

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT NEWHAM WAY, LONDON, E13 8PF


Geotechnical and Geo-Environmental Desk Study


FEBRUARY 2019

LAND AT NEWHAM WAY, LONDON, E13 8PF

Geotechnical and Geo-Environmental Desk Study

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1 INTRODUCTION

1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Transport for London (TfL) 'the Client' to undertake a number of technical surveys for a site at Newham Way, London ('the Site').

TfL is aiming to divest a number of small sites to enable positive regeneration. The objective of this review is to identify potential development constraints due to geotechnical and geo-environmental conditions on Site based on the findings of this desk study.

The objectives of this review are to:

- Review geo-environmental information regarding the Site and its surrounding area;
- Provide outline information on potential geo-environmental and geotechnical constraints which may impact on the land value or redevelopment potential for the site; and
- Identify potential development constraints due to geotechnical and geo-environmental conditions on Site.

The site location is shown in Figure 1 below.



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Figure 1: Site Location Plan provided by TfL

1.2 Sources of Information

As part of this desk study report various sources of information have been used and are detailed below:

- The on-line British Geological Survey (BGS) Geology of Britain Map Viewer (Ref. 1);
- Historical borehole records available through BGS website (above) (Ref.1);
- Historical Ordnance Survey maps obtained from Landmark Envirocheck (included in Appendix A);
- Environmental Information from Landmark Envirocheck Datasheet (Appendix B);
- Current publicly available aerial images and maps from Google maps (Ref. 2);
- Zetica Regional Unexploded Ordnance Map & Desk Study Risk Assessment report from UXO (Appendix C); and
- Unexploded Ordnance data obtained from Bomb Sight National Archives website (Ref. 3).

1.3 Limitations and Expectations

This report has been prepared for the Client in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format shall remain the property of Arcadis.

This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

2 SITE SETTING AND HISTORY

2.1 Site Location

Table 2.1: Details relating to Site Location

Site Location / Address	Newham Way, London, E13 8PF
National Grid Reference	540994, 181778
Approximate Site Area	The Site is roughly rectangular in shape and covers an area of approximately 0.08 hectares.
Description of Site	<p>The site is an area of public open space situated between Salomons Road to the east and Newham Way (the A13) to the south. It is bordered by a brick wall to the north which separates it from residential housing and is openly accessible by foot to the east, west and south. Vehicular access is restricted by bollards to the east and west of the site. There are paved pathways crossing through the site with landscaped grassy areas, trees and bushes between them.</p> <p>Evidence of below ground services (man hole covers) were observed that may be present beneath the site.</p>
Topography	The Topography of the site is generally flat at approximately 2 m Above Ordnance Datum (AOD). The immediately surrounding area is generally flat, with the local topography sloping very gently down from the north towards the River Thames to the south.
Surrounding Area	The Site lies within a predominantly residential area comprising houses to the north and west, Newham Way road adjacent to the south with sports/recreation grounds beyond to the south and playing fields to the east.

2.2 Site History

A review of the available historical Ordnance Survey maps (Appendix A) has been undertaken to assess the historical development of the Site and surrounding areas.

It is not the intention of this report to provide a full history, but to identify those past uses on and within the vicinity of the Site that could have resulted in contamination of the soils and/or waters. Significant changes to the land use of the Site and surrounding areas are summarised in Table 2.2 below.

Table 2.2 History of Site and Surrounding Area

Date	Historical Development (Site and Surrounding Area)
1869	<p>The Site is undeveloped land.</p> <p>The surrounding area is undeveloped agricultural land with a network of surface drainage ditches, a pond and a raised bank approximately 100-200 m the east and north east.</p>
1896	<p>No significant changes are noted on site.</p> <p>Raised bank is no longer shown. Beckton Road is constructed adjacent to the south with recreation ground beyond. Sluice gates are marked approximately 80m east and approximately 120m northeast of the site (along drainage network).</p>
1919-1920	Site is developed with residential buildings.

Date	Historical Development (Site and Surrounding Area)
	Sluice gates no longer marked. Mixed development is shown including residential buildings to the west and northwest of the site, allotments to the east, swimming bath marked approximately 50m south of the site.
1938-1946	No significant changes are noted on site. Increased residential development surrounding the site.
1952-1981	No significant changes are noted on site. Garage is present adjacent to the north west corner of the site. Electricity substation is marked approximately 100m northeast of the site.
1991 - 1999	No significant changes are noted onsite. Beckton Road is renamed as Newham way to the immediate south of the site. Swimming bath is infilled circa 1996.
2006	The buildings on site are demolished and the site is now undeveloped. Further mixed development in the surrounding area.
2019 (from publicly available aerial photography)	The site is a landscaped area of public open space. The garage adjacent to the north west has been redeveloped into housing.

2.2.1 Summary of Site History

The site was previously developed as housing which was demolished between 1991 and 2006 so there is potential for Made Ground to be present.

There was garage adjacent to the north west between circa 1955 and 2006 so there is potential for contamination to be present from leaks/ spills of hydrocarbons, lubricants, solvents and other associated chemicals. An electricity substation was present approximately 100m northeast, however based on the local topography, which slopes down from the north towards south, this is not up hydraulic gradient from the site so is considered unlikely to have impacted the site.

2.3 Unexploded Ordnance

With reference to the Zetica Unexploded Bomb Risk report for the site (Appendix C), the Site is designated as lying within an area denoted as "Medium to high" bomb risk. Further reference has been made to the Bomb Sight National Archives (Ref. 3) which indicates that two High Explosive bombs were dropped within approximately 100m around the Site.

A pre-desk study assessment (PDSA) was requested from Zetica (Appendix C) which states that during World War II the Site was located in the County Borough (CB) of West Ham, which officially recorded 1566 High Explosive bombs with a regional bombing density of 334 bombs per 405 hectares. Records indicate that several High Explosive bombs fell in close proximity to the Site.

The PDSA recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site.

A detailed Zetica desk study was obtained for the site (Appendix C) which considered the site to have low UXO hazard level based on the findings that no records were found indicating the Site was bombed, also no other significant source of UXO hazard has been identified on site.

3 PHYSICAL AND ENVIRONMENTAL SETTING

3.1 Published Geology, Hydrogeology and Hydrology

With reference to the sources of information detailed in section 1.2, the following information has been obtained.

Table 3.1 Information Regarding Geology, Hydrogeology and Hydrology

Geology / Aquifer Status	<p>Superficial Deposits: Alluvium described as clay, silt, sand and peat which is designated as a Secondary Undifferentiated Aquifer.</p> <p>Solid Geology: London Clay Formation which is designated as Unproductive Strata.</p>
BGS Boreholes (within 100m of the site)	<p>There are seven BGS boreholes within approximately 100m of the site. The nearest borehole (TQ48SW829 dated 1991) was identified approximately 35m south east from the site boundary and is summarised below.</p> <p>The borehole record indicated Made Ground upto a depth of 1.5 m bgl, followed by Alluvium comprising firm sand and clay to 3.4 m bgl, followed by dense to medium dense River Terrace Gravels upto a depth of 9.9m bgl, followed by stiff to very stiff London Clay upto 21m bgl. The Blackheath Beds (sandstone) were encountered underlying the London Clay. Groundwater strikes were encountered at several depths within the Alluvium, River Terrace Gravels and London Clay.</p>
Within a Source Protection Zone	Not recorded within 500m of the Site boundary.
Licensed Groundwater Abstraction Points	There is one licenced groundwater abstraction point noted within 1km of the Site; which is 897 m east of the site and relates to "amenity make up or top up water". The target strata is not supplied.
Surface Water Feature	No significant surface water features are recorded within 500 m of the site.
Likely Groundwater Flow Direction	<p>Significant groundwater flow within the London Clay bedrock is not expected to be present. The Alluvium is a Secondary Undifferentiated aquifer and likely to contain groundwater at shallow depths within granular material (sands and gravels). The nearest historical borehole log has indicated that River Terrace Gravels may be present beneath the Alluvium which would be likely to comprise groundwater.</p> <p>Based on the local topography, groundwater flow within the Alluvium and River Terrace Gravels is expected to flow towards the south and is expected to be flowing at a slow rate. Perched pockets of groundwater may also be present within or at the base of the Made Ground.</p>

3.2 Environmental Public Registers

Public register information from the Envirocheck Report (Appendix B) for the Site and the surrounding area (within 250m radius) has been summarised in Table 3.2 below.

It is not the purpose of this section to provide a comprehensive account of the environmental data but only to detail those factors that are or could impact the Site.

Table 3.2. Environmental Data

Data type	Description	Distance (m) and Direction
Radon	The site is in a lower probability radon area as less than 1% of	N/A

Data type	Description	Distance (m) and Direction
	properties are above the Action Level.	
Discharge Consents	None recorded within a 250m radius of the site	N/A
Pollution Incident to controlled waters	No incidents are recorded within 250m of the site.	N/A
Landfill sites (current and historical)	No current or historic landfill sites are recorded within 250m of the site.	N/A
Potentially Infilled Land	Nine areas of potentially infilled land are recorded within 250m of the site, dating from 1882. These may relate to infilled drainage ditches mentioned in Section 2.2, although the historical maps do not date back far enough to confirm.	34m – 241m surrounding the site
Local Authority pollution prevention and controls	Petrol filling station circa 1998 (likely to be related to the car repair garage below).	13m west of the site
Contemporary Trade Directory	Garage services – inactive	11m west of the site
	Charcoal suppliers - inactive	25m northeast of the site
	Domestic cleaning services - inactive	104m north of the site
	Garage services - active	111m northeast of the site
Fuel Station Entries	Park Garage Group at 387, Newham way Obsolete	104 northwest of the site

The former garage and petrol filling station adjacent to the north west could have impacted the site due to their close proximity. The site has been previously developed and the buildings demolished, therefore Made Ground is anticipated to be present which could contain contaminants.

The majority of the above Contemporary Trade Directory Entries are not directly up hydraulic gradient from the site so it is considered unlikely that they would have impacted the Site. The infilled drainage ditches were infilled circa 1882, so a remaining impact is considered to be unlikely.

4 PRELIMINARY CONCEPTUAL MODEL

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552 - Ref. 4 and CLR11 – Ref. 5) to consider the significance of potential contamination in terms of plausible source-pathway-receptor contaminants linkages. As part of this process, it is necessary to develop a conceptual model of these potential contaminant linkages by identifying the potential contamination sources, sensitive receptors and any potential exposure pathways. A risk assessment is then undertaken to determine the likelihood that these potential contaminant linkages are complete.

4.1 Potential Contaminant Sources

Based on the information obtained from the historical and environmental research, the following potential sources of contamination have been identified on site and within the surrounding area (Table 4.1).

It should be noted that it is considered unlikely that all these substances would be present at significant concentrations within the site.

Table 4.1: Potential sources of contamination on site

Source	Potential Contaminants
On Site	
Made Ground is likely to be present on the site from previous development and demolition.	Asbestos, metals, Polycyclic Aromatic Hydrocarbons (PAH), hydrocarbons, ground gas
Alluvium underlying the site	Ground gas
London Clay	Sulphates
Off Site	
Car Repair Garage and petrol filling station adjacent to the northwest of the site	Metals, Polycyclic Aromatic Hydrocarbons (PAH), Hydrocarbons, lubricants and solvents from potential spills/leaks during vehicle maintenance/ repair activities at the car repair garage. Metals, PAH and Hydrocarbon contamination from below ground fuel tanks associated with petrol filling station.

4.2 Potential Receptors

The proposed form of the development is currently unknown. As a precautionary approach the potential receptors detailed below take into consideration the proposed future land use as residential properties with private gardens and landscaped areas. It is considered possible that any potential contamination within the soils may be disturbed during the construction phase, or during gardening or landscaping undertaken by any future site users.

4.2.1 Human Health

- Future site users (residents, visitors, maintenance workers and contractors)

Contamination risks to construction workers are not appraised by chronic (long term) exposure human health risk assessments. There are no appropriate published criteria applicable to the assessment of potential risks to construction workers. The potential risks should be addressed by a site-specific construction workers risk assessment and implementation of appropriate health and safety measures, to adequately mitigate any potential risks. All works should be conducted in accordance with the CDM regulations 2015 (Ref. 6) or any other relevant guidance. Construction workers are not considered further as human health receptors.

4.2.2 Controlled Waters

- Secondary Undifferentiated Aquifer within superficial deposits.

4.2.3 Buildings

- Underground/ structures/services (water pipes, concrete, foundations).
- Proposed buildings.

4.3 Potential Pathways

Potential pathways are the routes that link the receptor to the contamination. The potential pathways for this site are summarised in the table below.

Table 4.2: Potential Contaminative Pathways

Receptor	Description
Human health (future site users/residentials, visitors, maintenance workers and contractors)	<p>Accidental ingestion of contaminants within soil, water and dust.</p> <p>Inhalation of dust, vapours and ground gases</p> <p>Dermal contact with contaminants within soil, water and dust.</p> <p>Ingestion of contaminated vegetables and soil attached to vegetables.</p>
Controlled Waters (Secondary Undifferentiated Aquifer)	<p>Leaching of potential contaminants in soil or Made Ground into groundwater.</p> <p>Vertical migration of soluble contaminants through the unsaturated zone into groundwater beneath the site.</p>
Buildings	<p>Direct contact of building services or foundations with contaminants in the soil and Made Ground.</p> <p>Gas and / or vapour accumulation in confined and poorly ventilated spaces.</p> <p>Sulphate attack on buried concrete (direct contact).</p>

4.4 Preliminary Qualitative Risk Assessment

Primary sources of on-site contamination are considered to be associated with the adjacent former car repair garage and petrol station to the north west which are a potential source of contamination that could have migrated beneath the site. Development and demolition has been undertaken at the site, therefore there is the potential for Made Ground to be present which could contain contaminants.

Without mitigation, future site users may be at risk from contaminants that may have migrated beneath the site from the former car repair garage/ petrol station. Exposure could occur in gardens or soft landscaped areas, especially if soils are disturbed by activities such as digging / gardening. In addition, gross hydrocarbon contamination (if present) could generate hydrocarbon vapour

If present, gross hydrocarbon contamination that could have migrated beneath the site could pose risks to the built environment (in particular, it could permeate plastic water supply piping).

Contamination could be mobilised or disturbed by the works. Rainfall derived leaching could be exacerbated causing contamination of the underlying Secondary Undifferentiated Aquifer. This risk is especially prevalent if intrusive construction methods or piling create a preferential pathway for contaminants in the Made Ground to enter the underlying aquifer.

Made Ground is likely to be present on the site from former development and demolition of buildings. If significant depths of Made Ground are present, and this contains putrescible matter, ground gas / vapours

could be generated which could accumulate in confined spaces and pose risk to future site users. Potential contaminants in the Made Ground could impact the built environment and controlled waters if mobilised or disturbed by the works.

The underlying Alluvium is a potential source of ground gas that could migrate into confined spaces.

The London Clay is a source of naturally occurring sulphates which could impact buried concrete.

This risk will need to be further understood through intrusive investigation into the ground conditions and potential contaminants present. If the Site is found to be contaminated, mitigation measures will be required to break the source-pathway-receptor linkages.

5 Waste Management and Potential Development Constraints

5.1 Waste Management

Consideration should be given to the disposal of waste soils/Made Ground which are likely to be generated by the development. Chemical testing of soils/Made Ground is likely to be required to inform a waste classification assessment and determine the potential disposal options. It should be noted that the waste contractor may require testing of the actual material to be disposal prior to acceptance, and there is no obligation on a landfill operator to accept the waste.

Soils suspected of being contaminated should be segregated from soils which appear to be 'clean' and should not be used elsewhere on the site as fill or landscaping unless they can be proven to be fit for purpose.

Imported topsoil for gardens and landscaped areas should be clean, fit for purpose and validated as necessary.

5.2 Potential Development Constraints

Below ground services may be present beneath the site. The paved pathway may need to be removed or broken out and the brick wall which separates the site from the residential housing to the north of the site may need to be retained. Trees and bushes are present on the site which may need to be removed. Vehicular access onto the site may be restricted by bollards to the north and east.

A ground investigation is recommended to determine the potential contamination present on the site. From experience, the potential for the need to undertake remediation should be limited given that the Site has not previously been used for industrial or commercial use. However, further the former garage and petrol station adjacent to the north west are potential sources of contamination that could have migrated beneath the site.

The following potential environmental conditions have been identified that will warrant further consideration and/or implementation:

- Removal of former foundations and concrete obstructions (if present);
- Targeted investigation of the western/ north western area of the site to determine the potential impact from the adjacent former car repair garage/ petrol station;
- Excavation and replacement of upper part of Made Ground to support topsoil and/ or foundations ;
- Asbestos protection measures during disturbance of Made Ground (depending on the findings of the ground investigation);
- Groundwater control measures and treatment of extracted groundwater (depending on the findings of the ground investigation);
- Provision of gas protection measures (depending on the findings of the ground investigation);
- Provision of contaminant resistant water supply pipes (depending on the findings of the ground investigation);
- Provision of clean cover system and a suitable growing medium in garden areas and public open space;
- Potentially further investigation and consultancy advice to support planning obligations.

6 Geotechnical Considerations

Ground conditions anticipated at the site are likely to comprise Made Ground as the site has previously been developed. In the nearby historical borehole log (Ref. 1) (approximately 35m south east), Alluvium is encountered at shallow depths (from 1.5 m bgl), followed by River Terrace Gravels to 9.9 m bgl, underlain by London Clay.

Potential founding solutions will be dependent on the thickness of Made Ground and the geotechnical properties of the natural deposits. Made Ground is generally considered unsuitable for foundations due to its variable composition and its potential for high total and differential settlement.

Below ground structures and services associated with previous structures may be present and will require removal prior to redevelopment. Ground disturbance caused by the removal of historical structures may increase the thickness of Made Ground already present beneath the site locally.

At this stage, conventional shallow foundations may not be appropriate for the site, but this would depend on the thickness of the Made Ground and the underlying ground conditions. Deeper trench fill may be possible although the maximum practical extent of this type of foundation is in the region of 2-2.5 m. In areas of deeper Made Ground, or where deeper soft / loose bands are recorded, either piling or ground treatment e.g. vibro-stone columns should provide a suitable foundation solution. The advice of a specialist ground improvement contractor should be sought to verify the suitability of the ground for treatment.

Consideration will need to be given to the presence of existing trees that are removed, retained or the planting of future trees when considering the depths of the foundations. In addition, the risks associated with the London Clay include high plasticity clay which are subject to shrinkage and swelling, sulphate attack and should be considered during the investigation / design.

7 Conclusions and Recommendations

The site is currently an area of landscaped public open space. An intrusive site investigation has not been undertaken at this stage. The site was previously developed as housing from circa 1919 which was demolished by circa 2006, therefore Made Ground is anticipated to be present. There was a historical car repair garage and petrol filling station to the adjacent northwest of the site which are a potential source of contamination that could have impacted the site.

Potential receptors are considered to be future Site users, proposed buildings and underground structures / services and groundwater beneath the site (Secondary Undifferentiated Aquifer identified within the underlying Alluvium).

Potential geo-environmental constraints have been identified that may impact on the future development. Whilst contamination may be present within the underlying soils, mitigation of risks to Site end users may be delivered by the appropriate design of the development itself (i.e. the use of hardstanding to limit the pathway for human exposure) rather than large scale removal of materials.

7.1 Design Considerations

Potential risks to human health, controlled waters and the built environment have been identified. It is recommended that an intrusive site investigation should be undertaken prior to redevelopment to quantify these risks. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 7) and CLR 11 (Ref. 5) and consideration of shrinkage and swelling, compressible ground stability and sulphate attack to below ground concrete.

7.2 Construction Considerations

During construction, a watching brief should be undertaken to identify the presence of any unforeseen contamination. If contamination is encountered, all works should cease until the advice of a suitably qualified professional can be sought.

Construction / demolition workers should use appropriate PPE and follow the site-specific contractors risk assessment which should include risks to human health from potential contamination. Due to the historic phases of development and demolition consideration should be given to the potential presence of asbestos within the Made Ground, and the potential for hydrocarbon contamination and vapour to be present from the adjacent former garage and petrol station to the north west.

Good site management practices should be adopted during the construction phase such as covering stockpiles to minimise surface runoff/dust creation.

A foundation works risk assessment may be required to assess the risk to the underlying Secondary Undifferentiated Aquifer if foundations or piling which penetrate the base of the Made Ground are proposed.

Although the site is located in an area where 'Medium to high' risk of encountering unexploded ordnance is present, a detailed UXO desk study was obtained for the site which indicated the site to have a low UXO hazard level. To ensure that the UXO risk is reduced to As Low As Reasonably Practicable (ALARP), it is important to raise the awareness of those involved in excavations through UXO awareness briefings to site staff.

8 References

1. British Geological Survey (BGS) [online]. <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed February 2019.
2. Google maps [online]. Available at <https://www.google.co.uk/maps>. Accessed February 2019.
3. Bomb Sight National Archives [on-line]. Available at: <http://bombsight.org>. Accessed February 2019
4. CIRIA C552 (2001) Contaminated land risk assessment. A guide to good practice.
5. DEFRA and the Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Guidelines for Environmental Risk Assessment and Management, Contaminated Land Report 11 (CLR11).
6. The Construction (Design and Management) Regulations 2015.
7. CIRIA C665 (2007) Assessing risks posed by hazardous ground gases to buildings (revised).

