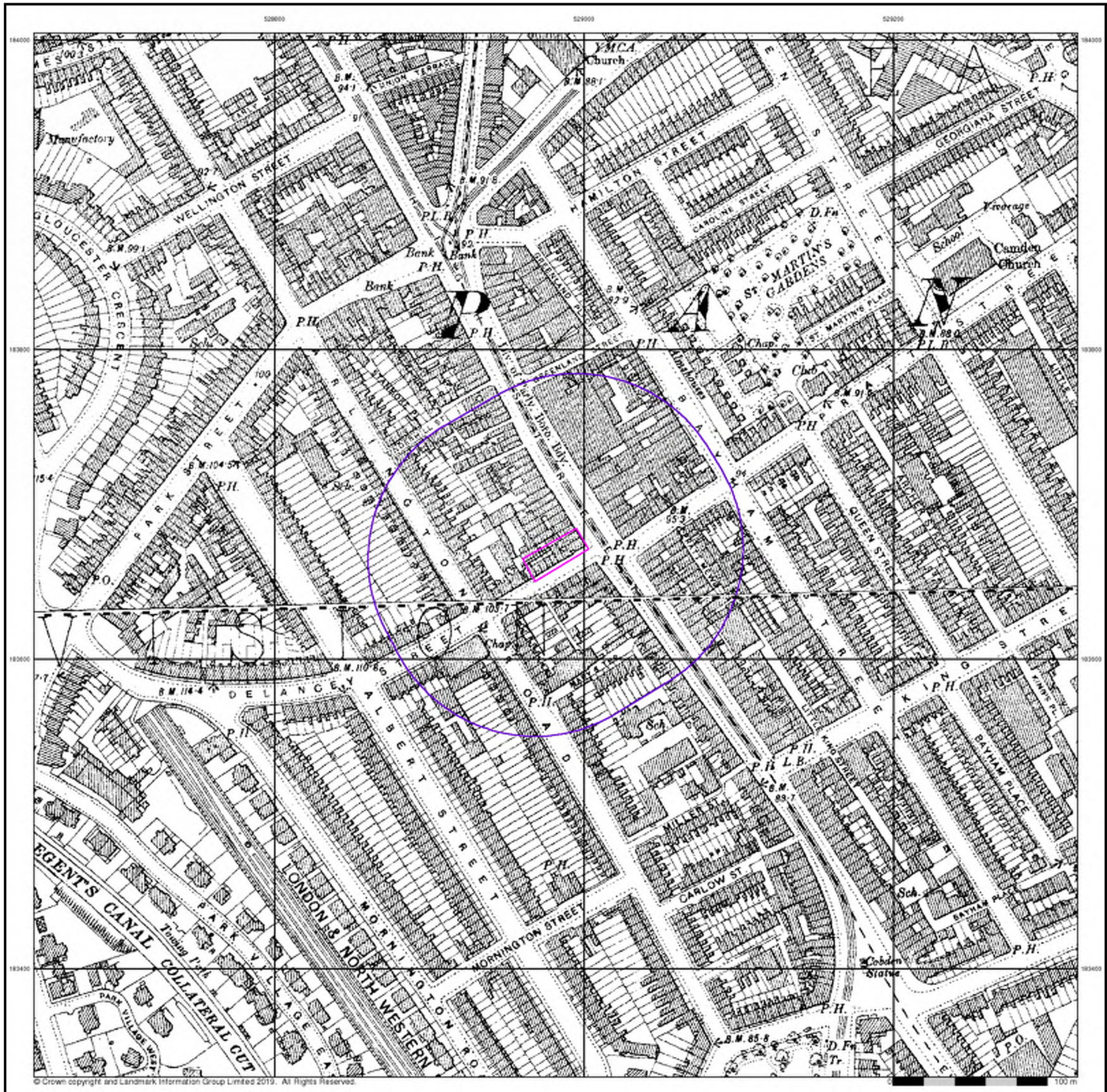
183800
183600
183400
Camden
PARK
GLOUCESTER CRESCENT
WELLINGTON STREET
CAMDEN HIGH STREET
CAMDEN STREET
CAMDEN PLACE
CAMDEN SQUARE
CAMDEN TERRACE
CAMDEN PARK ROAD
CAMDEN PARK
CAMDEN PARK ESTATE
CAMDEN PARK CLOSE
CAMDEN PARK VILLAS
CAMDEN PARK



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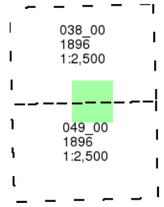
London

Published 1896

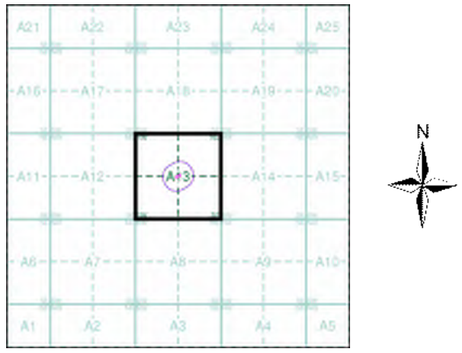
Source map scale - 1:2,500

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:	193786874_1_1
Customer Ref:	10/1345
National Grid Reference:	528980, 183670
Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	100