APPENDIX A

Historical Ordnance Survey Maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

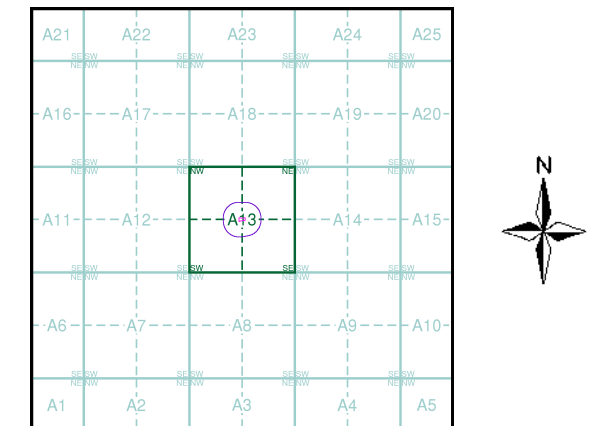
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LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:10,560	1870	3
Middlesex	1:10,560	1873	4
Essex	1:10,560	1873	5
London	1:10,560	1896	6
Essex	1:10,560	1898	7
Kent	1:10,560	1899	8
Essex	1:10,560	1920	9
Essex	1:10,560	1938	10
Ordnance Survey Plan	1:10,000	1940 - 1951	11
Historical Aerial Photography	1:10,560	1949	12
Ordnance Survey Plan	1:10,000	1950 - 1955	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Ordnance Survey Plan	1:10,000	1975	15
Ordnance Survey Plan	1:10,000	1982 - 1984	16
London	1:25,000	1985	17
Ordnance Survey Plan	1:10,000	1990 - 1991	18
Ordnance Survey Plan	1:10,000	1995 - 1996	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2018	22

Historical Map - Slice A



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

Site Details

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Russian Military Mapping Legends

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

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings

Military and Industrial Buildings

Military and Communication Areas

Subway Entrance

Fireproof Building

Prominent Fireproof Building

Non-fireproof Building

Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys

Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale

Hydroelectric Power Station

Radio Station, drawn to scale

Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry

Open-pit Salt Mine

Pit

Oil Deposit or Well

Oil Seepage

Tailings Pile

Fuel Storage Tanks

Natural Gas Tank

Bench Mark

Drill Hole

Burial Mound

Triangulation Point on Burial Mound

Single-track Railroad

Double-track Railroad

Railroad and Station Building

Coniferous Forest

Deciduous Forest

Mixed Forest

Lawns

Citrus Orchard

Wet Ground

Scattered Vegetation

243.8 Values for prominent elevations
186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
0.2 Velocity of the current, width of river bed, depth of river
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

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

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

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings

Military and Industrial Buildings

Military and Communication Areas

Subway Entrance

Partly Demolished Buildings

Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant

Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building

Prominent Industrial Building

Individual Dwelling, Fireproof

Ruins of an Individual Dwelling

Factory or Mill Chimney

Factory or Mill with Chimney

Factory or Mill without Chimney

Mine or Open Pit Mine

Operating Shaft or Mine

Non-Operating Shaft or Mine

Salt Mine

Tailings Pile

Pit

Stone Quarry

Gas Pump or Service Station

Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick

Small Hydroelectric Power Station

Power Station

Transformer Station

Cemetery

Burial Mound (height in metres)

Triangulation Point on Burial Mound

Triangulation Point

Bench Mark

Bench Mark (monumented)

Telegraph Office

Telephone Station

Radio Station

Radio Tower

Airfield or Seaplane Base

Landing Strip

Cut, Fill, Km Post, Plantings

Telegraph/Telephone Lines

Main Highway

Highway under Construction

Improved Dirt Road (former truck road)

Small Bridge, Pipe (Culvert), Tunnel

Double-track Railroad with First Class Station

Railroad Under Construction

Shore Embankment

River or Ditch with Embankment

Direction and velocity of current

Water Gauge

Water Level Mark

Well

Water Reservoir or Rain Water Pit

Spring

Isobath with value

Heavy (Index) Contour Line

Contour Line and Value

Half Contour Line

Spot Elevation Value

Coniferous

Deciduous

Mixed

Scrub

Key to Numbers on Mapping

TQ48_London

No.	Description
49	Depot (Fire Service)

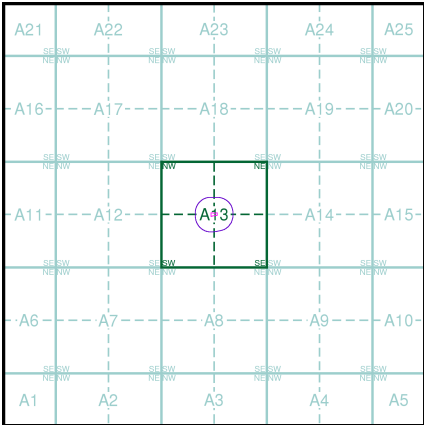
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:10,560	1870	3
Middlesex	1:10,560	1873	4
Essex	1:10,560	1873	5
London	1:10,560	1896	6
Essex	1:10,560	1898	7
Kent	1:10,560	1899	8
Essex	1:10,560	1920	9
Essex	1:10,560	1938	10
Ordnance Survey Plan	1:10,000	1940 - 1951	11
Historical Aerial Photography	1:10,560	1949	12
Ordnance Survey Plan	1:10,000	1950 - 1955	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Ordnance Survey Plan	1:10,000	1975	15
Ordnance Survey Plan	1:10,000	1982 - 1984	16
London	1:25,000	1985	17
Ordnance Survey Plan	1:10,000	1990 - 1991	18
Ordnance Survey Plan	1:10,000	1995 - 1996	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2018	22

Russian Map - Slice A



Order Details

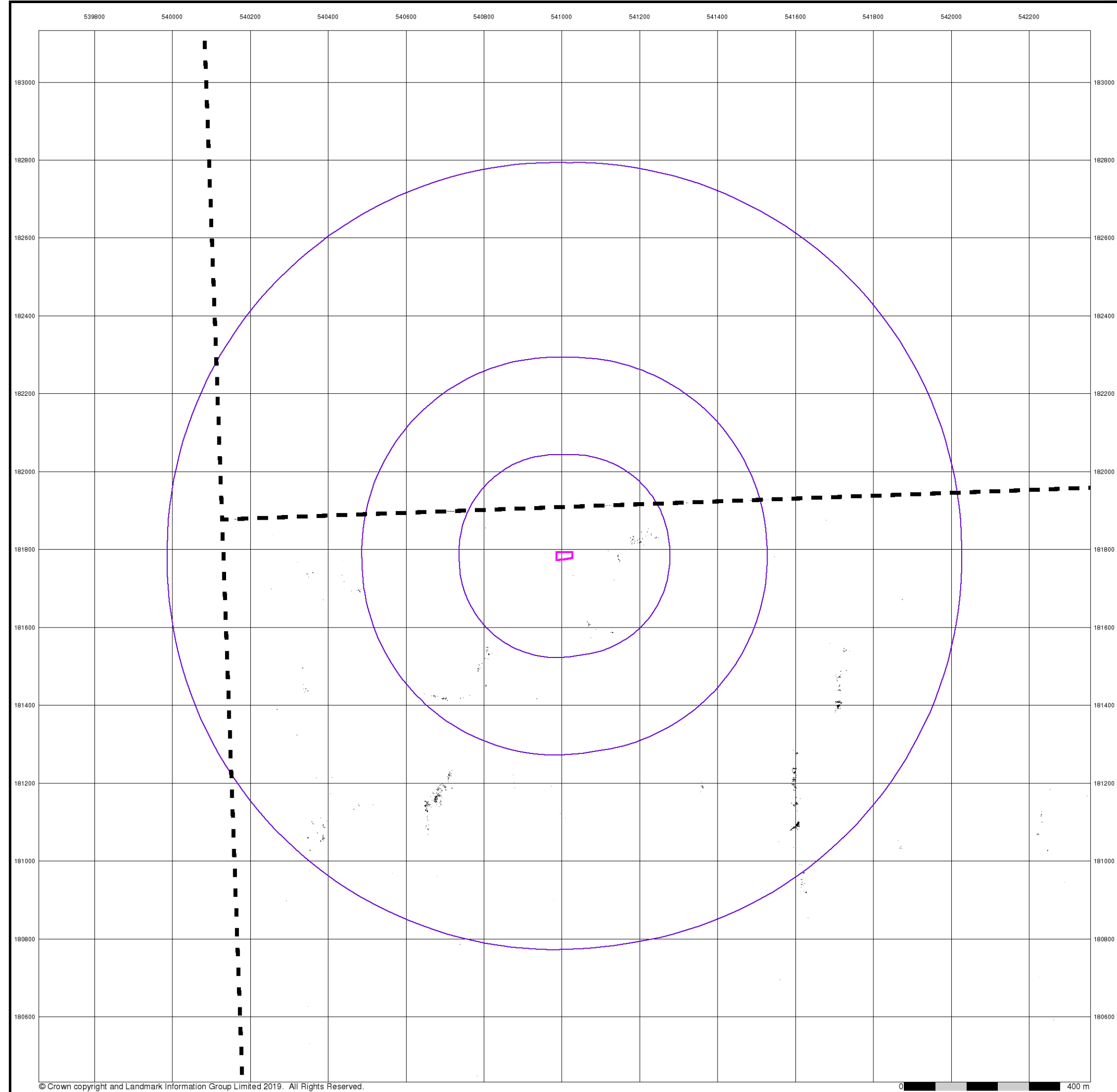
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Customer Ref: 14020774
National Grid Reference: 541010, 181780
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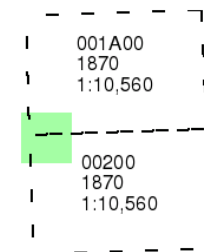
Kent

Published 1870

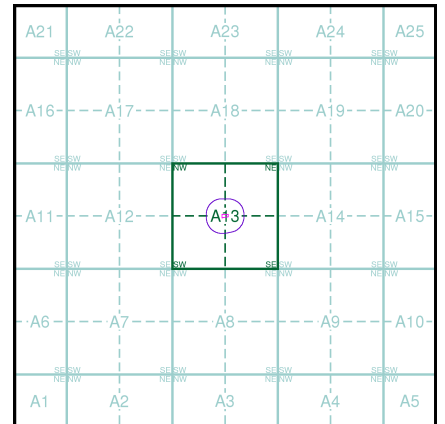
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A

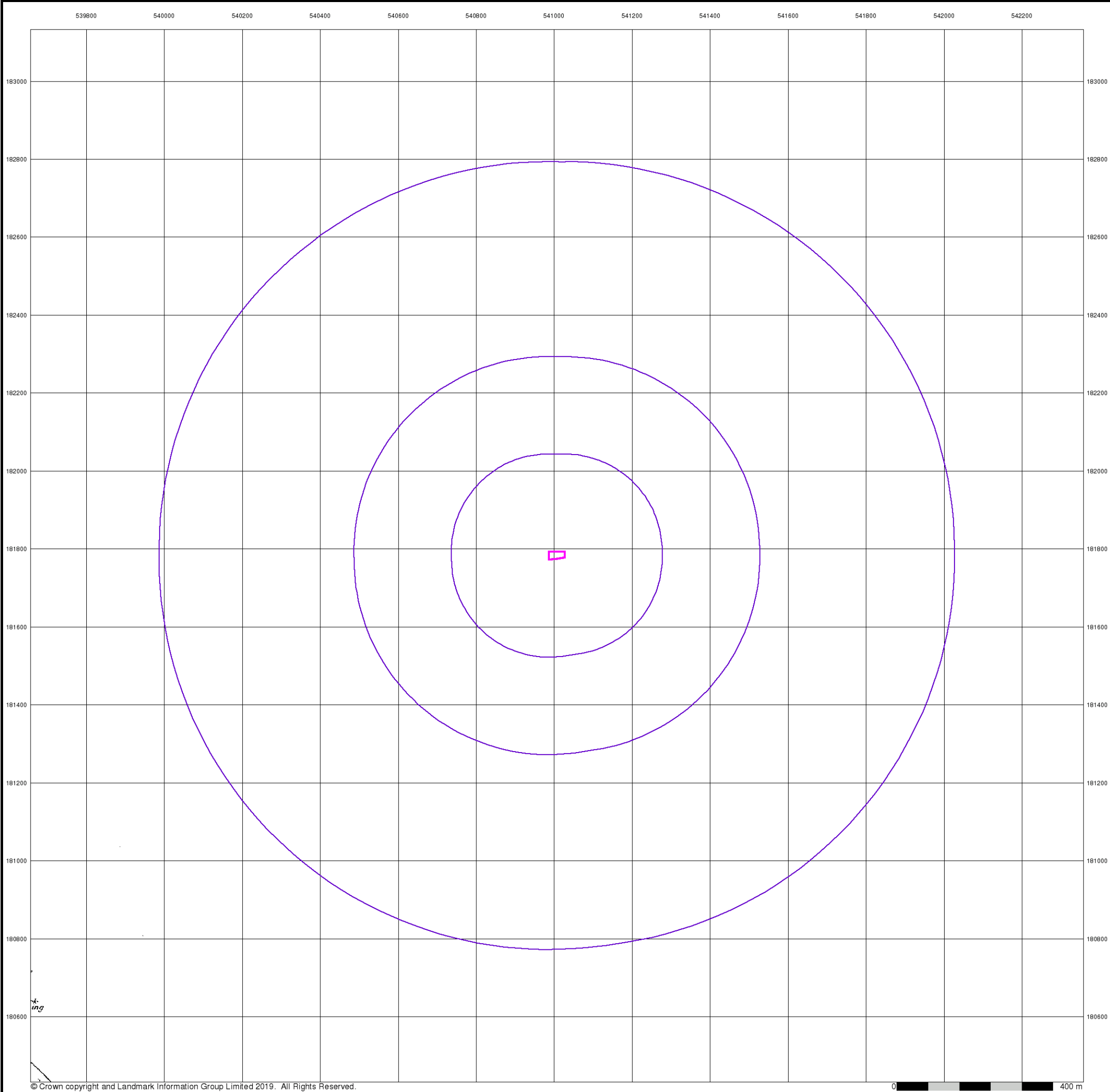


Order Details

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Customer Ref: 14020774
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Site Area (Ha): 0.08
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Site Details

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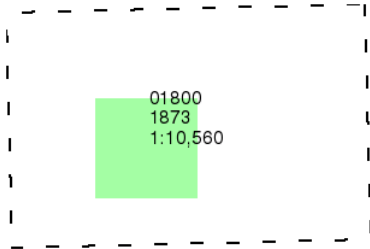
Middlesex

Published 1873

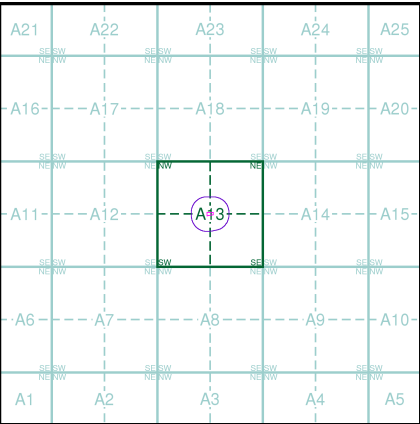
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:191718974_1_1

Customer Ref:14020774

National Grid Reference:541010, 181780

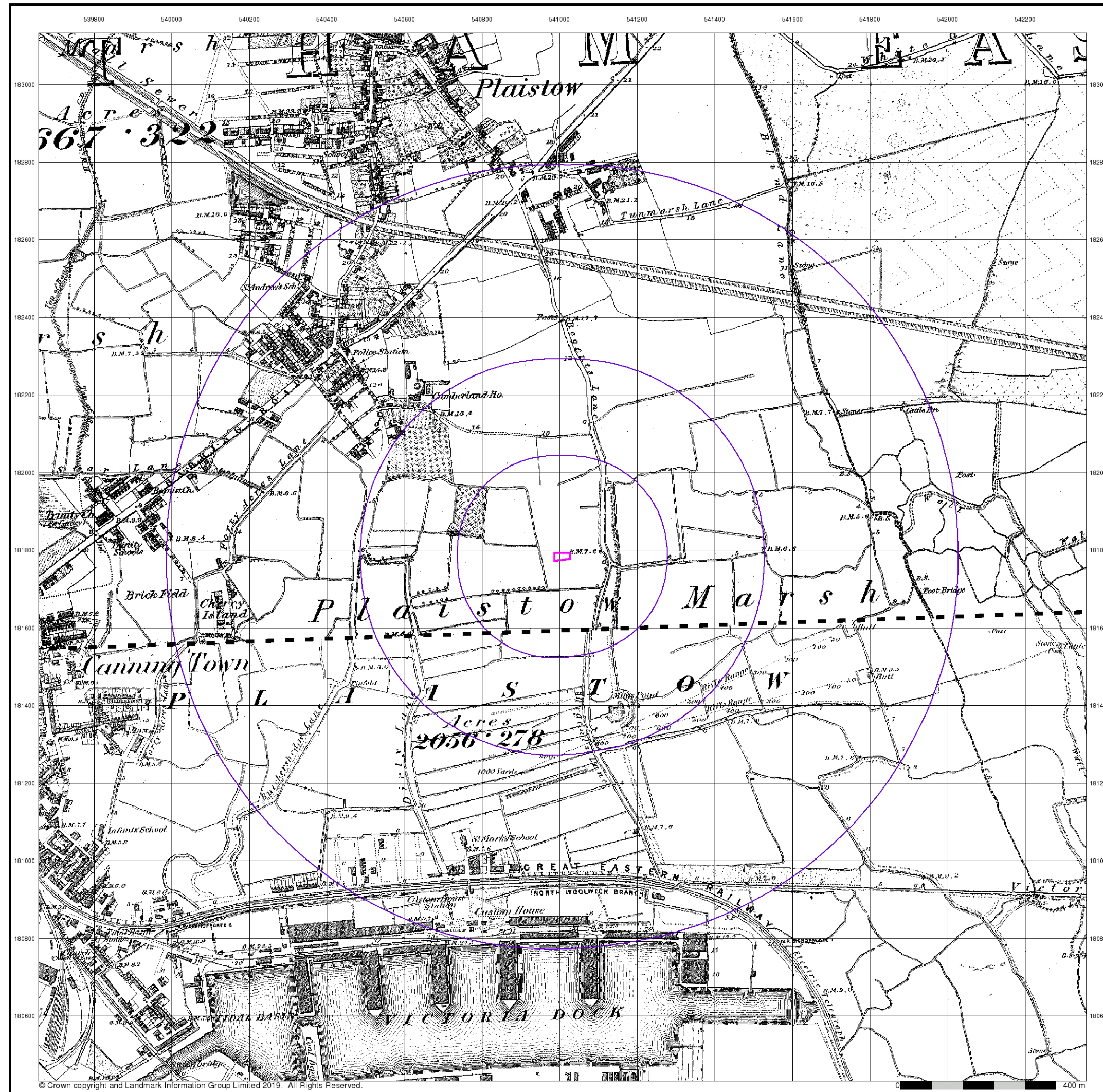
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Search Buffer (m):1000

Site Details

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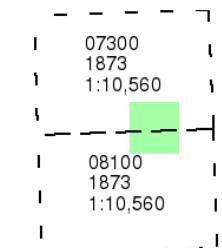
Essex

Published 1873

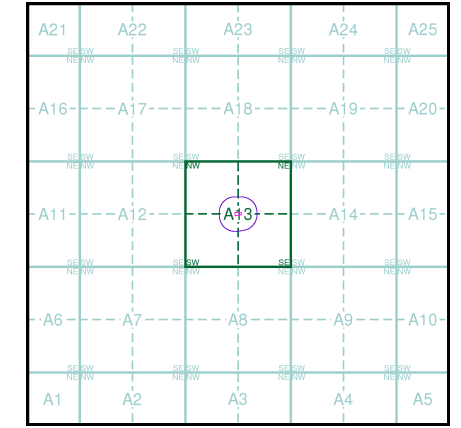
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