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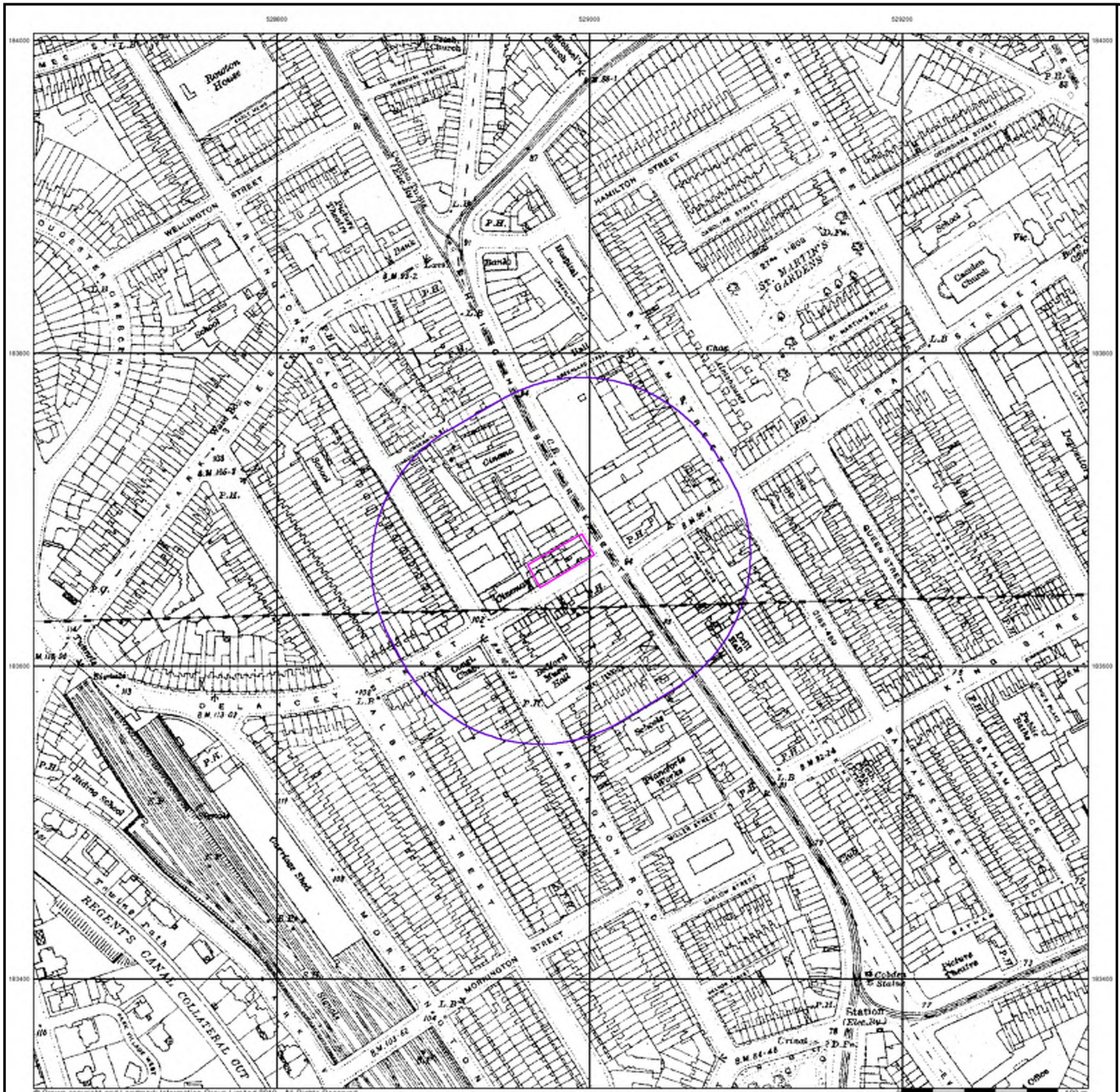
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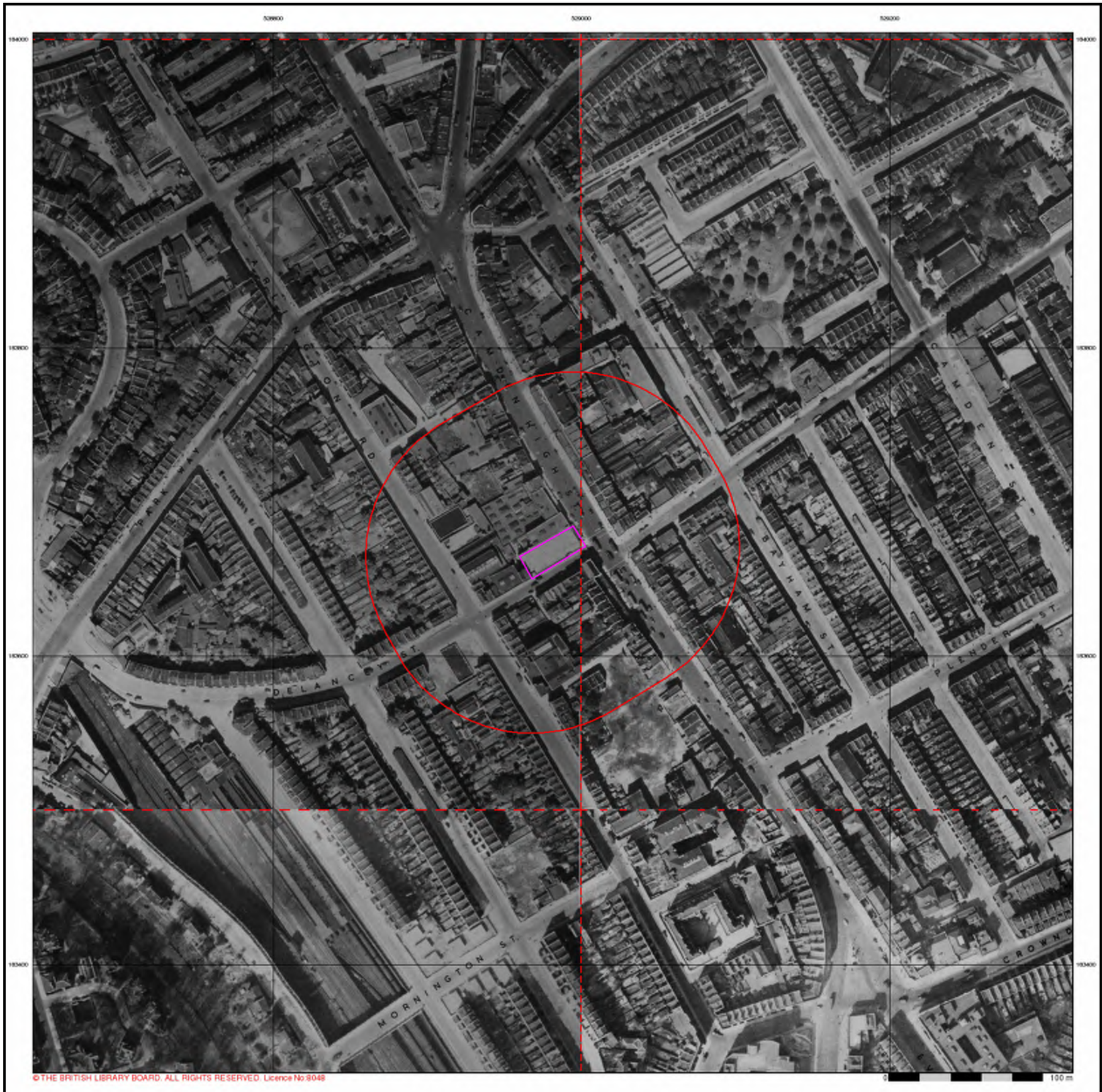
Euston House
EARLS WALK
EUSTON ROAD
WELLINGTON STREET
QUEBEC PLACE
QUEBEC STREET
HAMILTON STREET
CAROLINE STREET
ST. MARTIN'S GARDENS
ST. MARTIN'S PLACE
CAMDEN HIGH STREET
DELANCEY STREET
MORNINGTON CRESCENT
MORNINGTON STREET
ARLINGTON ROAD
DAWES STREET
QUEEN STREET
DAVIES STREET
BAYHAM PLACE
BAYHAM STREET
WALKER STREET
BARLOW STREET
Euston Church
St Michael's Church
Camden Church
Hospital
Theatre
Bank
School
Public Baths
Picture Theatre
Station
Cabmen's Shelter
Handford Works
Dwellings
Dwellings
Dwellings