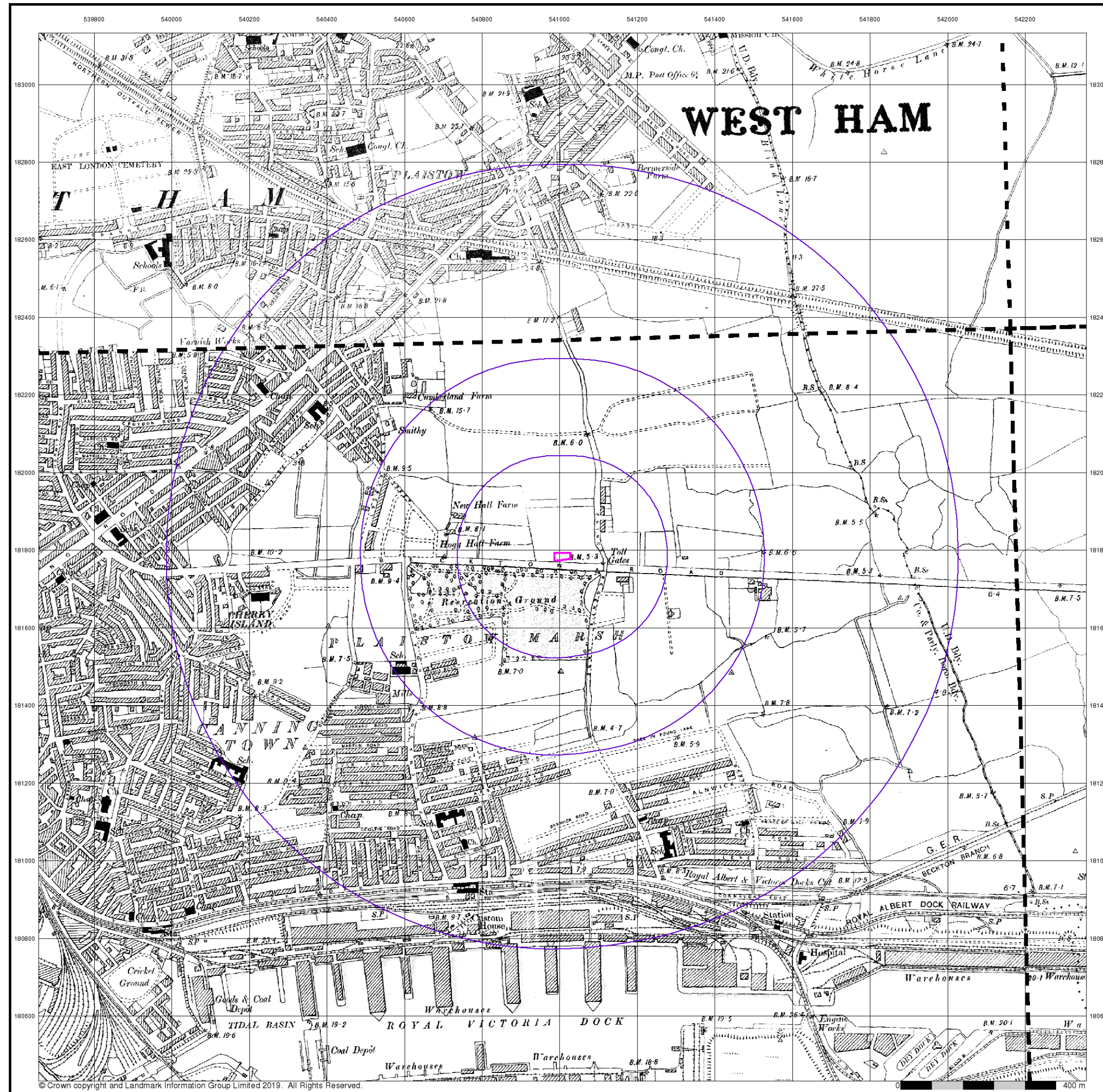
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National Grid Reference: 541010, 181780
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Site Area (Ha): 0.08
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London

Published 1896

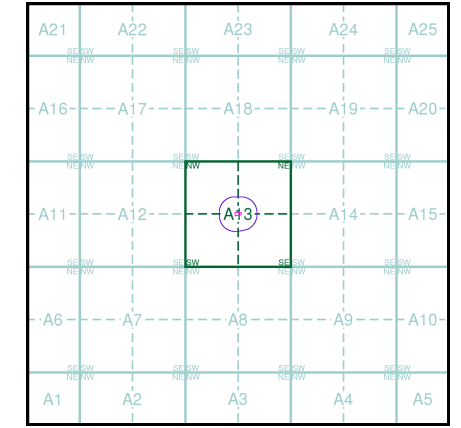
Source map scale - 1:10,560

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Map Name(s) and Date(s)

008NW 1896 1:10,560	008NE 1896 1:10,560
008SW 1896 1:10,560	008SE 1896 1:10,560

Historical Map - Slice A



Order Details

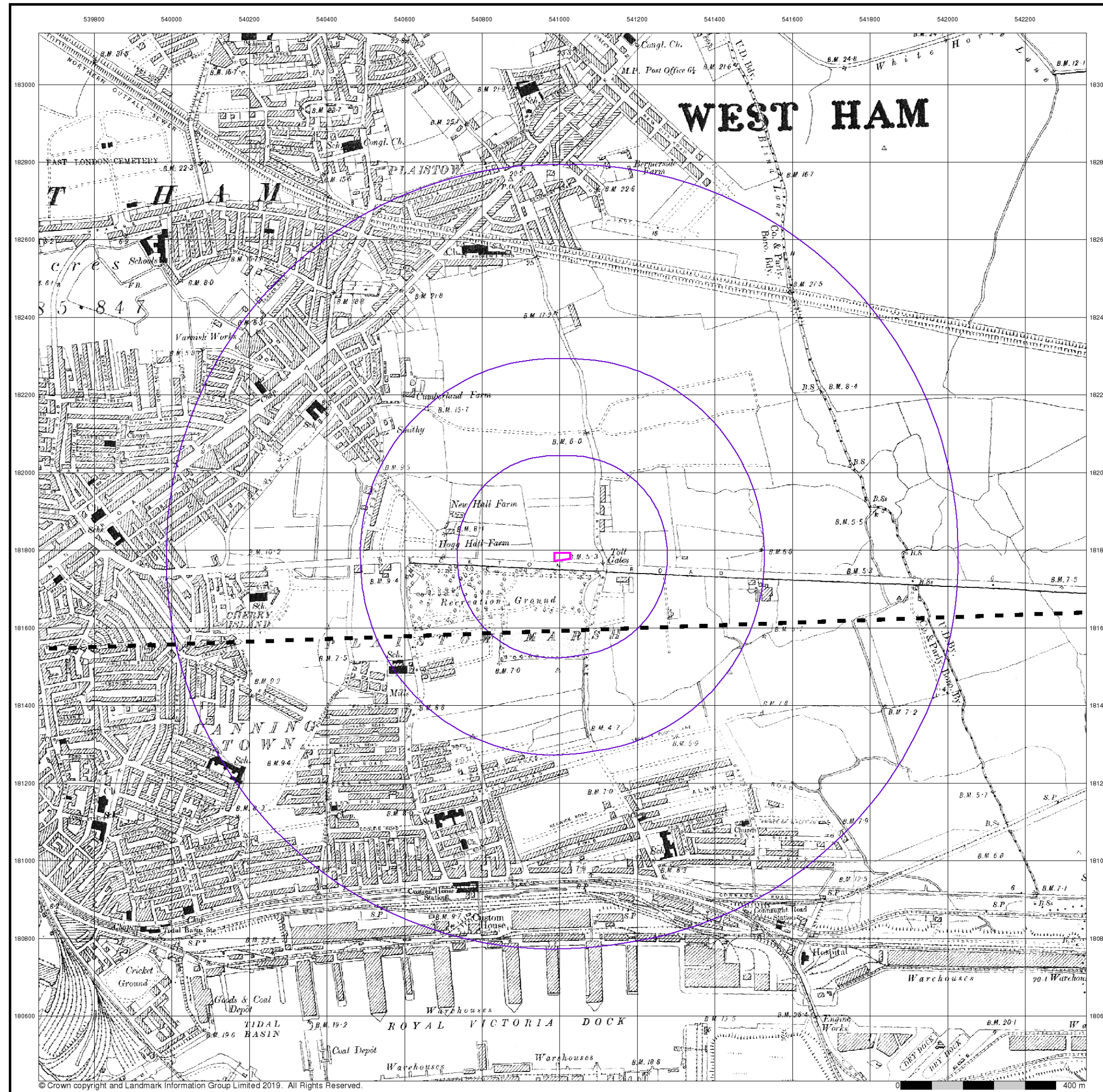
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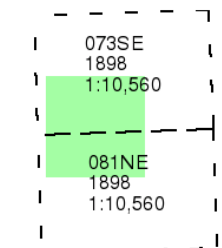
Essex

Published 1898

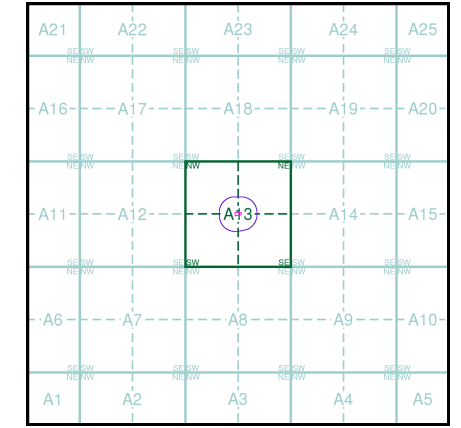
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

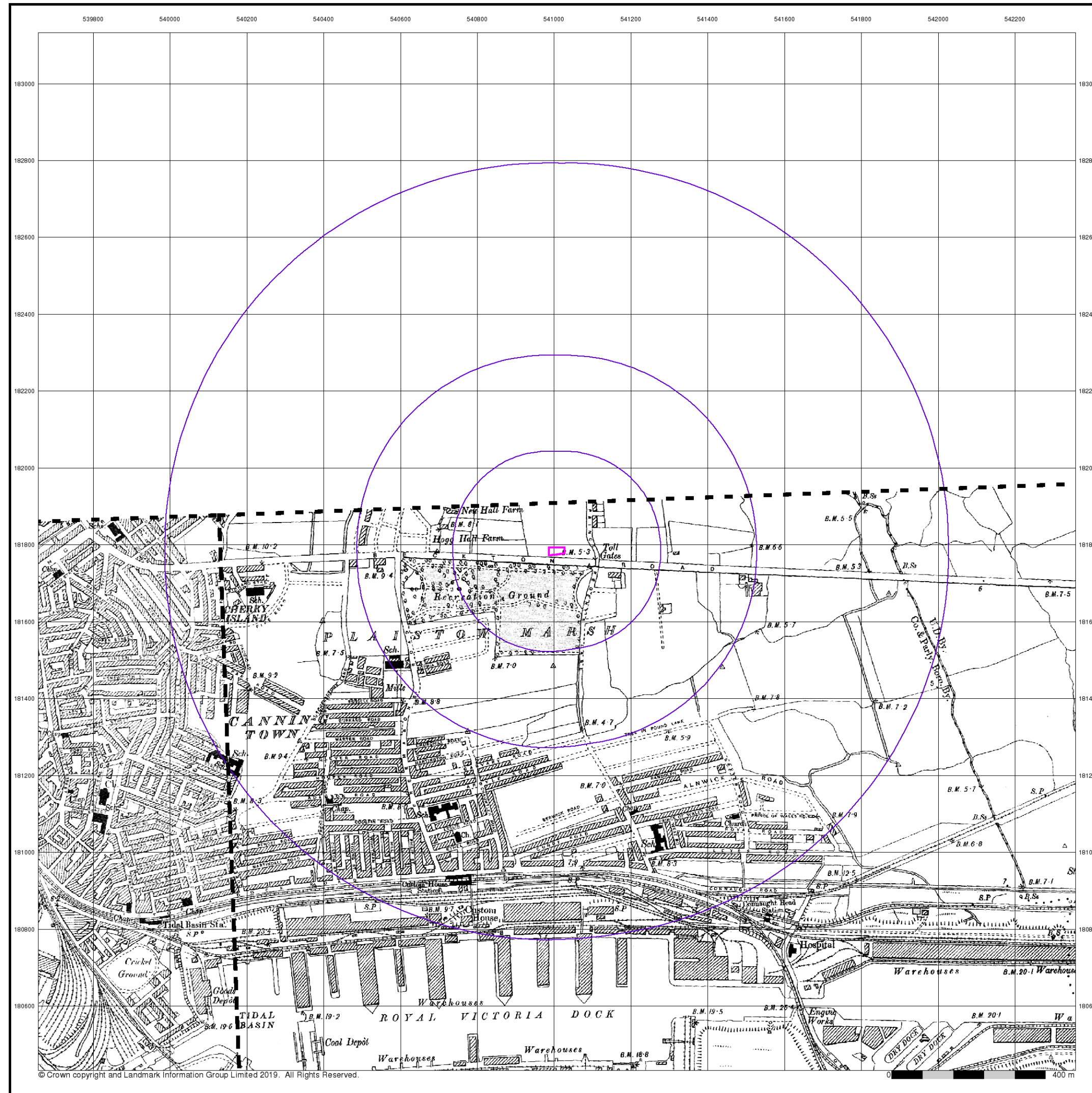
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Slice: A
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Search Buffer (m): 1000

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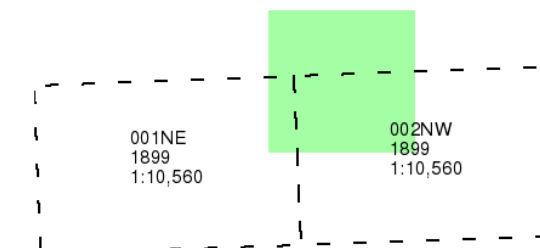
Kent

Published 1899

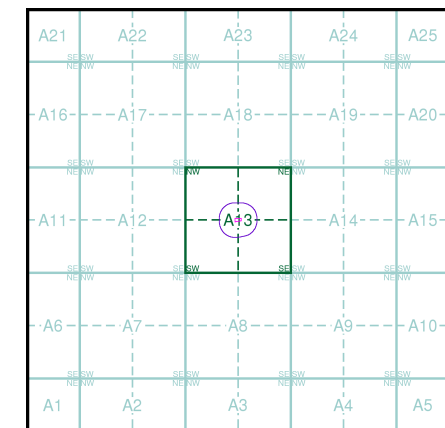
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

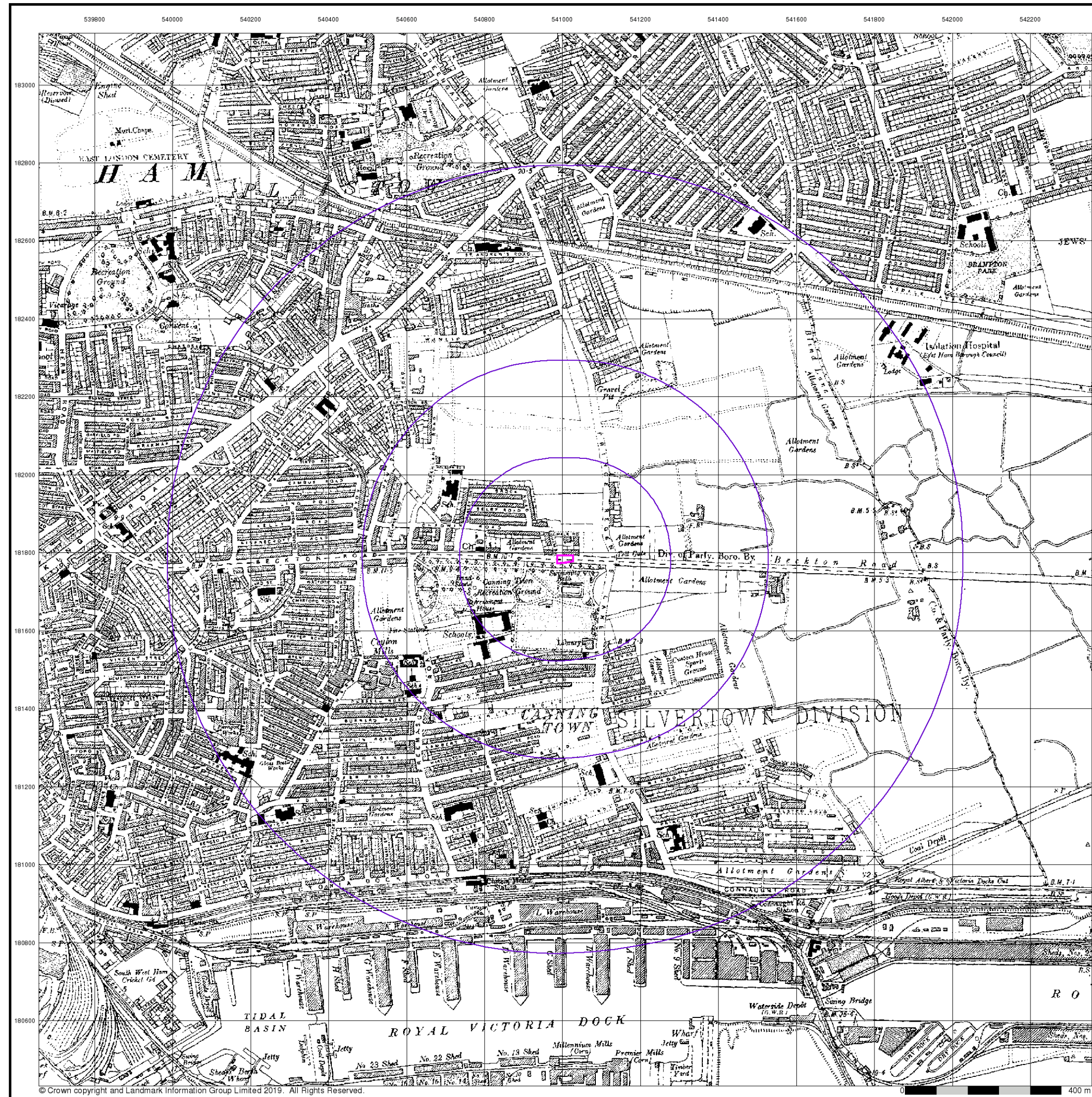
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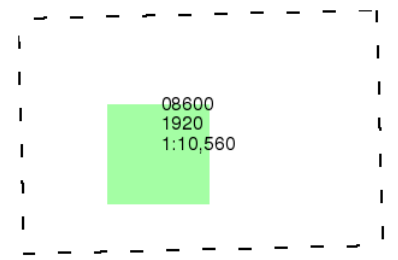
Essex

Published 1920

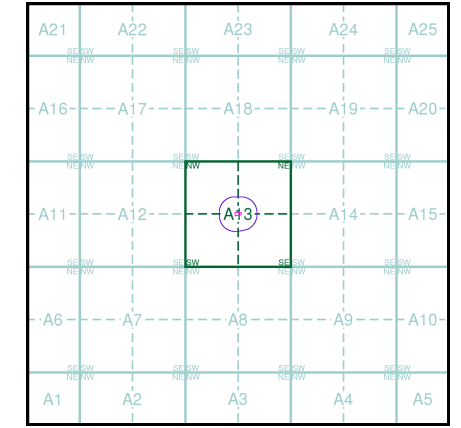
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

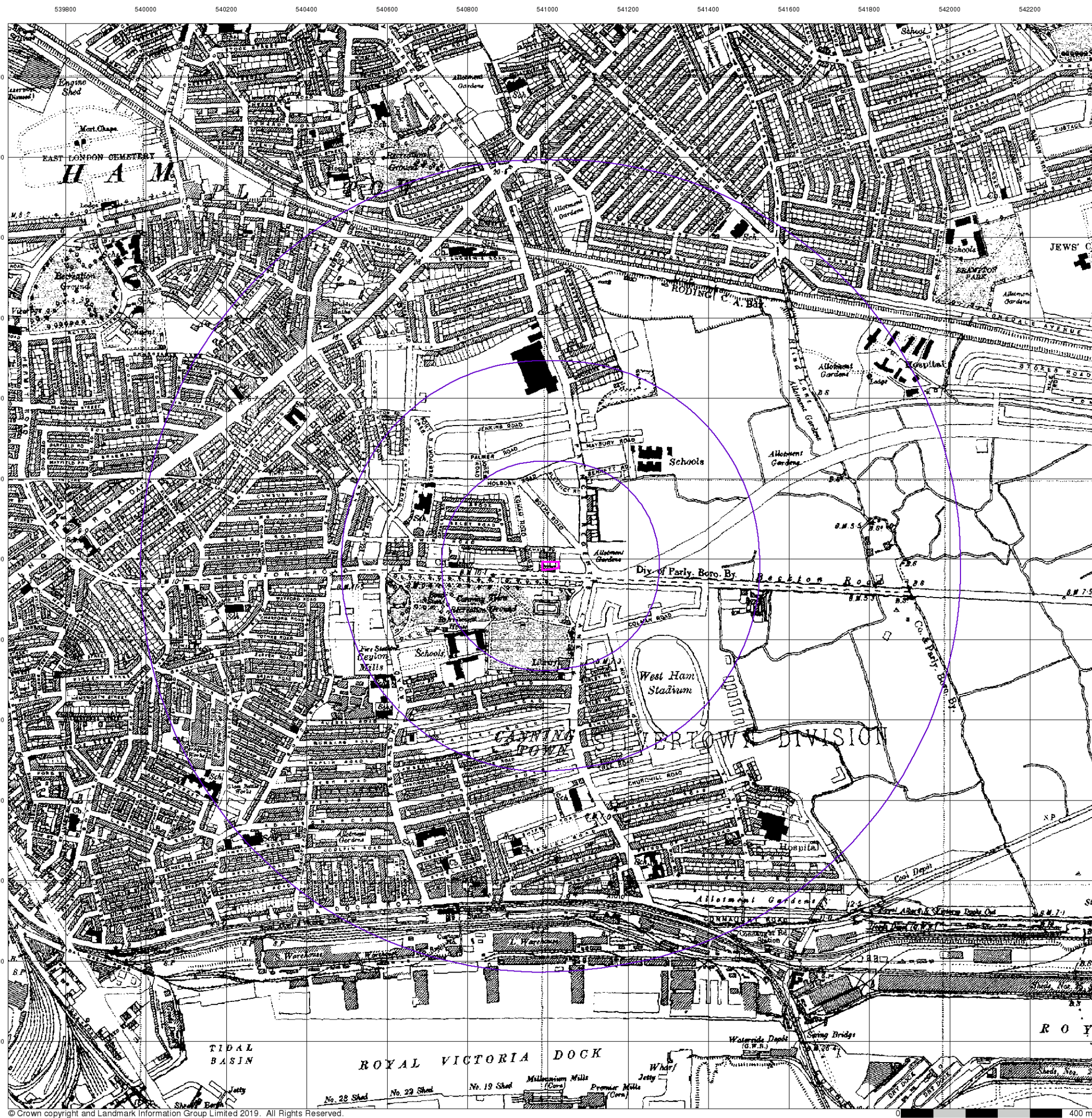
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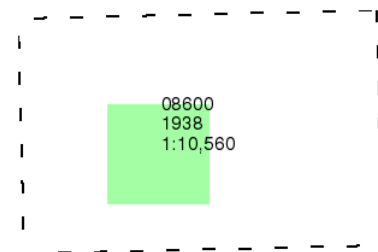
Essex

Published 1938

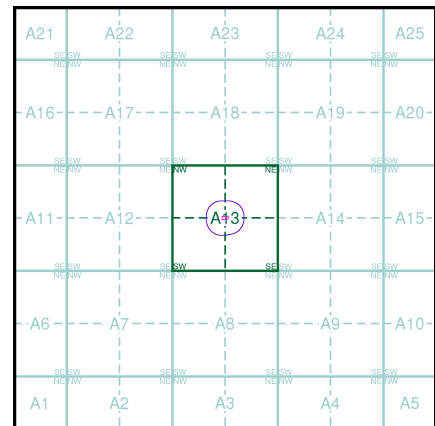
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

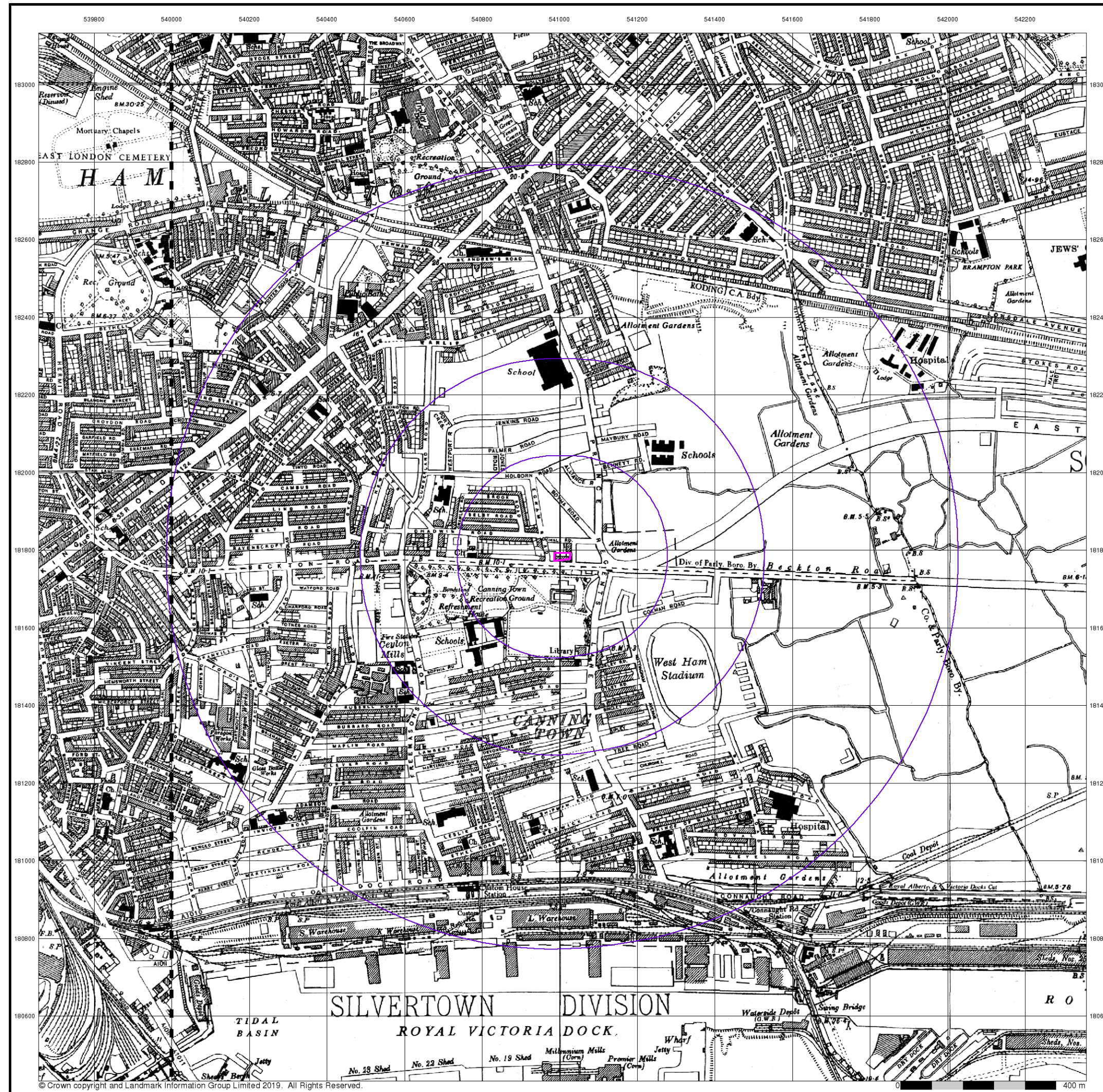
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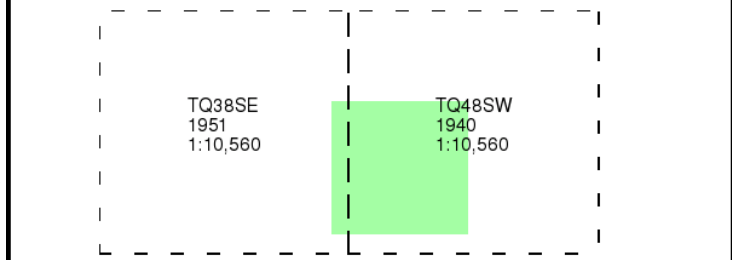
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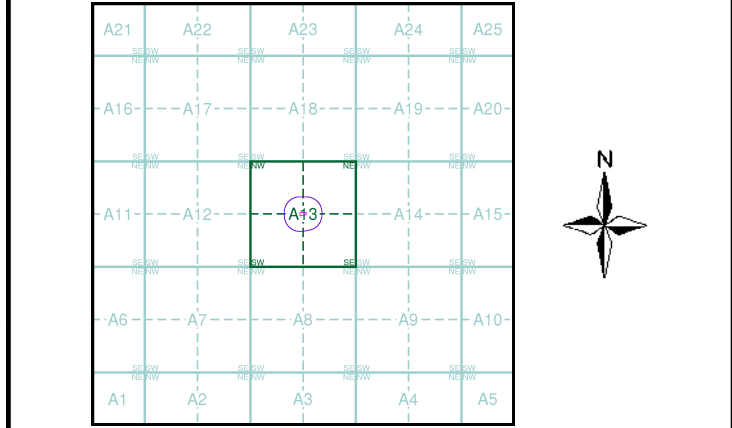
Ordnance Survey Plan Published 1940 - 1951 Source map scale - 1:10,000

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

Map Name(s) and Date(s)



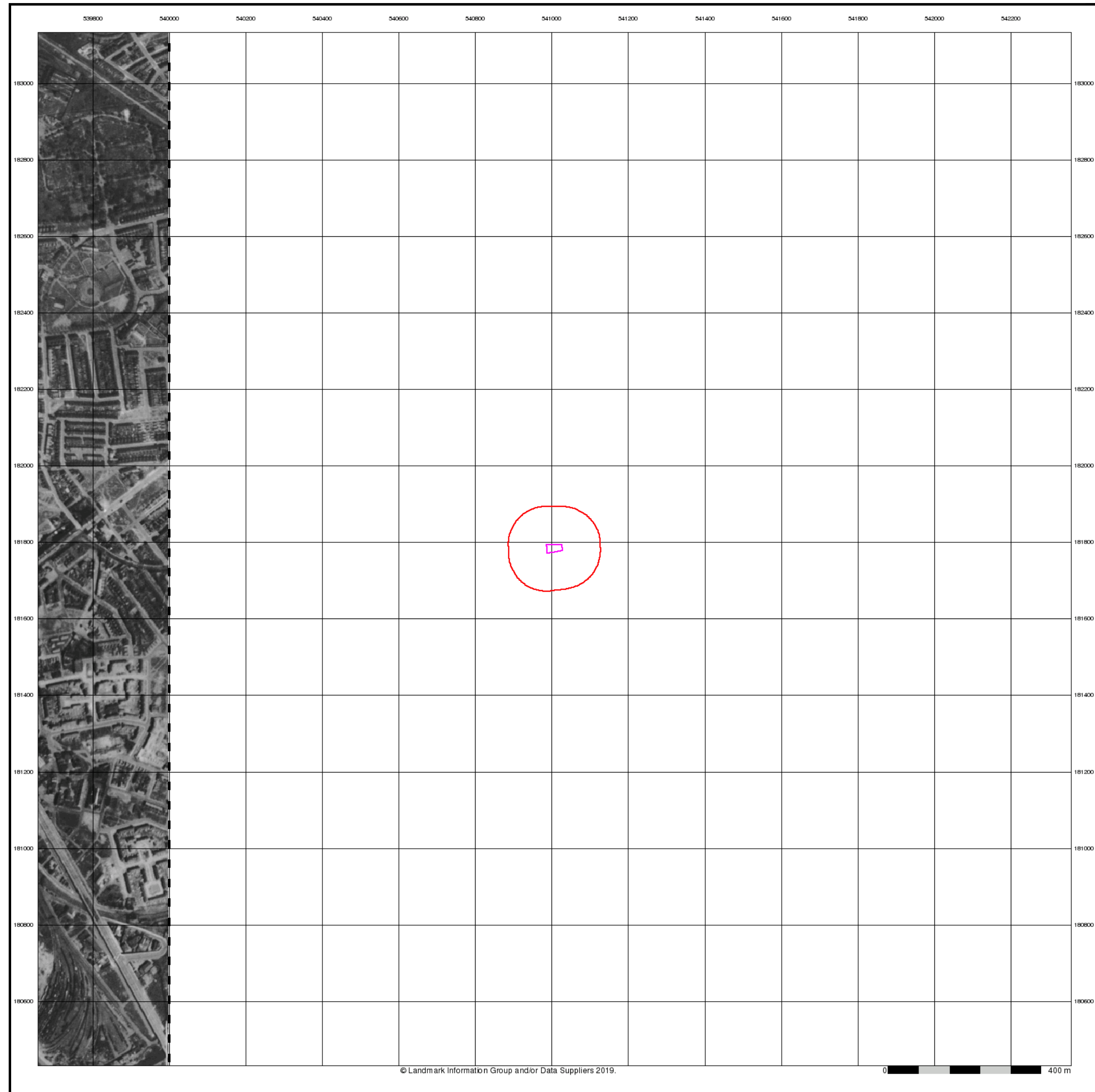
Historical Map - Slice A



Order Details
Order Number: 191718974_1_1
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Historical Aerial Photography

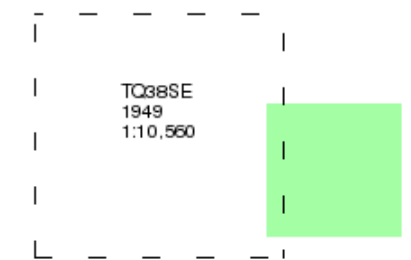
Published 1949

Source map scale - 1:10,560

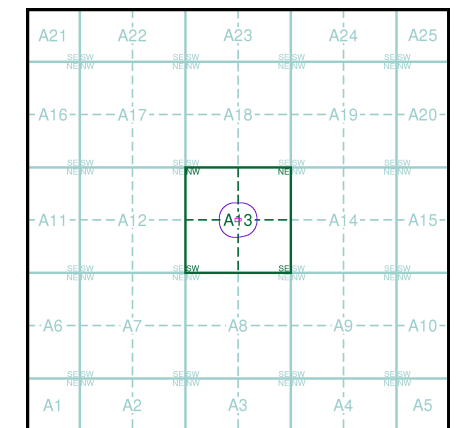
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 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.

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Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



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HSILIRB

Order Details

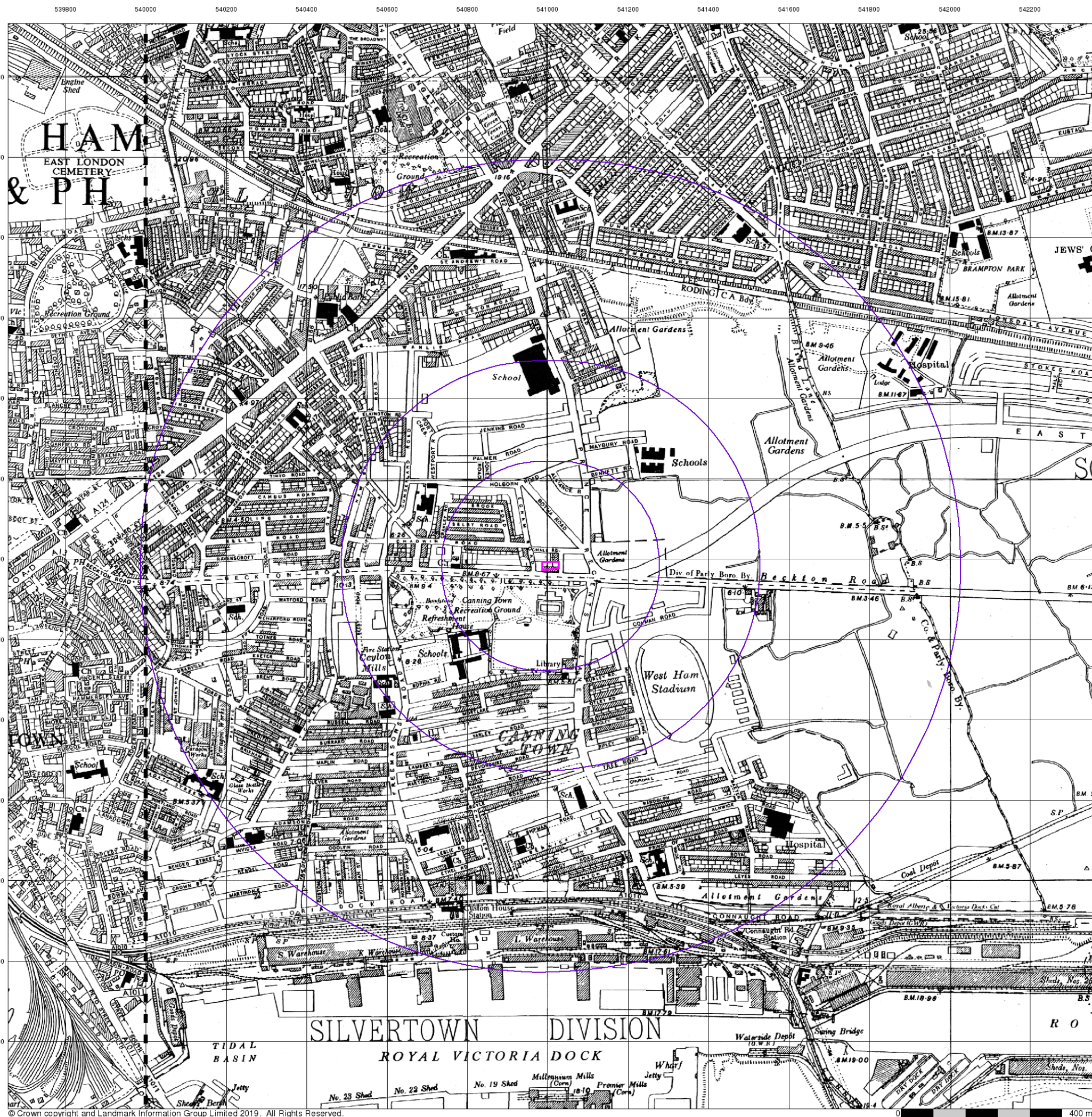
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National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

Site Details

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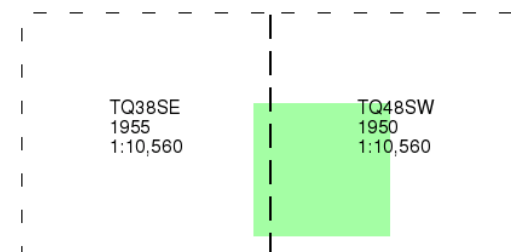
Ordnance Survey Plan

Published 1950 - 1955

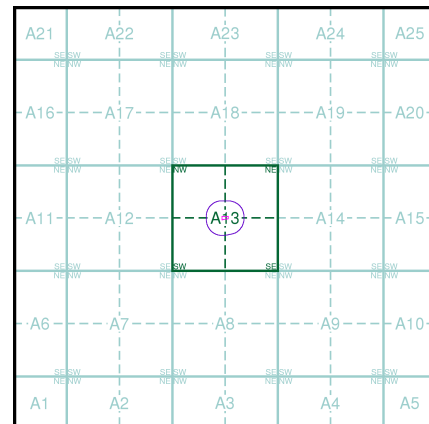
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

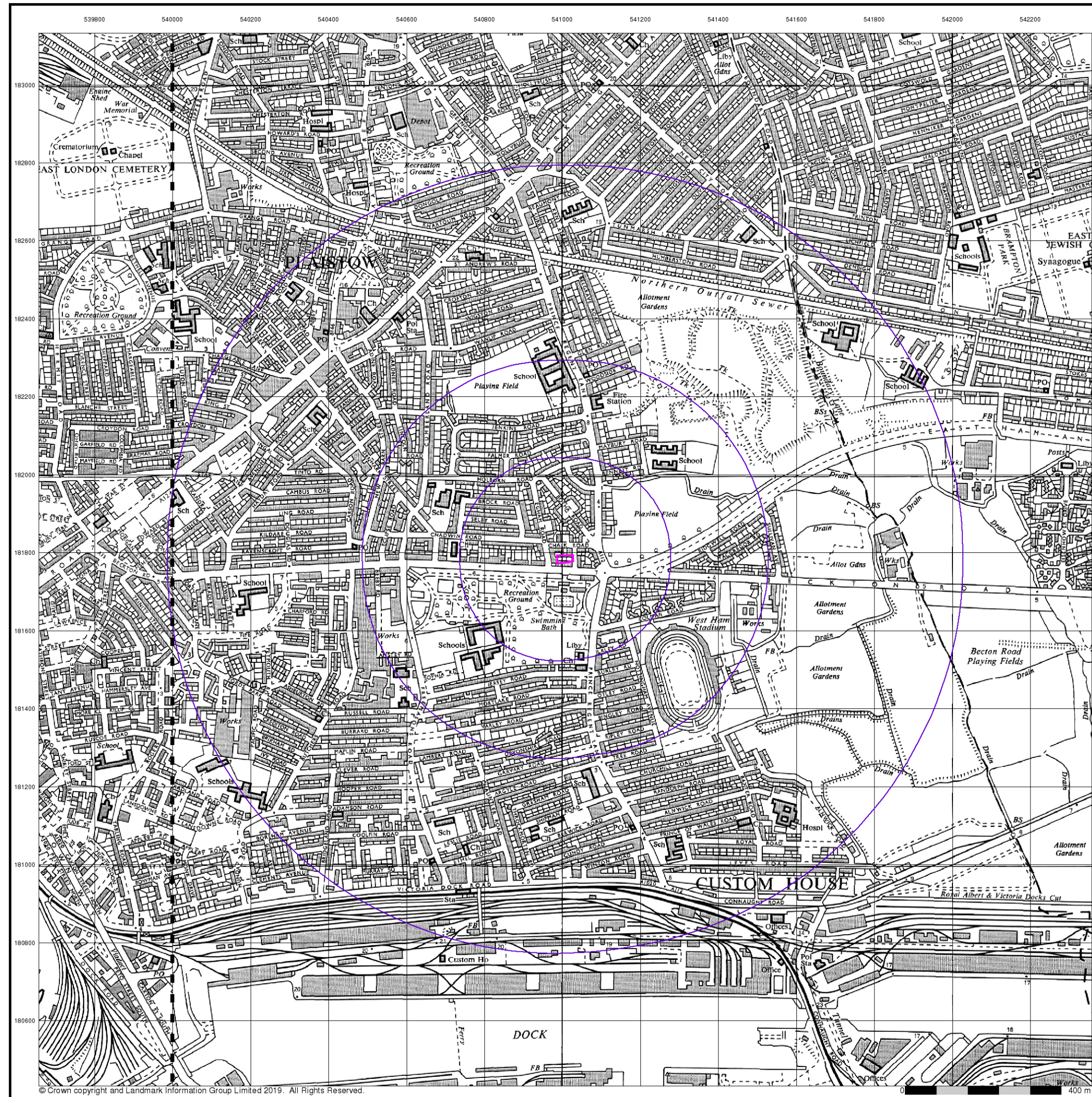
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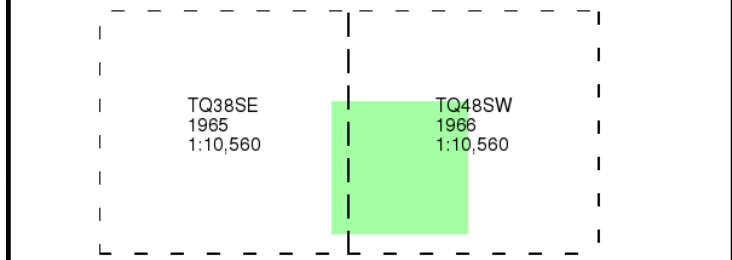
Ordnance Survey Plan