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LANDMARK INFORMATION GROUP®

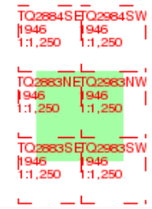
Historical Aerial Photography

Published 1946

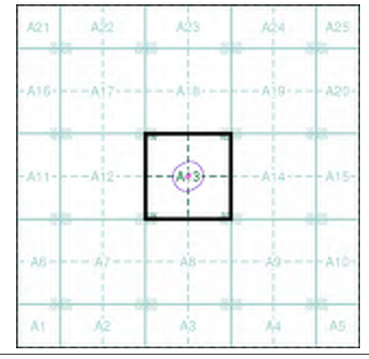
Source map scale - 1:1,250

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

Map Name(s) and Date(s)



Historical Aerial Photography - Segment A13



Order Details

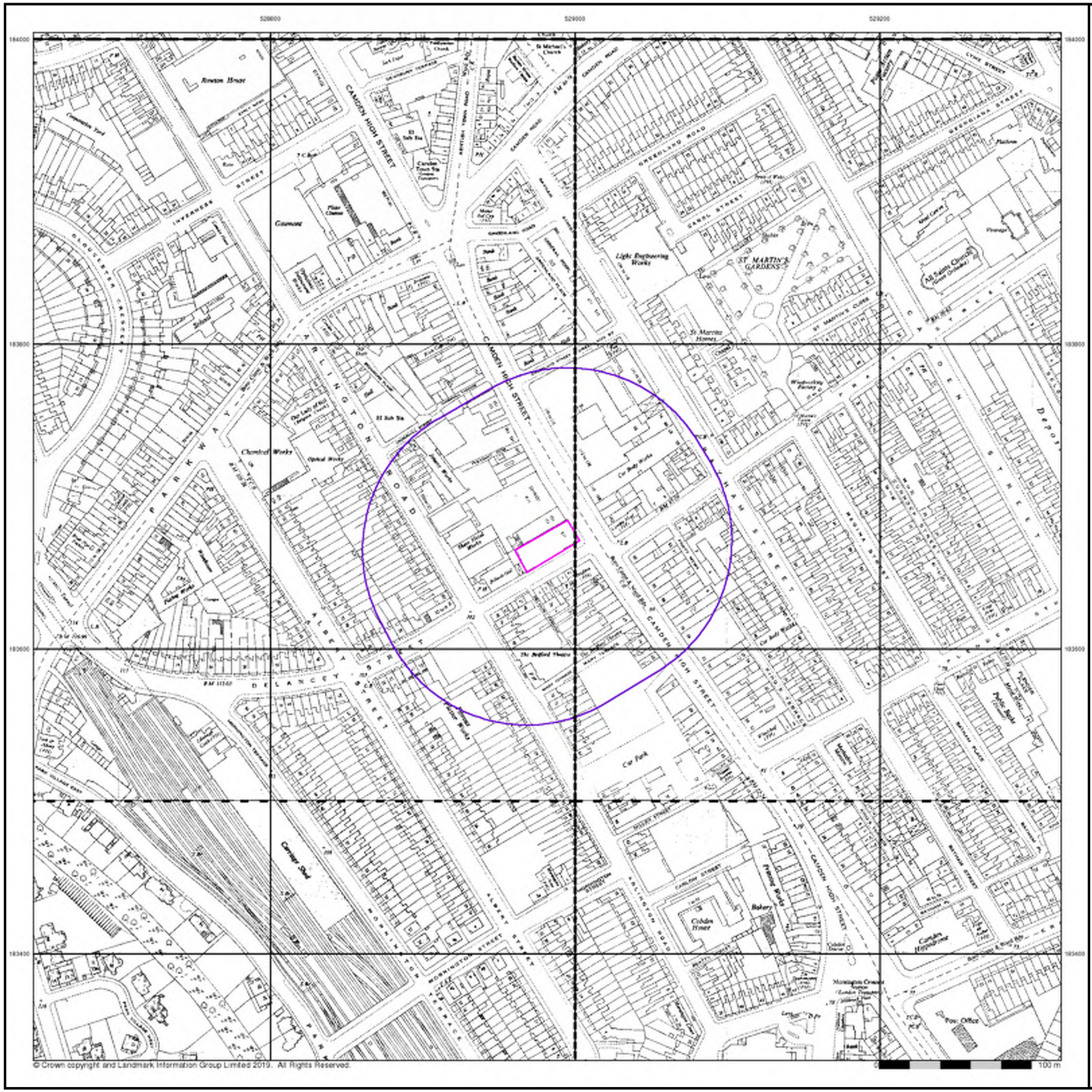
Order Number:	193786874_1_1
Customer Ref:	10/1345
National Grid Reference:	528980, 183670
Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	100