Published 1965 - 1966

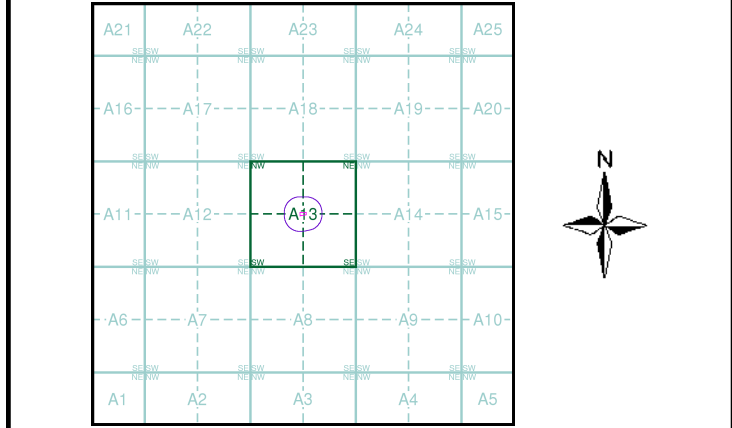
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



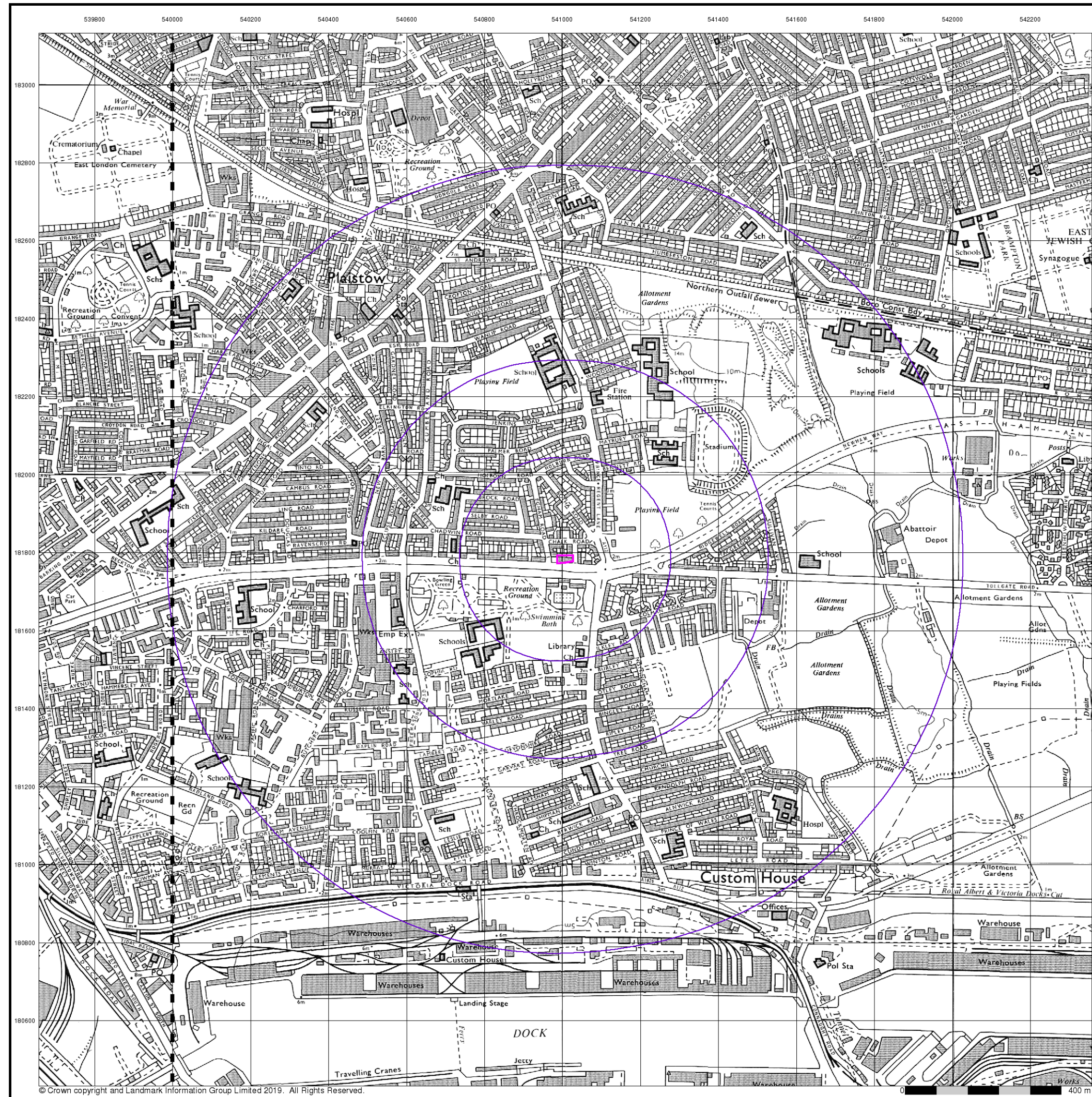
Historical Map - Slice A



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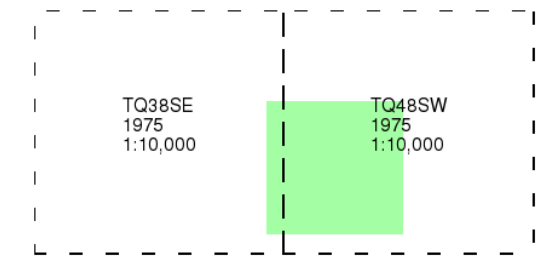
Ordnance Survey Plan

Published 1975

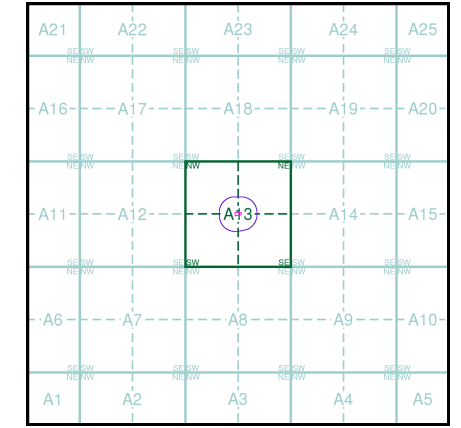
Source map scale - 1:10,000

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

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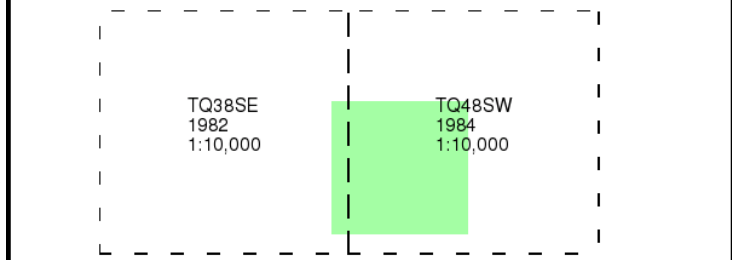
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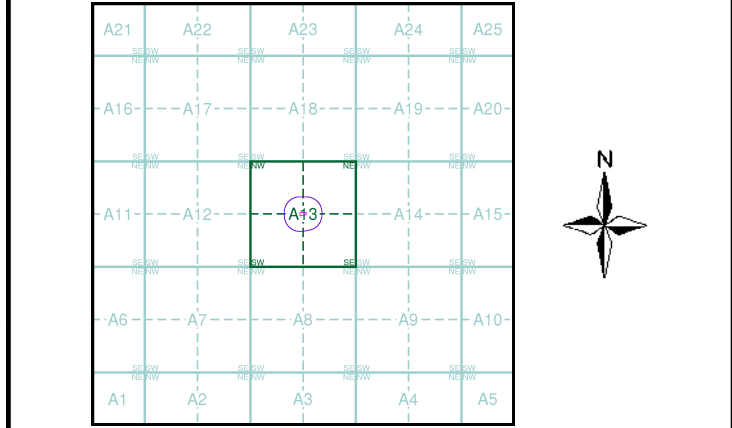
Ordnance Survey Plan Published 1982 - 1984 Source map scale - 1:10,000

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

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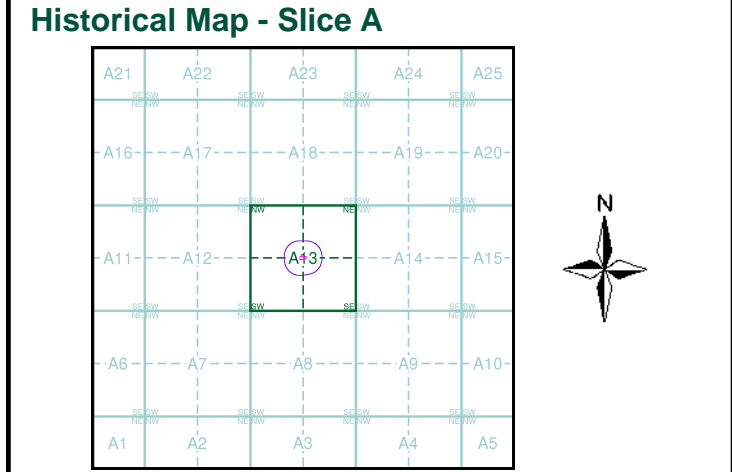
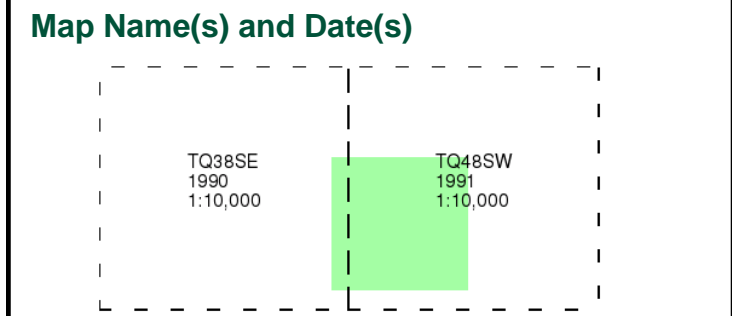
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Ordnance Survey Plan

Published 1990 - 1991

Source map scale - 1:10,000

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



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Customer Ref:	14020774
National Grid Reference:	541010, 181780
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Site Area (Ha):	0.08
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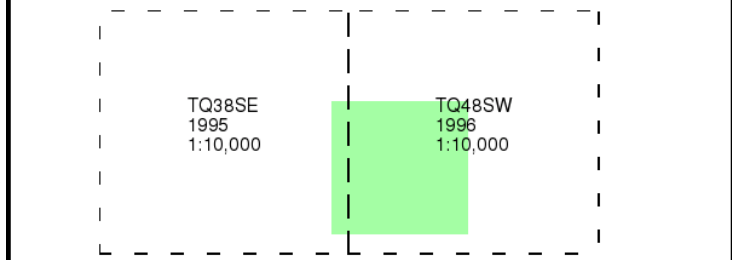
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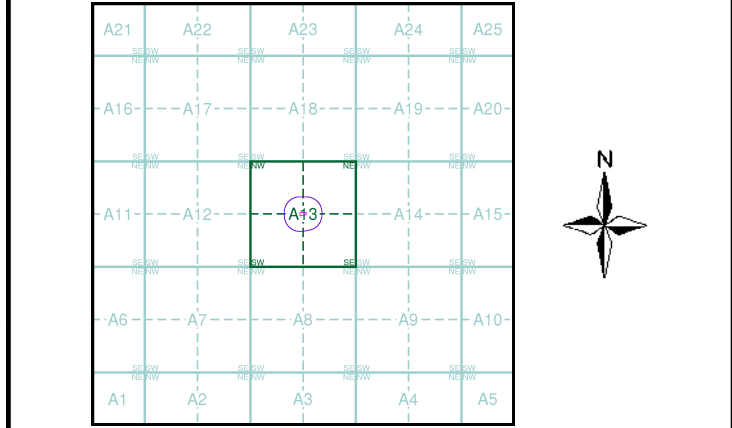
Ordnance Survey Plan Published 1995 - 1996 Source map scale - 1:10,000

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

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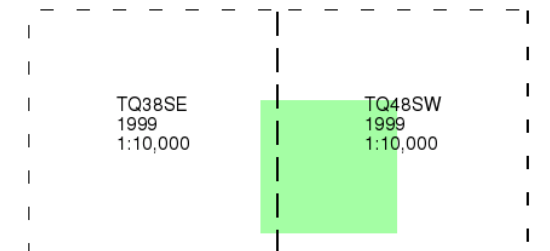
10k Raster Mapping

Published 1999

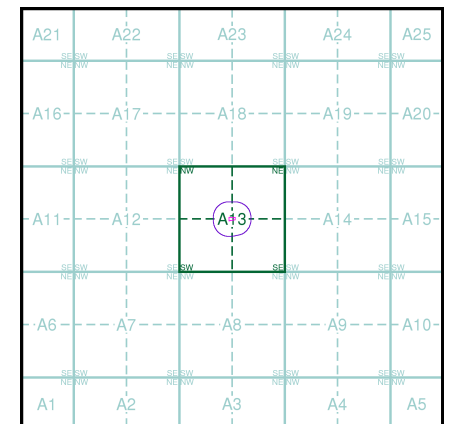
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 191718974_1_1
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National Grid Reference: 541010, 181780
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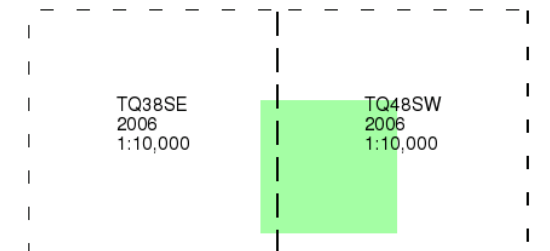
10k Raster Mapping

Published 2006

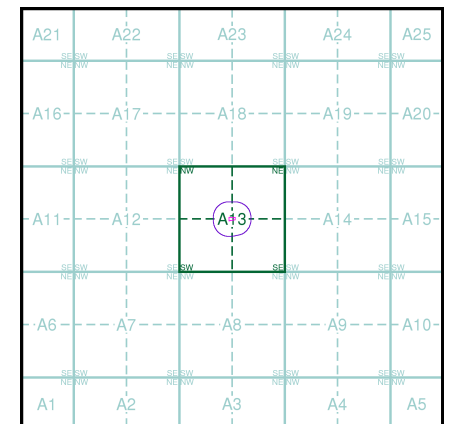
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Slice: A
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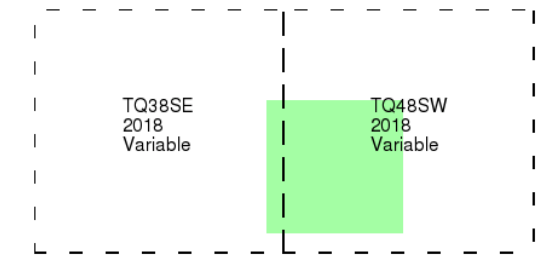
VectorMap Local

Published 2018

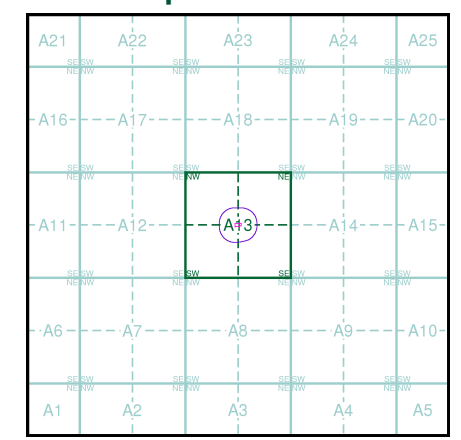
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Historical Mapping Legends

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



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



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



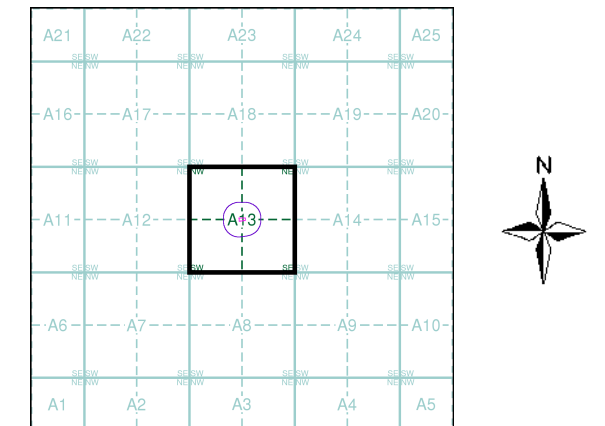
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1864	2
London	1:2,500	1869	3
London	1:2,500	1896	4
Essex	1:2,500	1919	5
Historical Aerial Photography	1:1,250	1946	6
Ordnance Survey Plan	1:2,500	1952 - 1960	7
Ordnance Survey Plan	1:1,250	1952 - 1959	8
Ordnance Survey Plan	1:1,250	1955 - 1981	9
Ordnance Survey Plan	1:2,500	1960	10
Ordnance Survey Plan	1:1,250	1970 - 1976	11
Supply of Unpublished Survey Information	1:1,250	1973 - 1975	12
Supply of Unpublished Survey Information	1:1,250	1977	13
Ordnance Survey Plan	1:1,250	1979	14
Large-Scale National Grid Data	1:1,250	1991	15
Large-Scale National Grid Data	1:1,250	1992 - 1994	16
Large-Scale National Grid Data	1:1,250	1993	17
Large-Scale National Grid Data	1:1,250	1994	18
Large-Scale National Grid Data	1:1,250	1996	19
Historical Aerial Photography	1:2,500	1999	20

Historical Map - Segment A13



Order Details

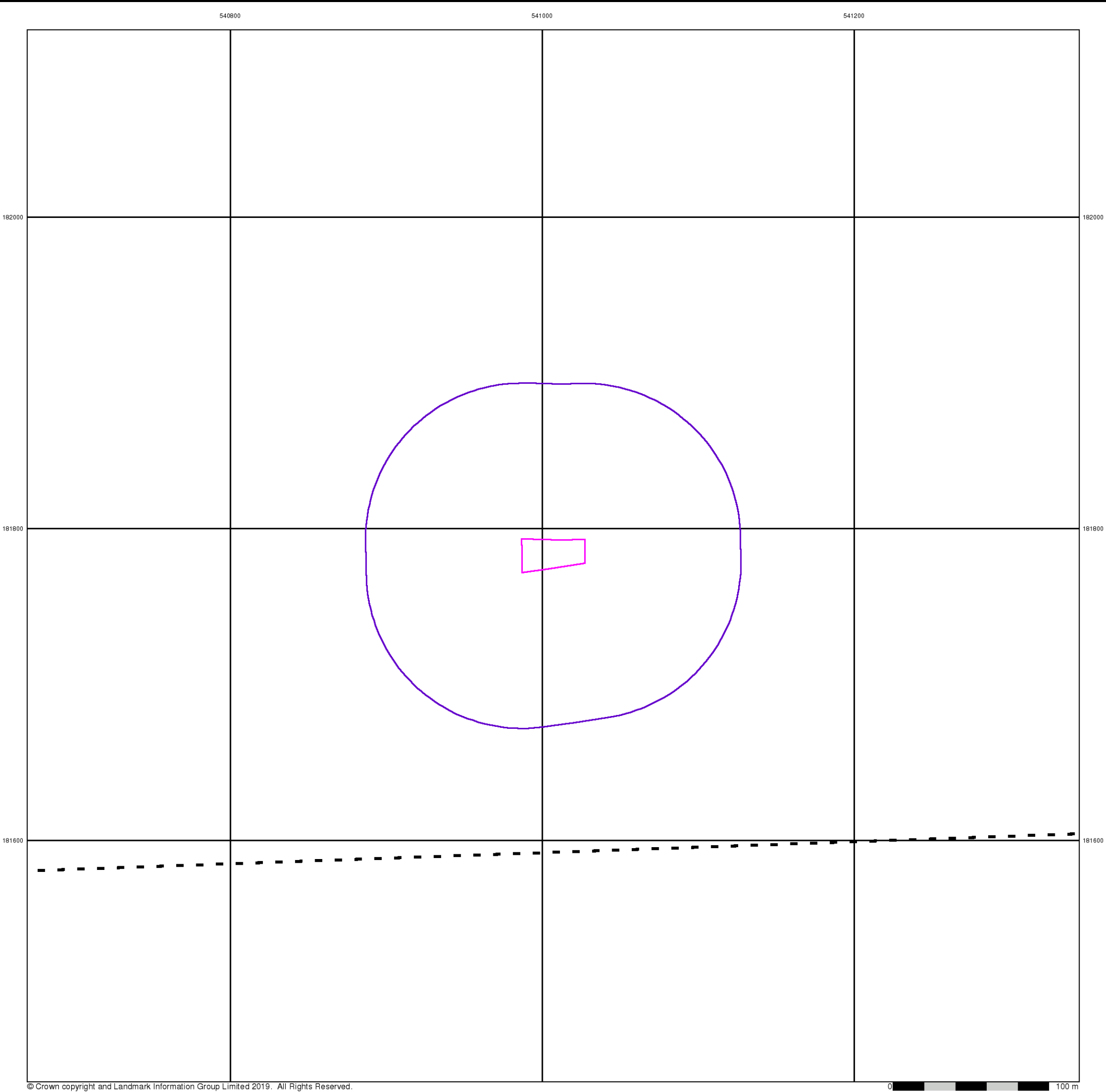
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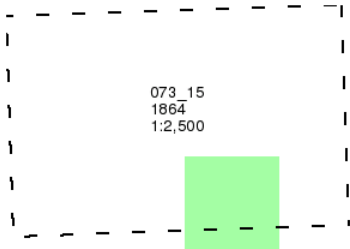