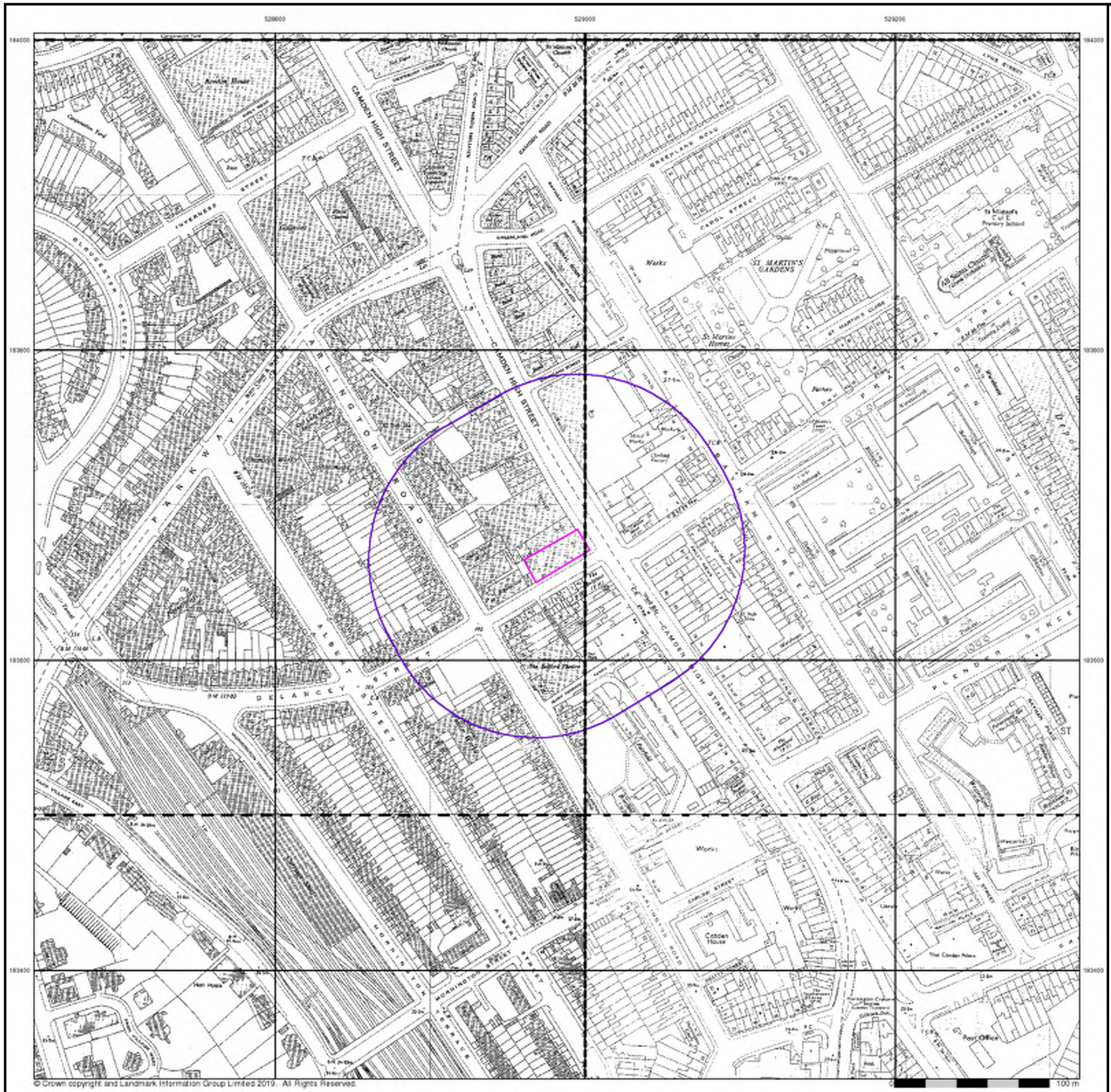
Site Details

115-119 Camden High Street, LONDON, NW1 7JS

Landmark INFORMATION GROUP

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


528800
529000
529200
184000
183800
183600
183400
183200
CAMDEN HIGH STREET
PARKWAY
ALBERT STREET
DELANCEY STREET
ARLINGTON ROAD
GREENLAND ROAD
CAMDEN ROAD
INVERNESS STREET
GLOUCESTER CRESCENT
ST MARTIN'S GARDENS
Rinson House
Gasworks
Light Engineering Works
Chemical Works
Optical Works
Car Body Works
Car Park
Carriage Shed
Bakery
Post Office
Camden Theatre
The Bedford Theatre
Public Baths
Pumping Works
Electricity Sub Sta
St Marinis Homes
All Saints Church
Camden Town Hall Annexe
Camden Town Hall
Camden Library
Camden Underground Station
Camden Town Station
Camden Lock Market
Camden Stables Market
Camden Lock Place
Camden Lock Bridge
Camden Lock Basin
Regents Canal
Regents Canal Towpath
Regents Canal Towpath Bridge
Regents Canal Towpath Bridge No 1
Regents Canal Towpath Bridge No 2
Regents Canal Towpath Bridge No 3
Regents Canal Towpath Bridge No 4
Regents Canal Towpath Bridge No 5
Regents Canal Towpath Bridge No 6
Regents Canal Towpath Bridge No



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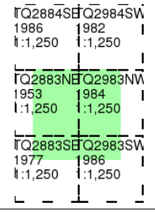
Additional SIMs

Published 1953 - 1986

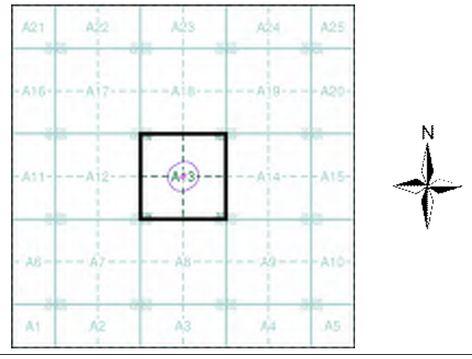
Source map scale - 1:1,250

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:	193786874_1_1
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Site Area (Ha):	0.07
Search Buffer (m):	100

Site Details

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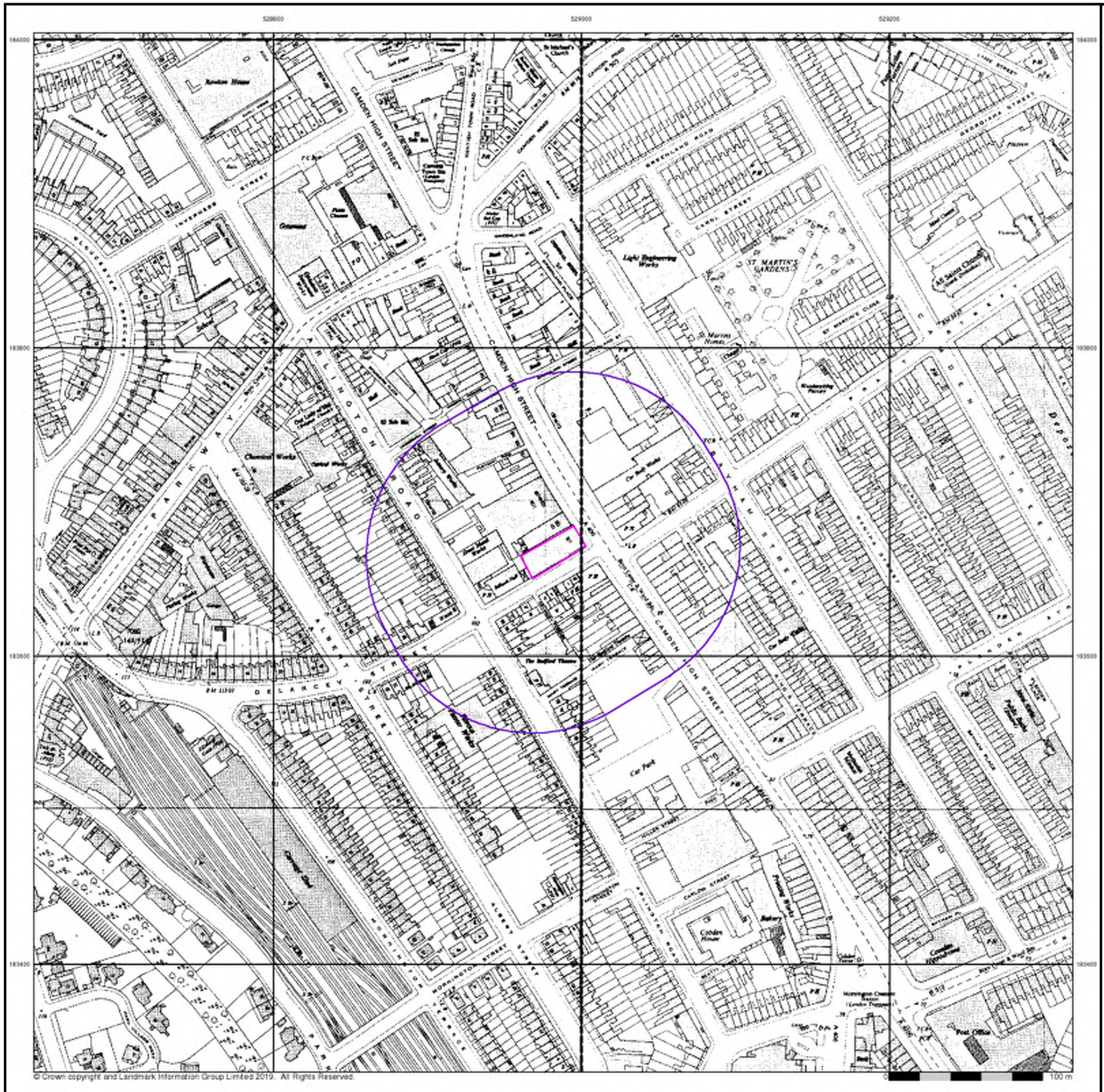

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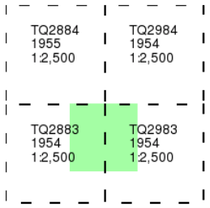
Ordnance Survey Plan

Published 1954 - 1955

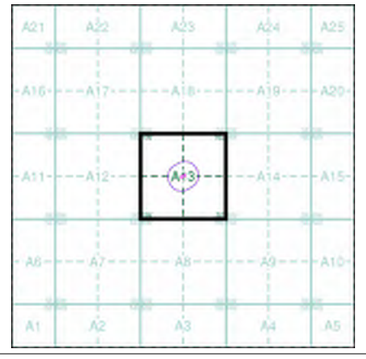
Source map scale - 1:2,500

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:	193786874_1_1
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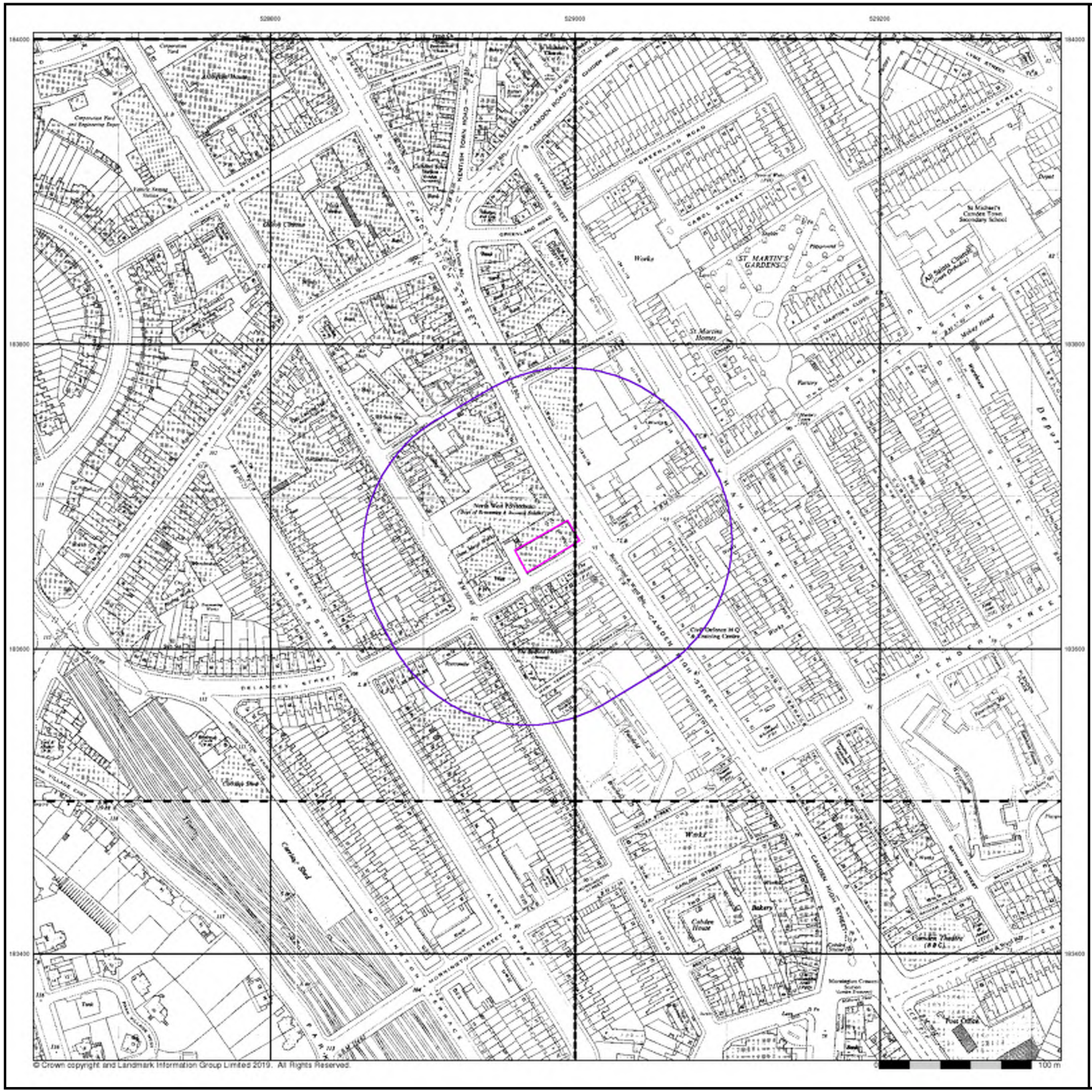

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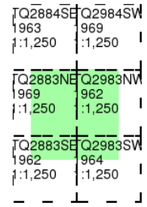
Ordnance Survey Plan