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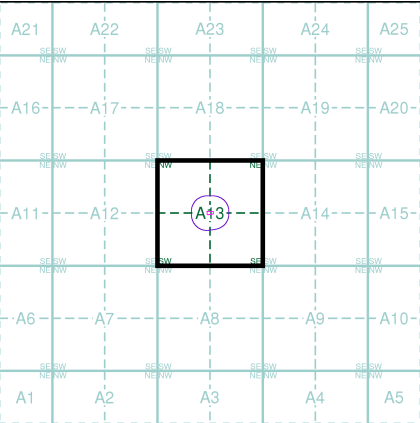
Essex
Published 1864
Source map scale - 1:2,500

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: 191718974_1_1
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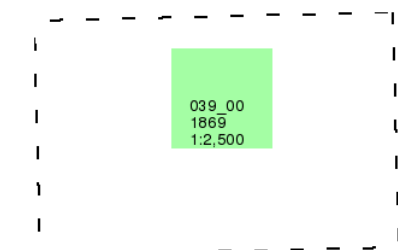
London

Published 1869

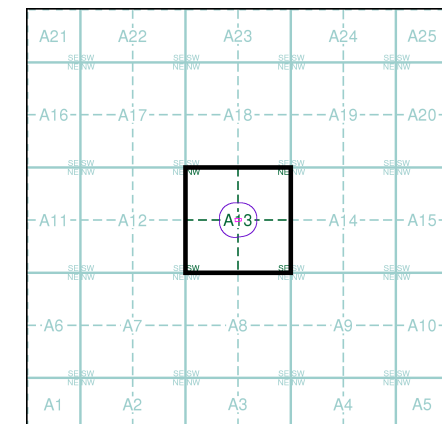
Source map scale - 1:2,500

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Historical Map - Segment A13

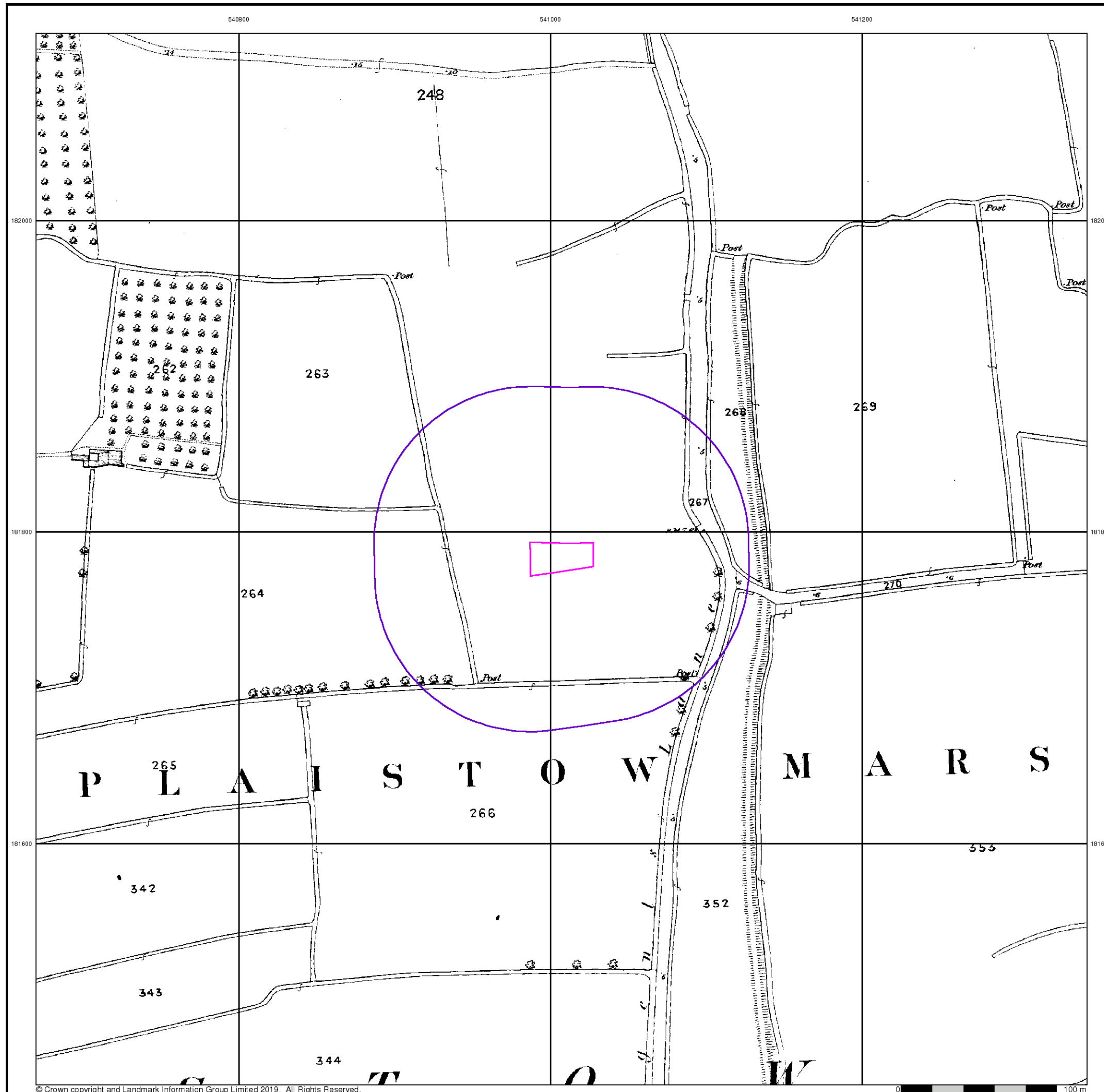


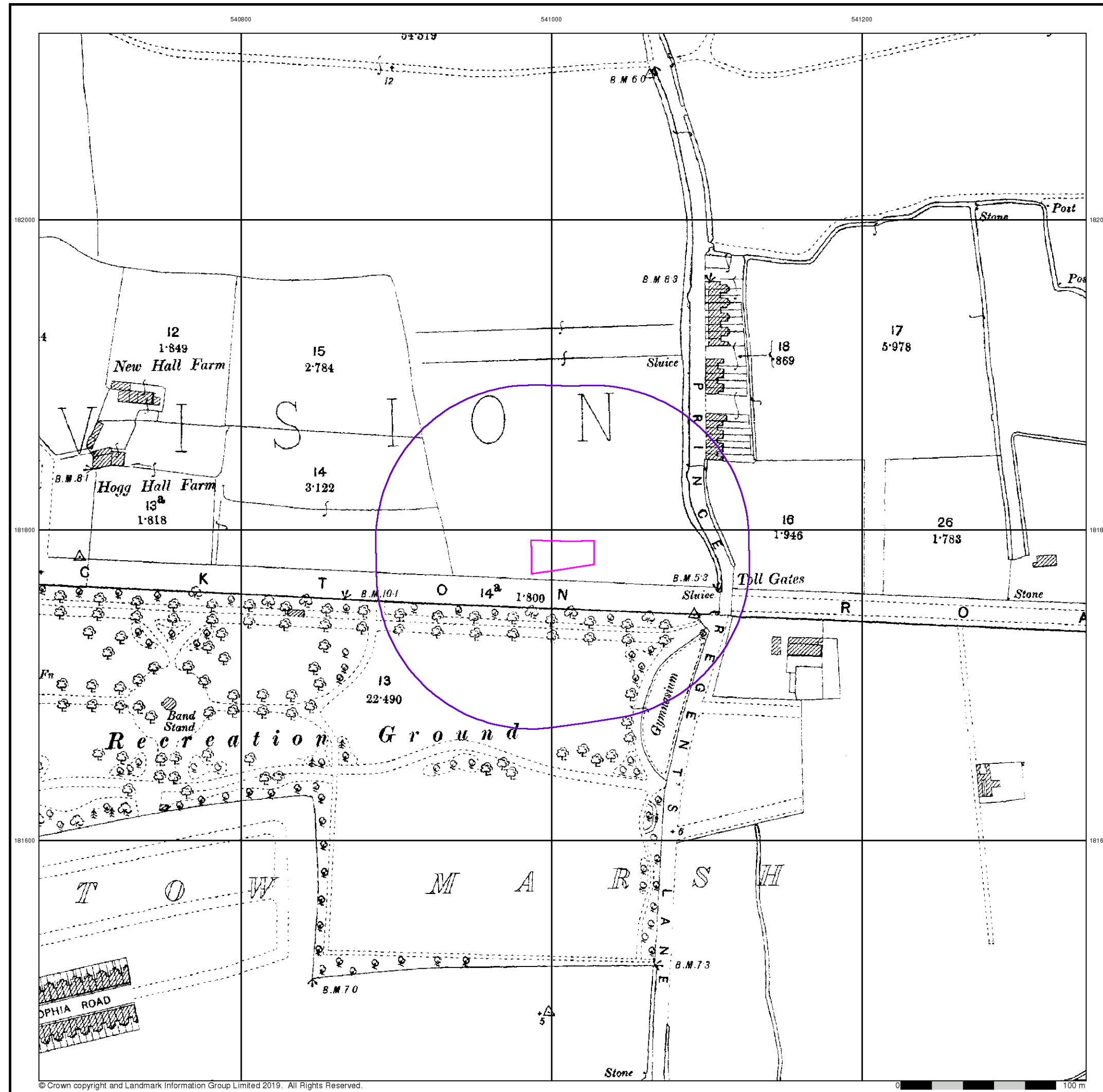
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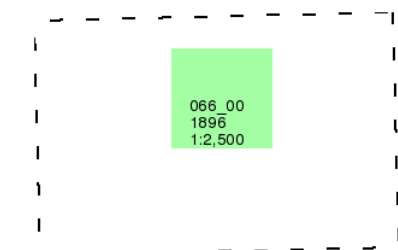
London

Published 1896

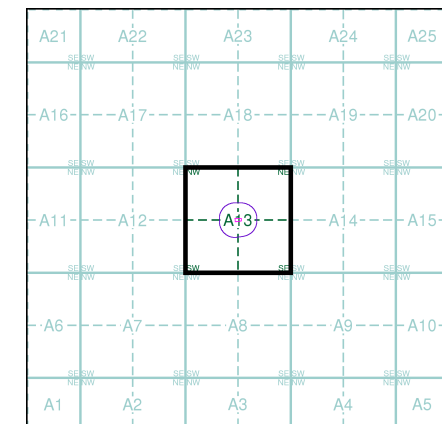
Source map scale - 1:2,500

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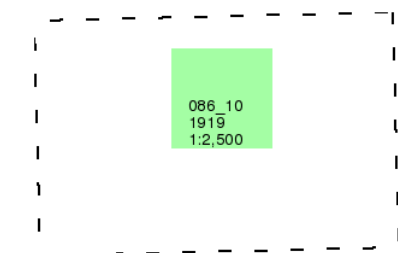
Essex

Published 1919

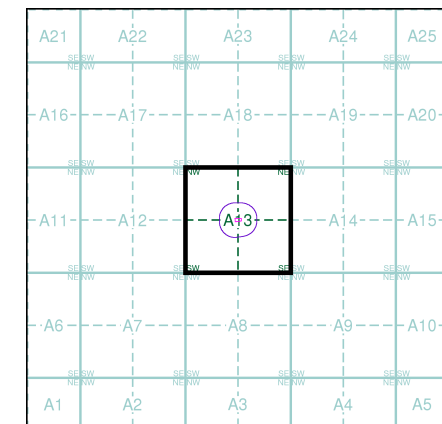
Source map scale - 1:2,500

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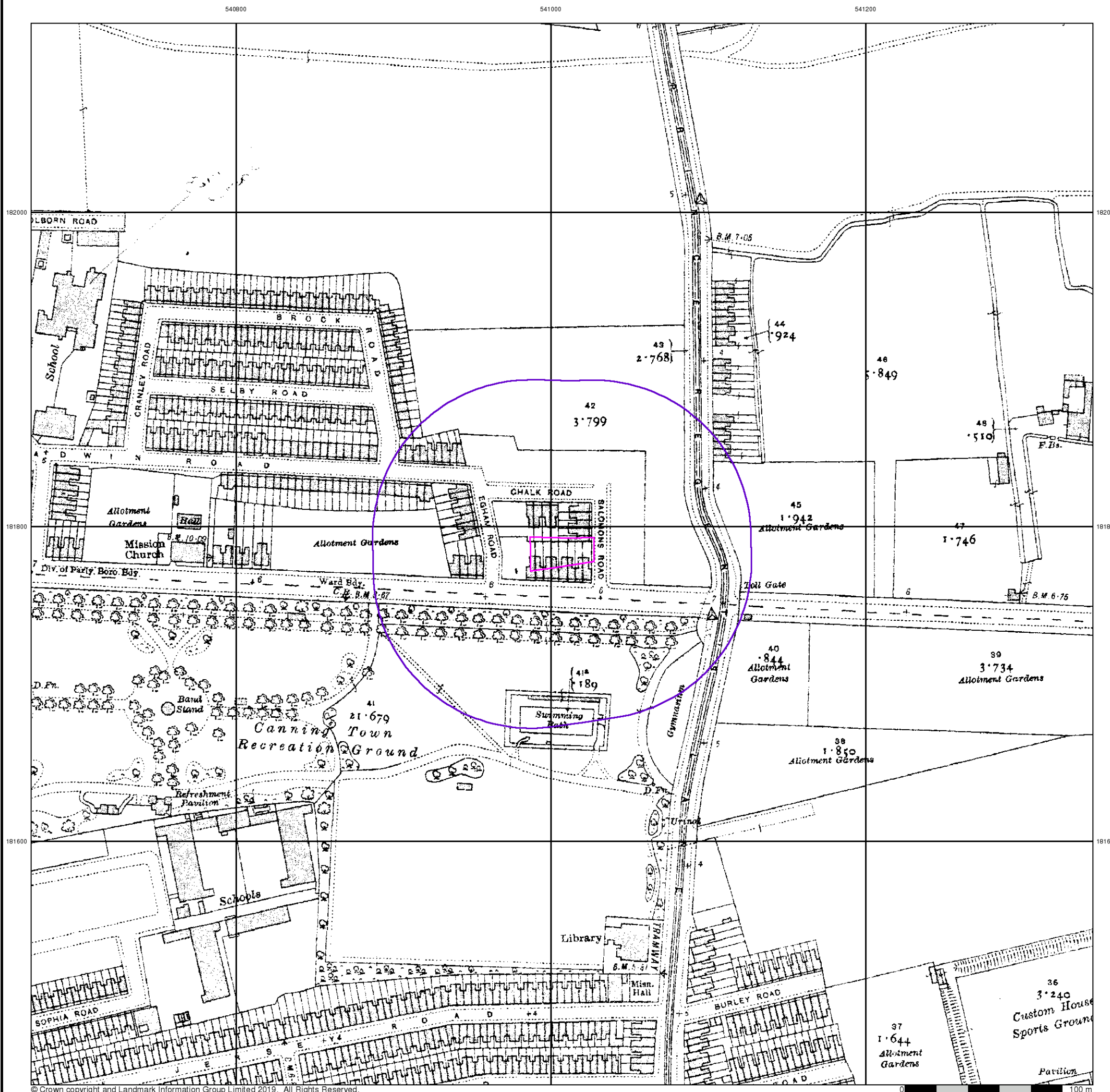


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Historical Aerial Photography

Published 1946

Source map scale - 1:1,250

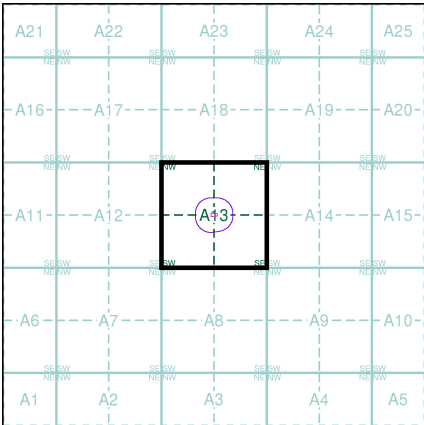
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 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.

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Map Name(s) and Date(s)

TQ4082SEQ4182SW
1946 1946
1:1,250 1:1,250
TQ4081NEQ4181NW
1946 1946
1:1,250 1:1,250
TQ4081SEQ4181SW
1946 1946
1:1,250 1:1,250

Historical Aerial Photography - Segment A13



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HSILIRB

Order Details

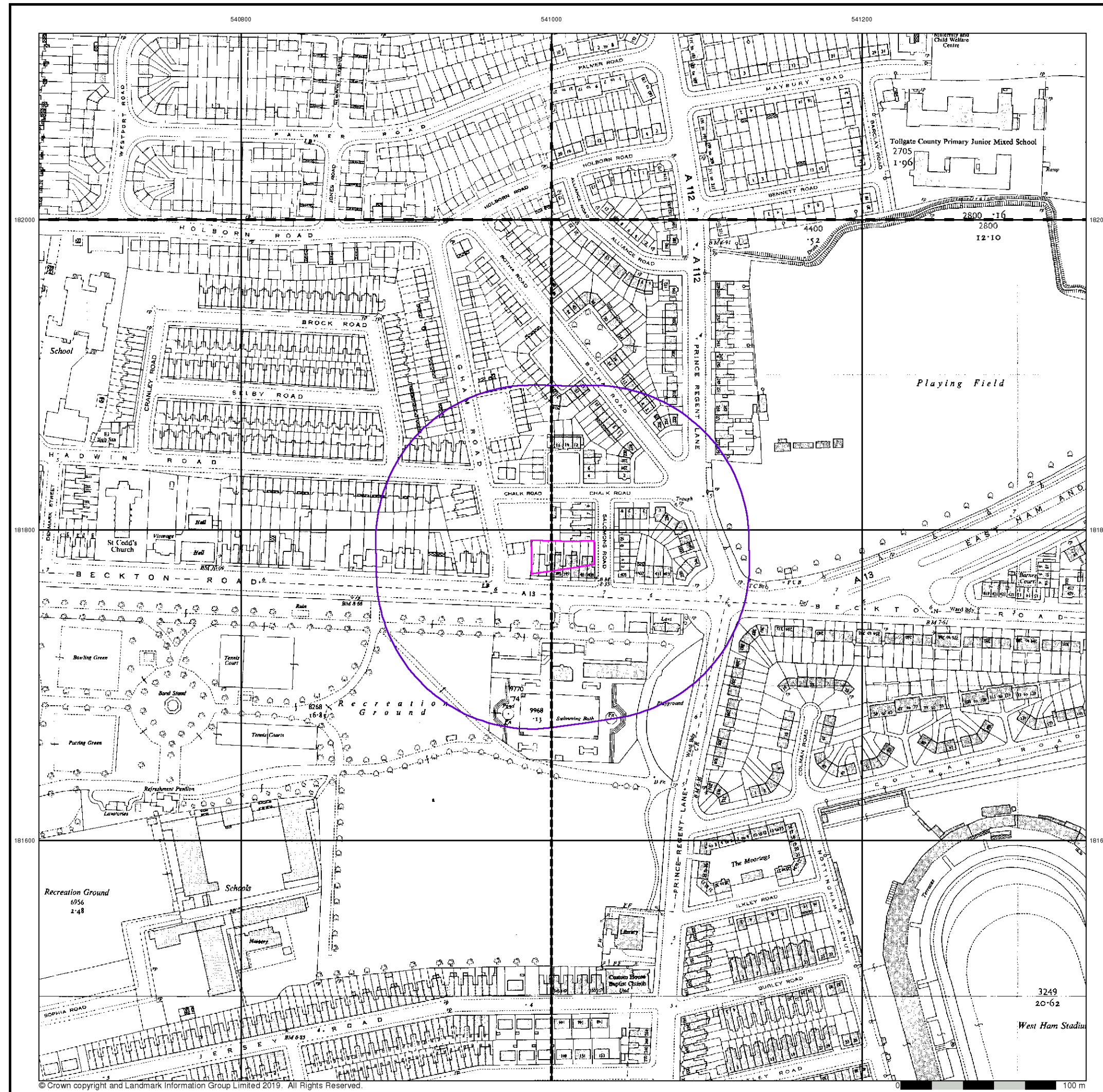
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