Published 1962 - 1969

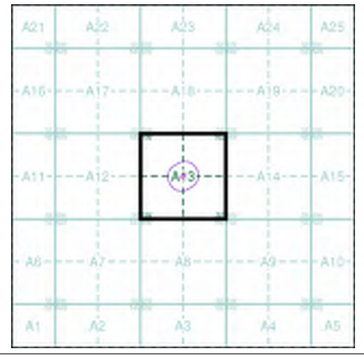
Source map scale - 1:1,250

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:	193786874_1_1
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National Grid Reference:	528980, 183670
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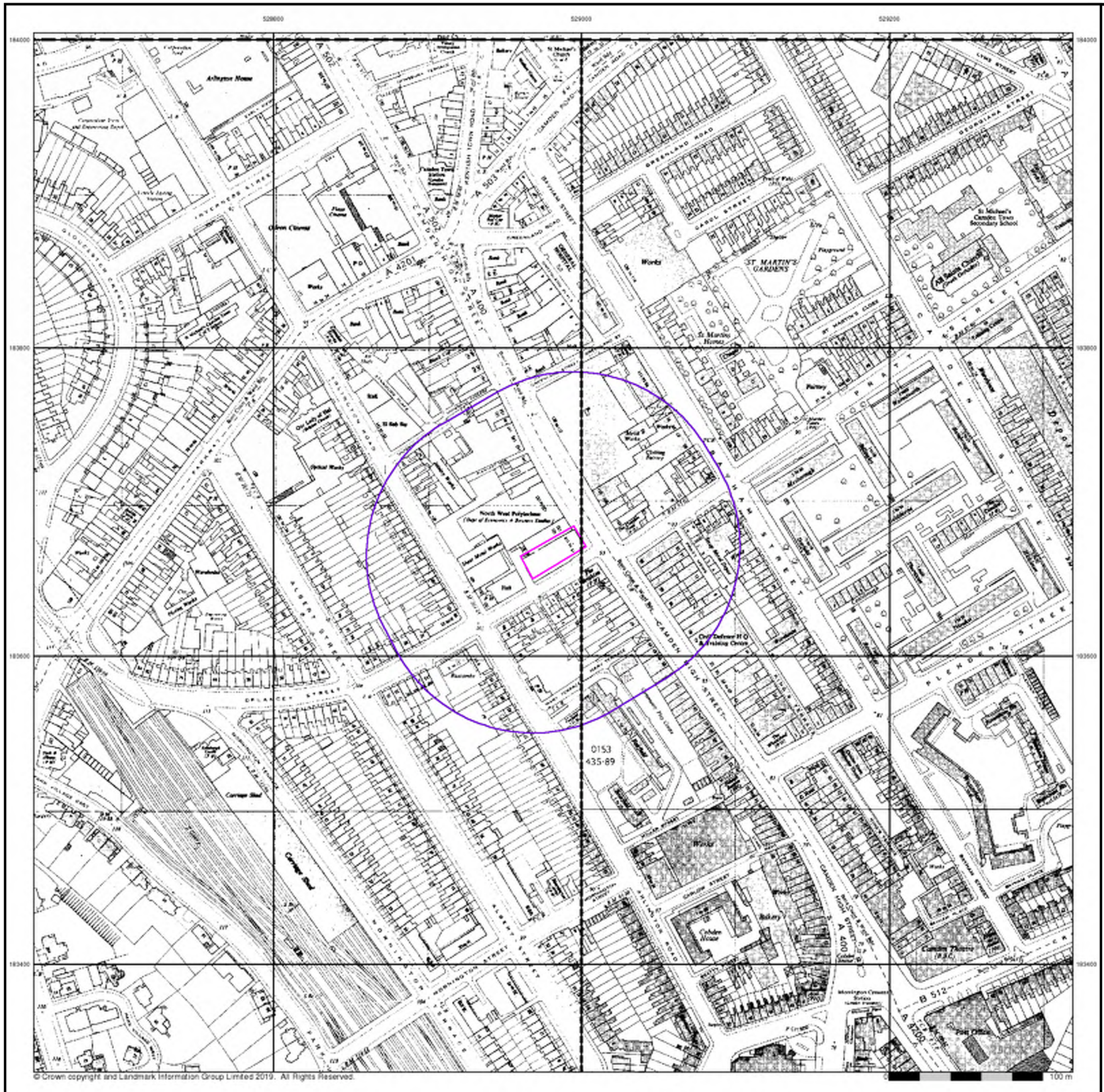

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Ordnance Survey Plan

Published 1970 - 1971

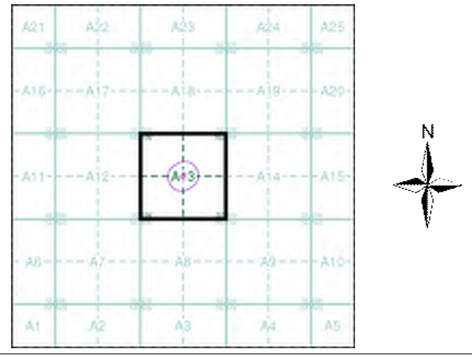
Source map scale - 1:2,500

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)