3, Salomons Road, LONDON, E13 8PF

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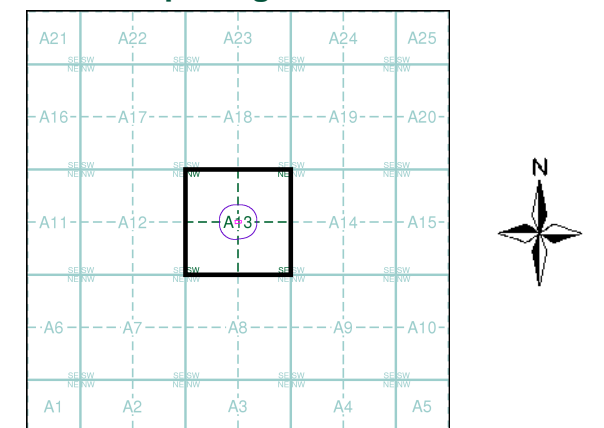
Ordnance Survey Plan Published 1952 - 1960 Source map scale - 1:2,500

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)

TQ4082 1952 12,500	TQ4182 1960 12,500
TQ4081 1953 12,500	TQ4181 1960 12,500

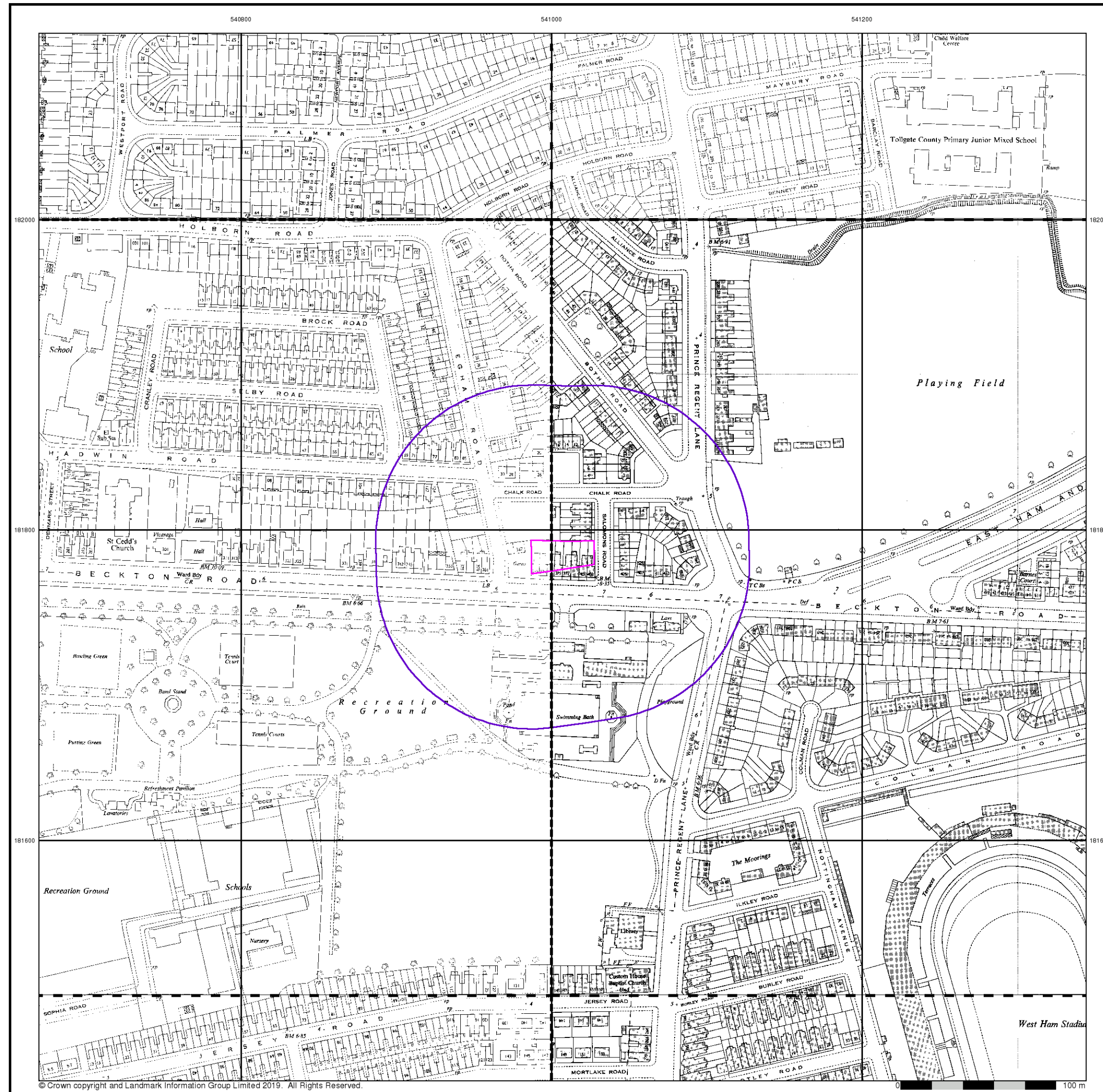
Historical Map - Segment A13



Order Details
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details
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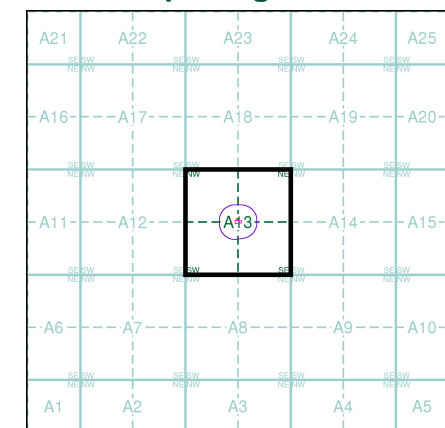
Ordnance Survey Plan Published 1952 - 1959 Source map scale - 1:1,250

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)

TQ4082SE	Q4182SW
1952	1959
1:1,250	1:1,250
TQ4081NE	Q4181NW
1952	1959
1:1,250	1:1,250
TQ4081SE	Q4181SW
1953	1959
1:1,250	1:1,250

Historical Map - Segment A13



Order Details
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
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Ordnance Survey Plan

Published 1955 - 1981

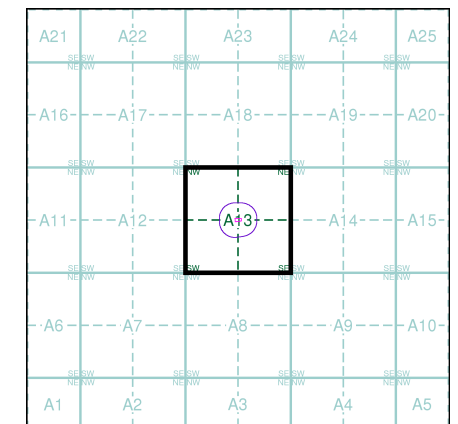
Source map scale - 1:1,250

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)

TQ4082SE	TQ4182SW
1972	1973
1:1,250	1:1,250
TQ4081NE	TQ4181NW
1963	1976
1:1,250	1:1,250
TQ4081SE	TQ4181SW
1955	1981
1:1,250	1:1,250

Historical Map - Segment A13

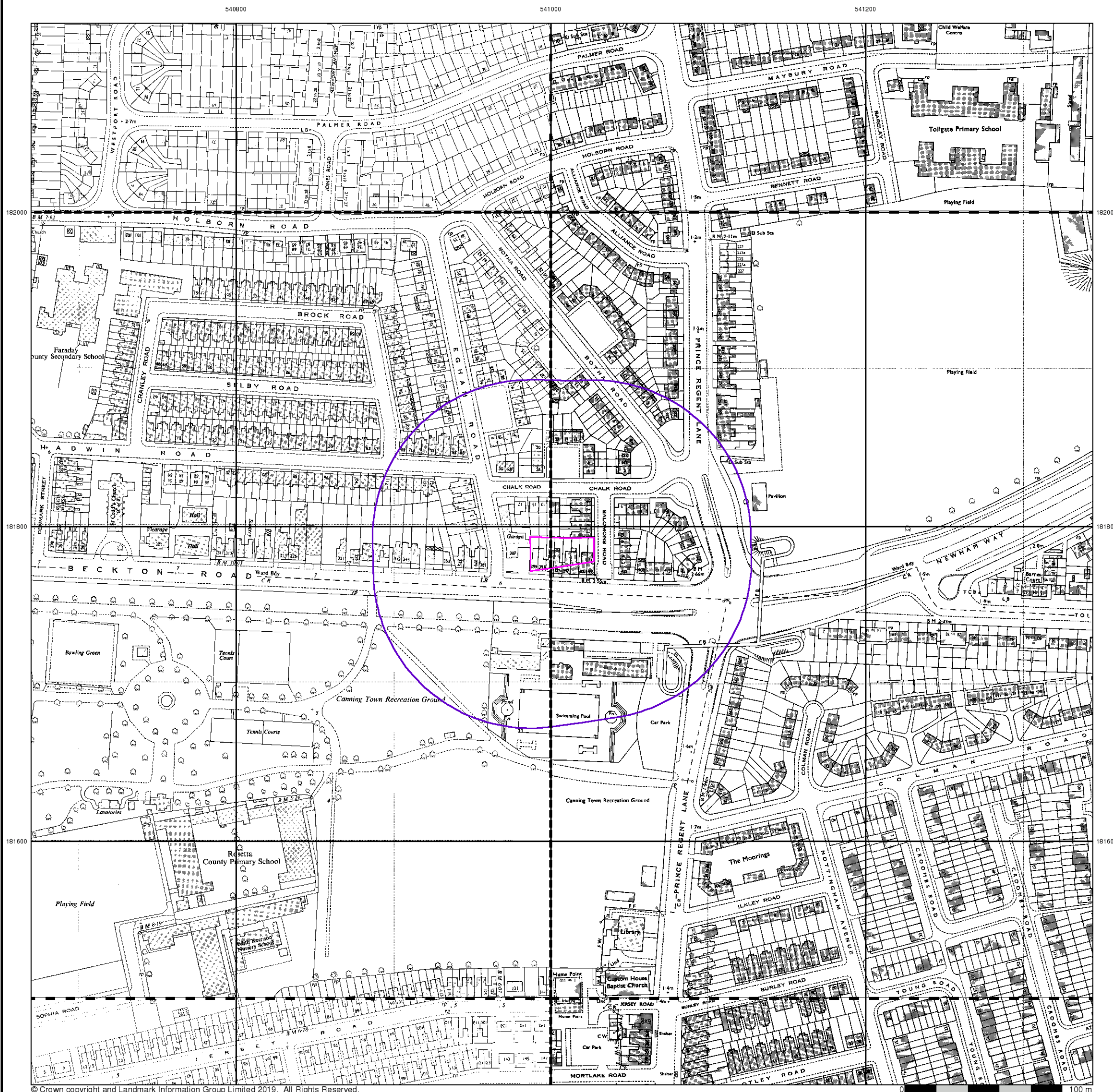


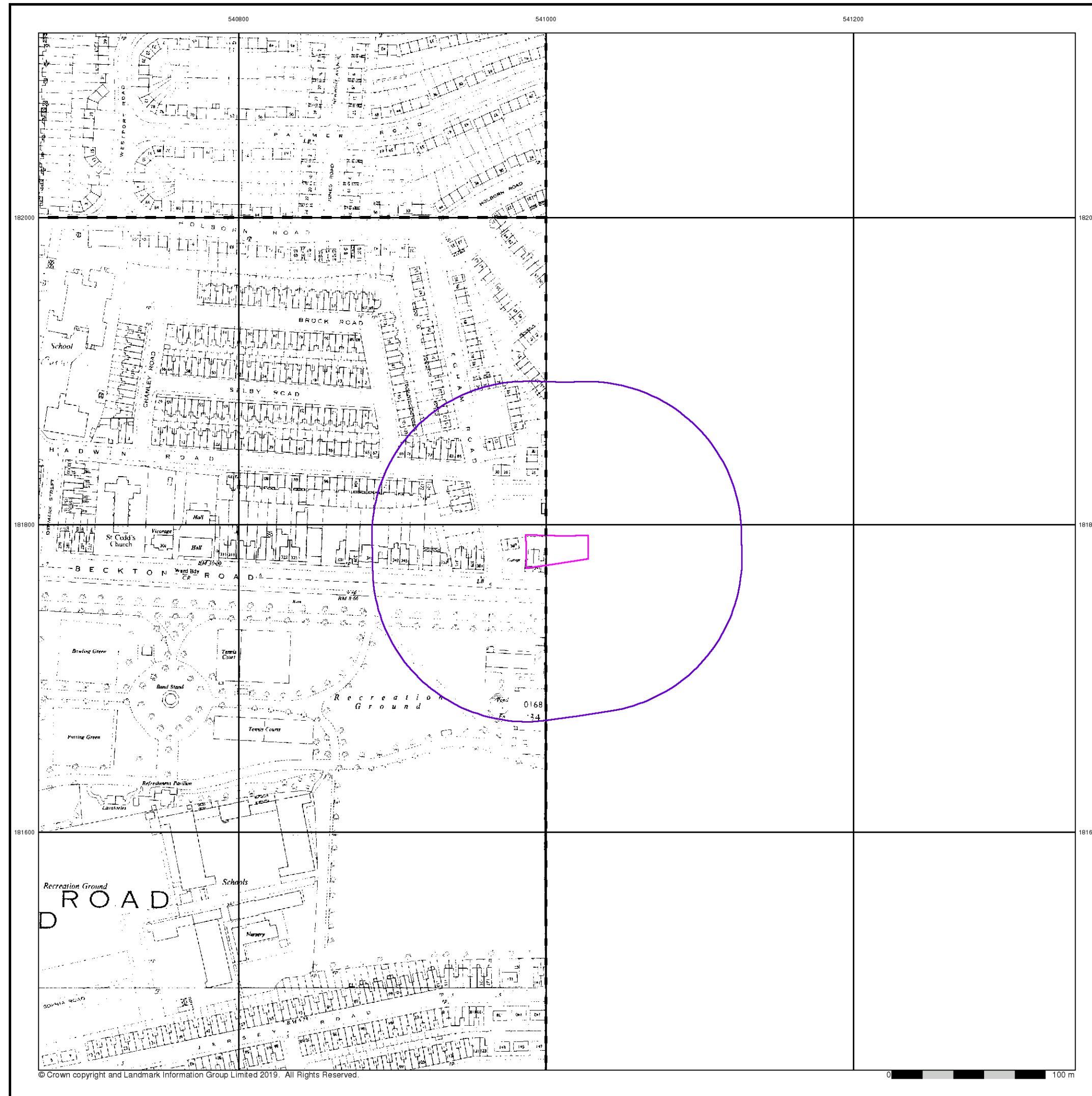
Order Details

Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181780
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 100

Site Details

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0 100 m

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Ordnance Survey Plan

Published 1960

Source map scale - 1:2,500

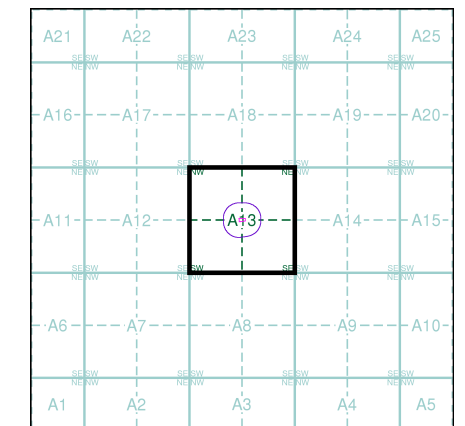
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain.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

TQ4082
1960
1:2,500

TQ4081
1960
1:2,500

Historical Map - Segment A13



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1970 - 1976

Source map scale - 1:1,250

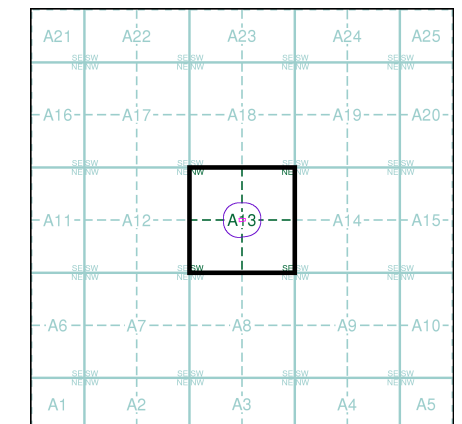
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain.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

TQ4081NE
1976
1:1,250

TQ4081SE
1970
1:1,250

Historical Map - Segment A13



Order Details

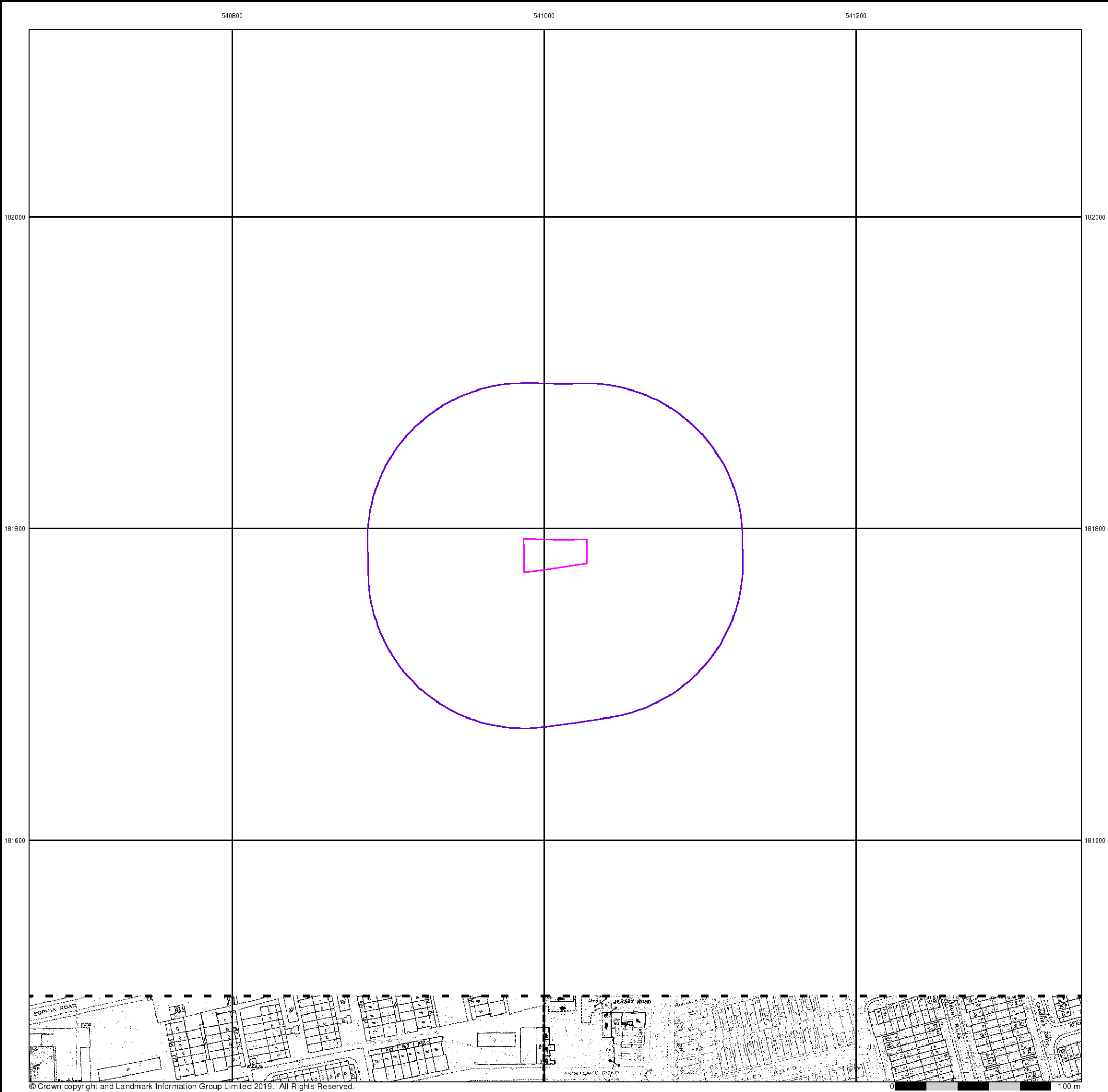
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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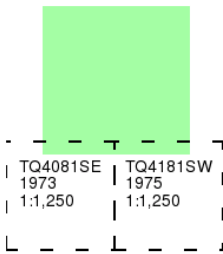
Supply of Unpublished Survey Information