TQ2884 1970 1:2,500	TQ2984 1970 1:2,500
TQ2883 1971 1:2,500	TQ2983 1971 1:2,500

Historical Map - Segment A13



Order Details

Order Number:	193786874_1_1
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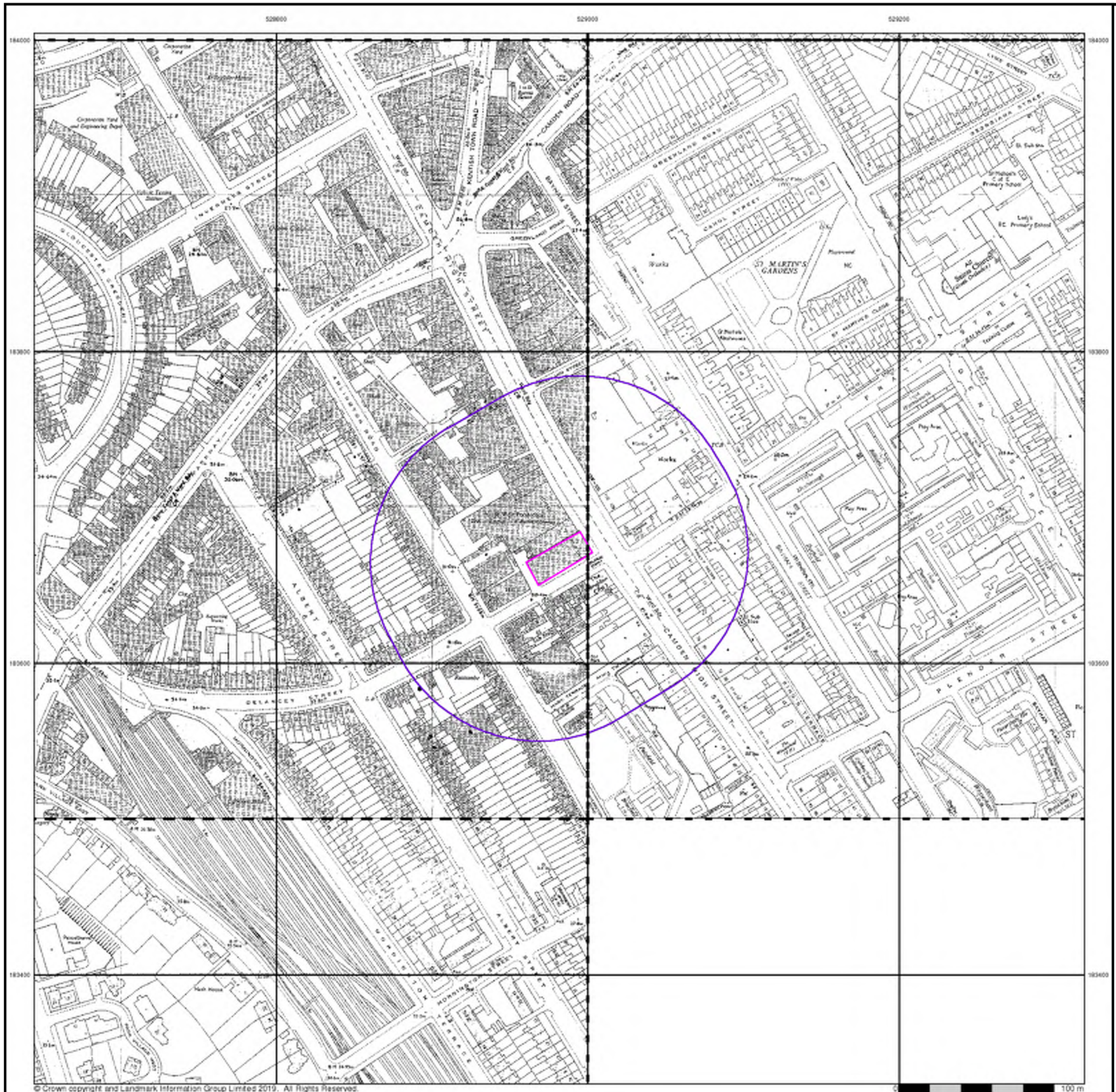

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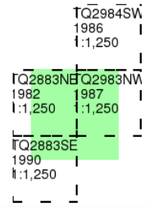
Additional SIMs

Published 1982 - 1990

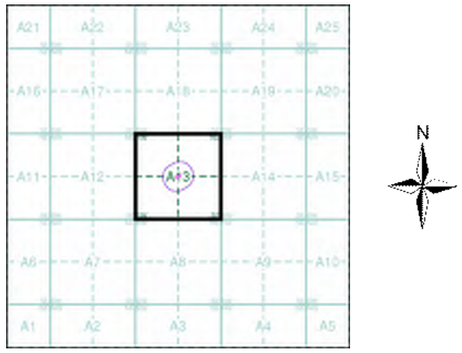
Source map scale - 1:1,250

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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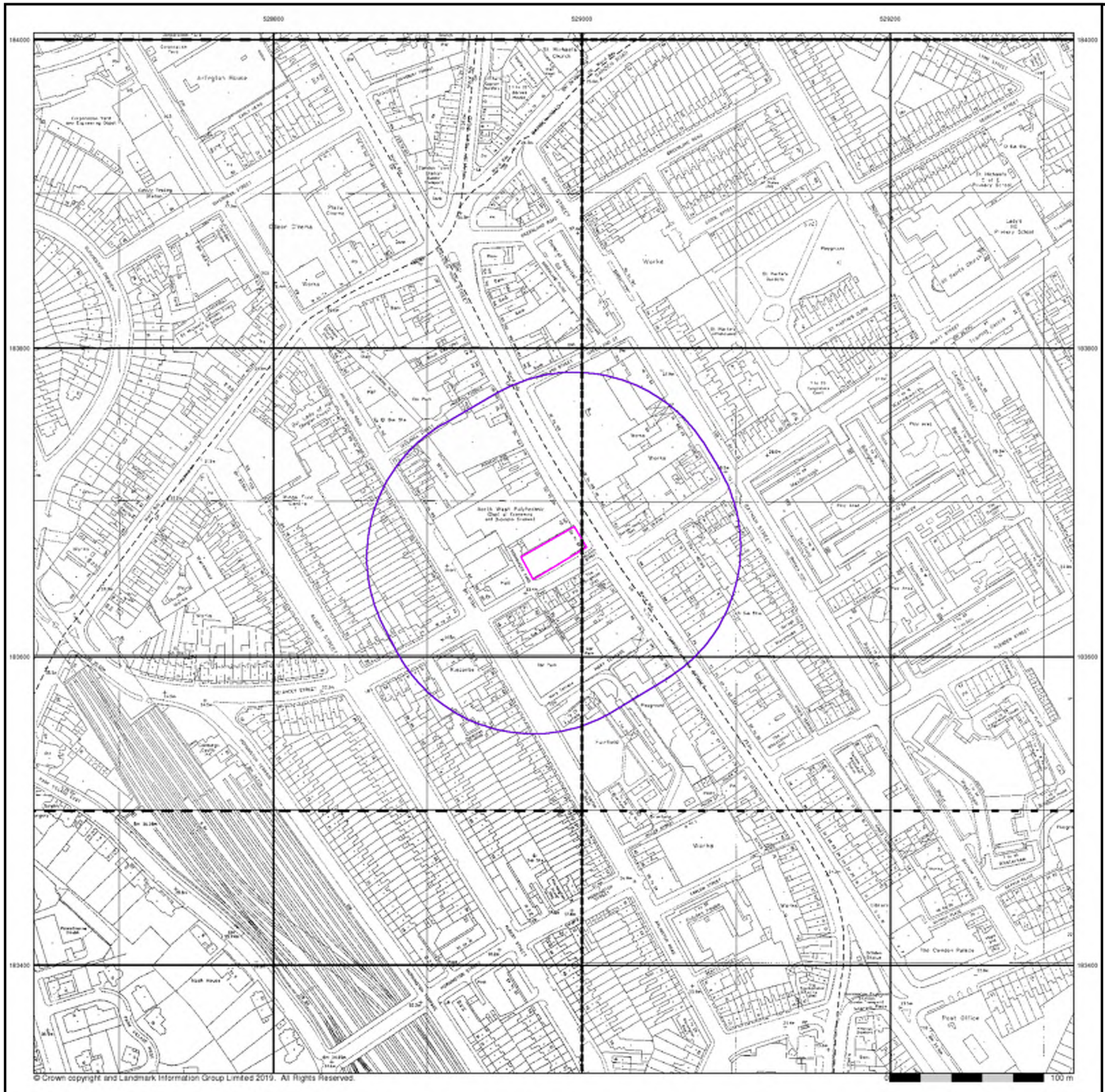

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LANDMARK INFORMATION GROUP®

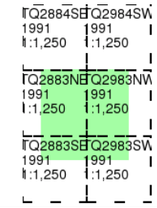
Large-Scale National Grid Data

Published 1991

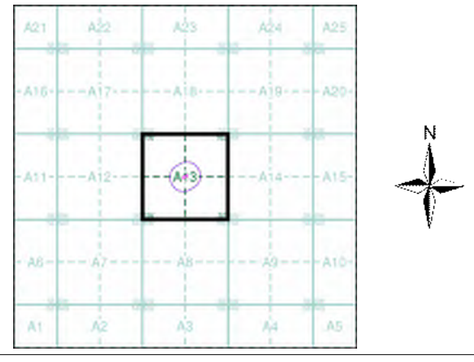
Source map scale - 1:1,250

'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:	193786874_1_1
Customer Ref:	10/1345
National Grid Reference:	528980, 183670
Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	100

Site Details

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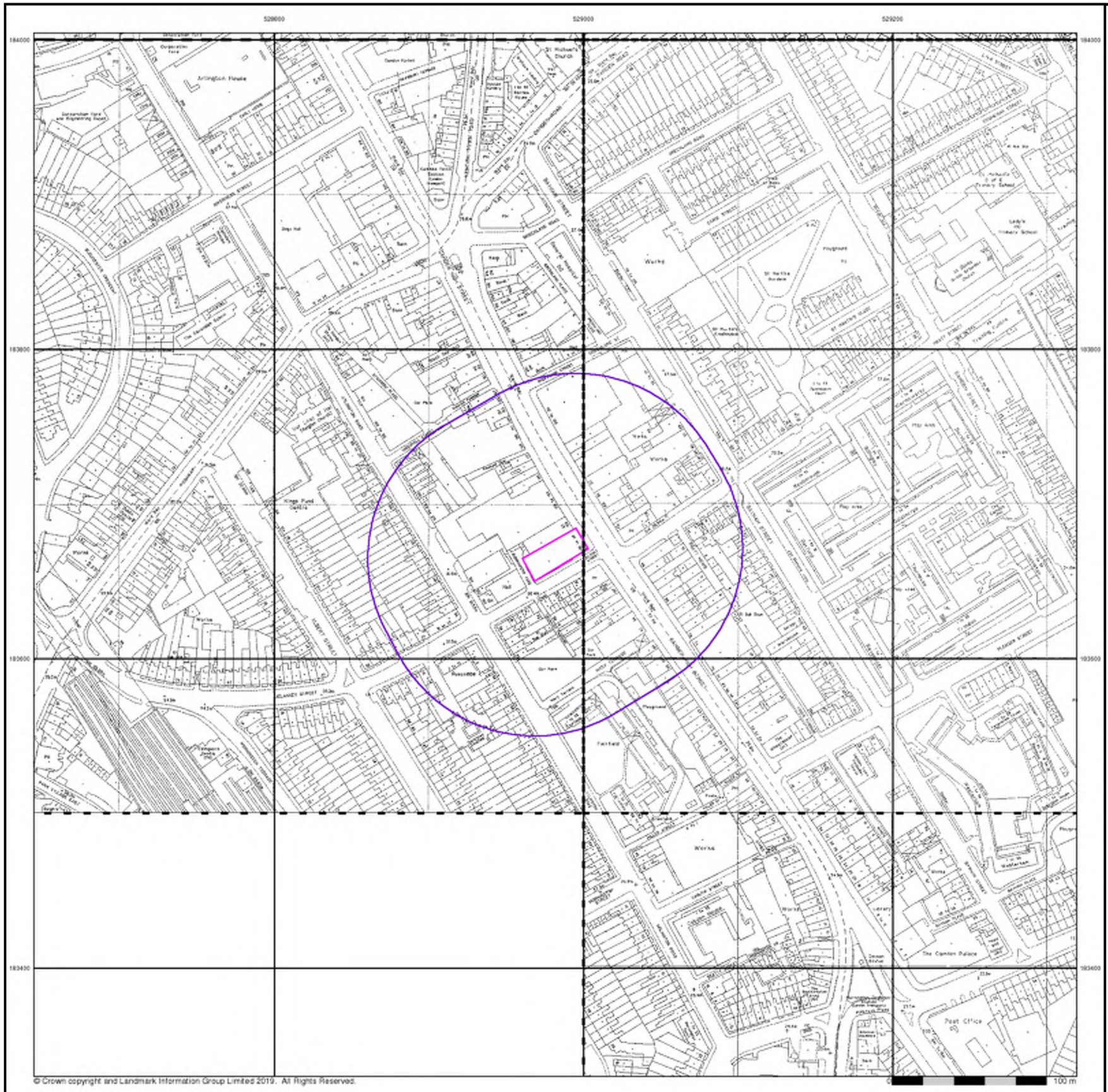


Envirocheck®

LANDMARK INFORMATION GROUP®

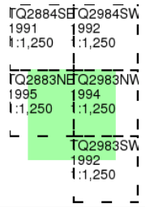
Large-Scale National Grid Data

Published 1991 - 1995

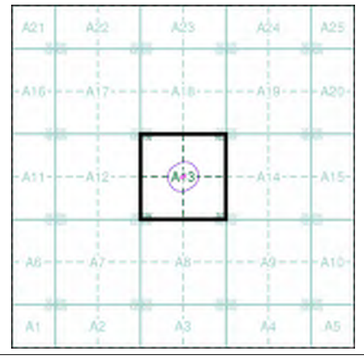
Source map scale - 1:1,250

'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:	193786874_1_1
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Slice:	A
Site Area (Ha):	0.07
Search Buffer (m):	100

Site Details

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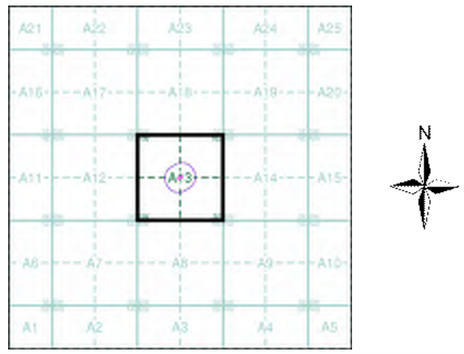
LANDMARK INFORMATION GROUP®

Historical Aerial Photography

Published 1999

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



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