Published 1973 - 1975

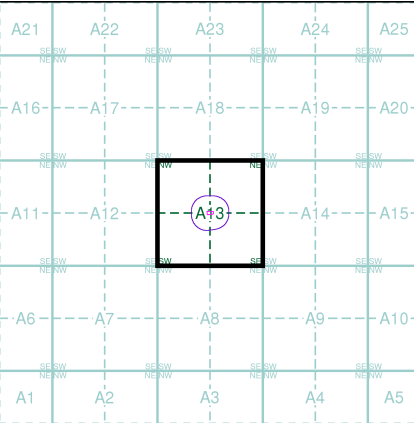
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13

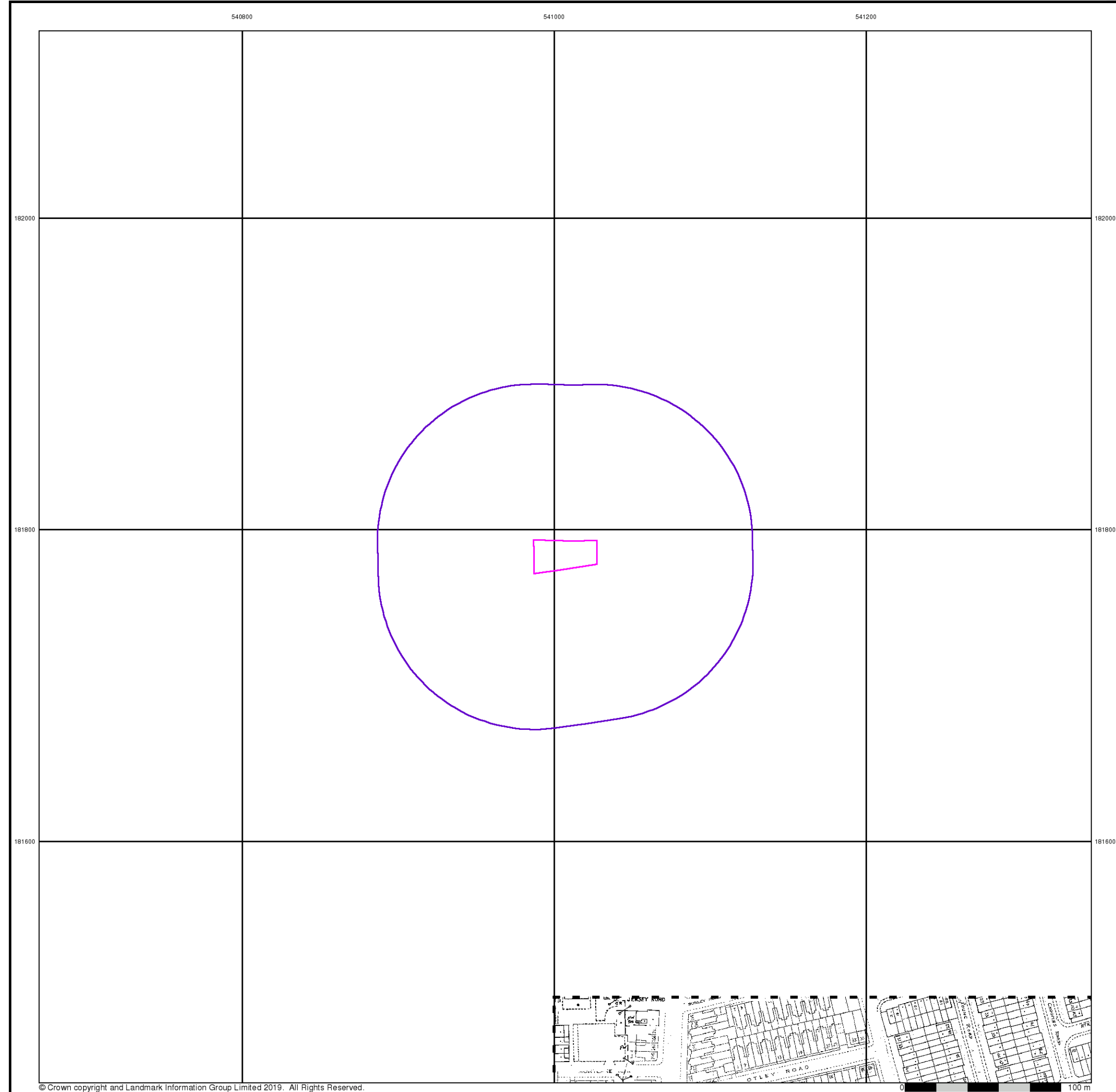


Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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0 100 m

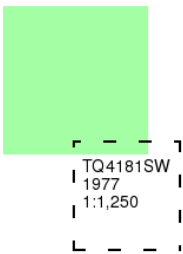
Supply of Unpublished Survey Information

Published 1977

Source map scale - 1:1,250

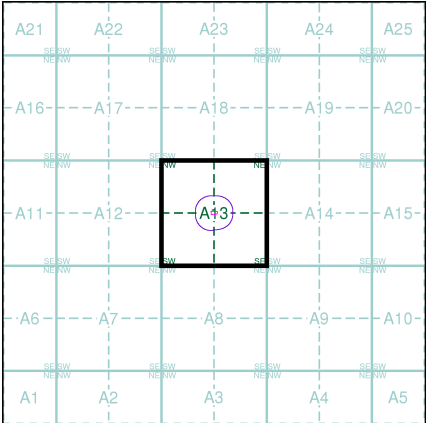
SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment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

Map Name(s) and Date(s)



TQ4181SW
1977
1:1,250

Historical Map - Segment A13

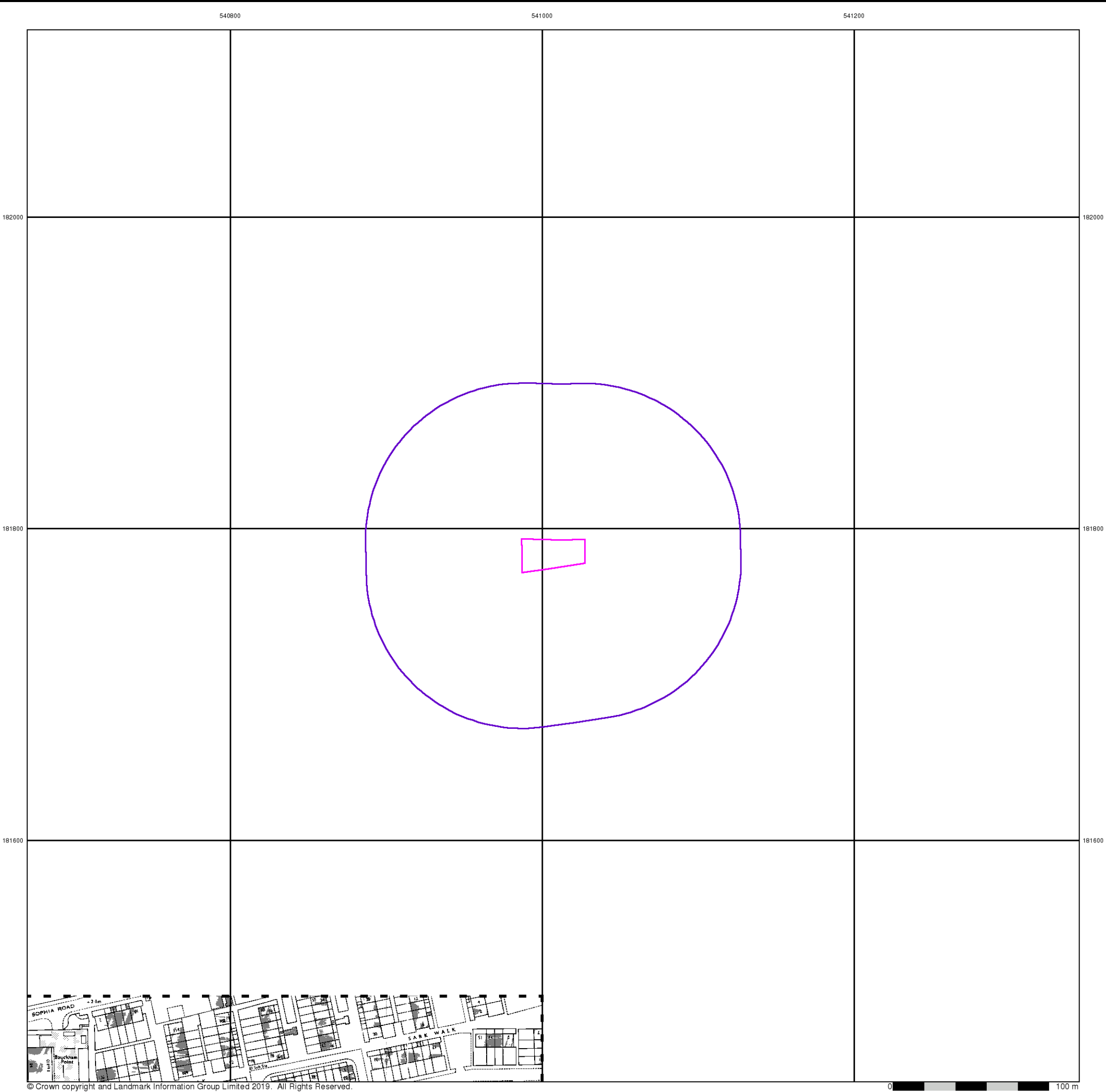


Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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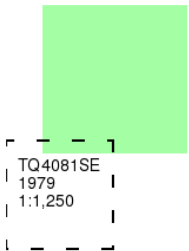
Ordnance Survey Plan

Published 1979

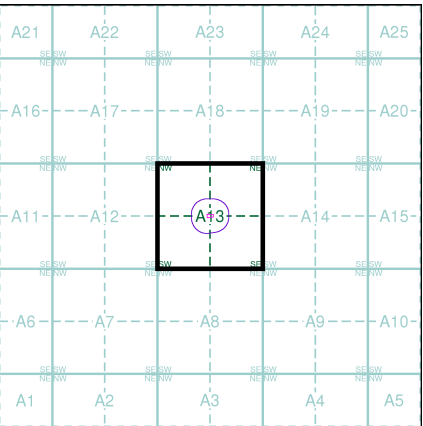
Source map scale - 1:1,250

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:191718974_1_1

Customer Ref:14020774

National Grid Reference:541010, 181780

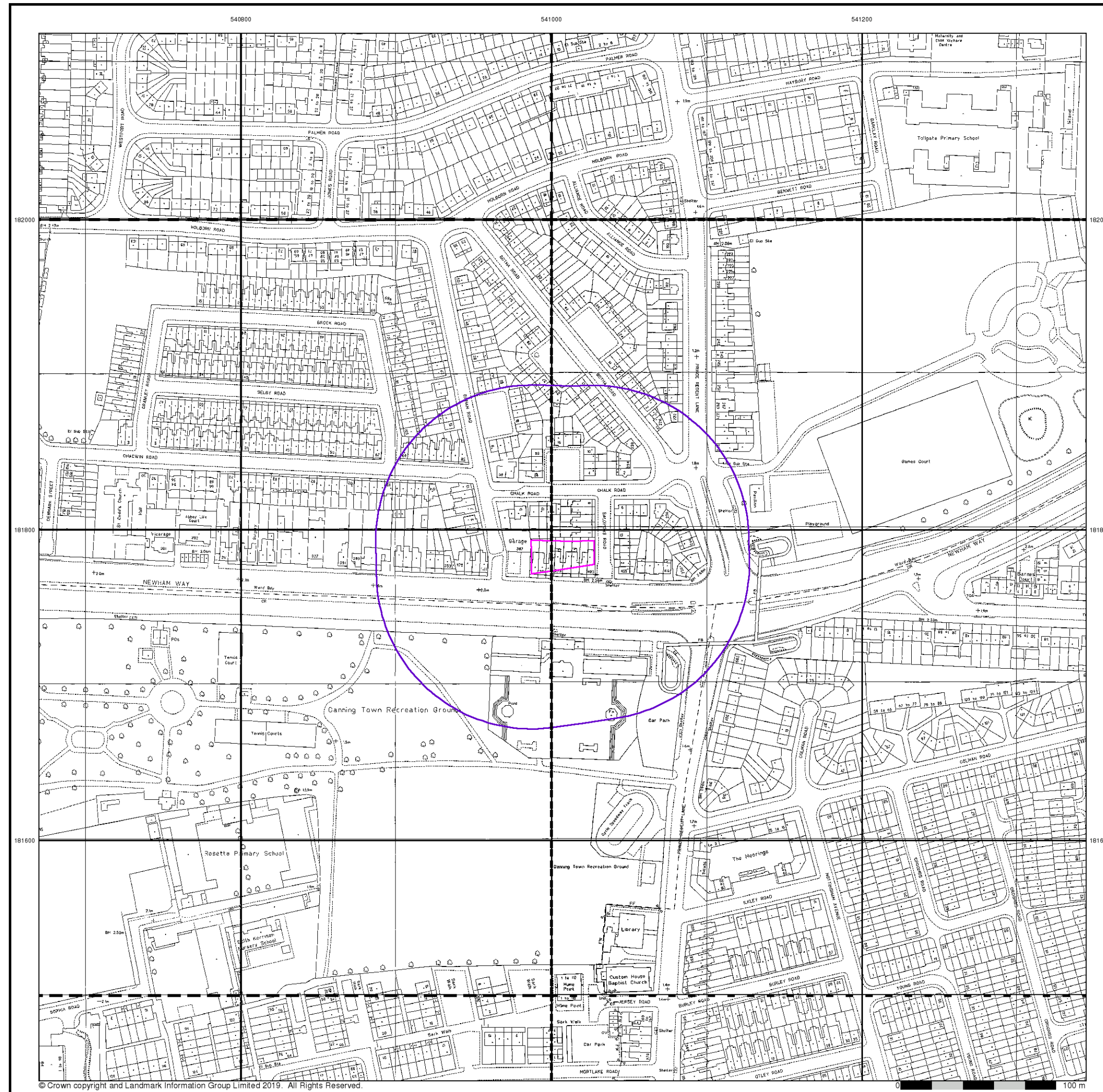
Slice:A

Site Area (Ha):0.08

Search Buffer (m):100

Site Details

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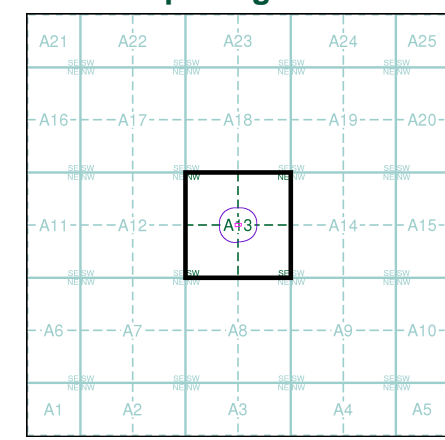
Large-Scale National Grid Data Published 1991 Source map scale - 1:1,250

'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)

TQ4082SE	TQ4182SW
1991	1991
1:1,250	1:1,250
TQ4081NE	TQ4181NW
1991	1991
1:1,250	1:1,250
TQ4081SE	TQ4181SW
1991	1991
1:1,250	1:1,250

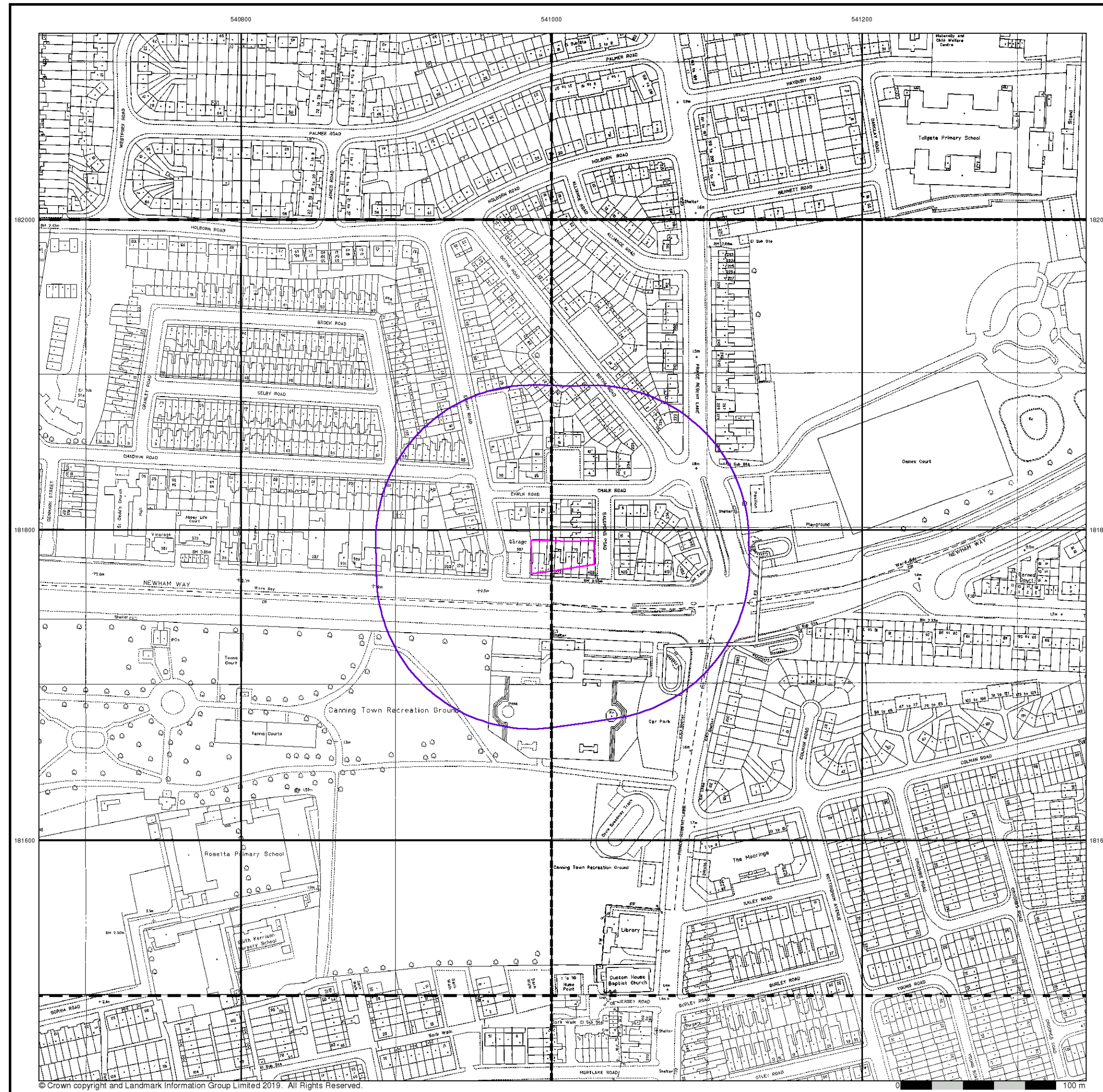
Historical Map - Segment A13



Order Details
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

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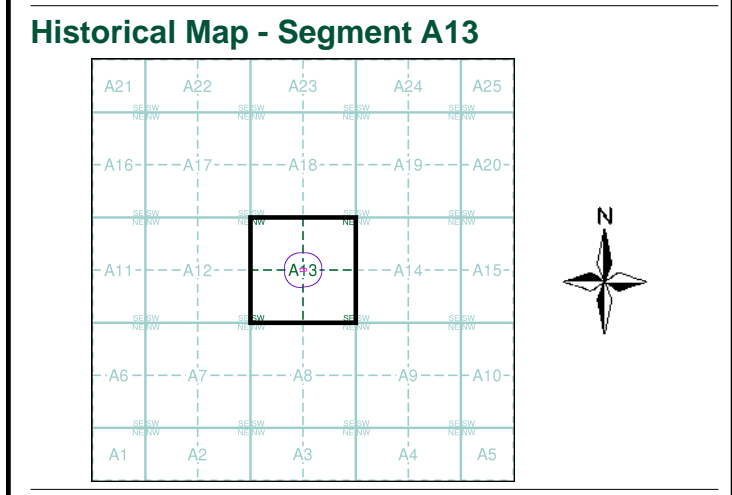


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Large-Scale National Grid Data
Published 1992 - 1994
Source map scale - 1:1,250

'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)	
TQ4082SE	Q4182SW
1992	1992
1:1,250	1:1,250
TQ4081NE	Q4181NW
1992	1993
1:1,250	1:1,250
TQ4081SE	Q4181SW
1992	1994
1:1,250	1:1,250



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

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Large-Scale National Grid Data

Published 1993

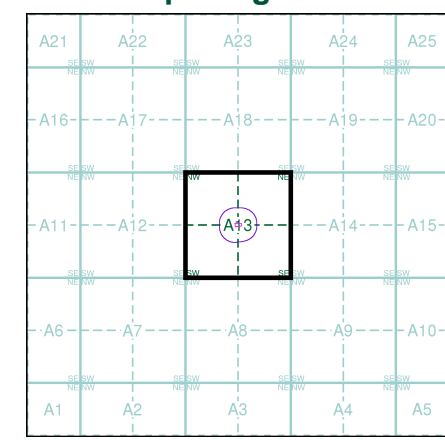
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

TQ4082SE
1993
1:1,250
TQ4081NE Q4181NW
1993 1993
1:1,250 1:1,250
TQ4081SE
1993
1:1,250

Historical Map - Segment A13



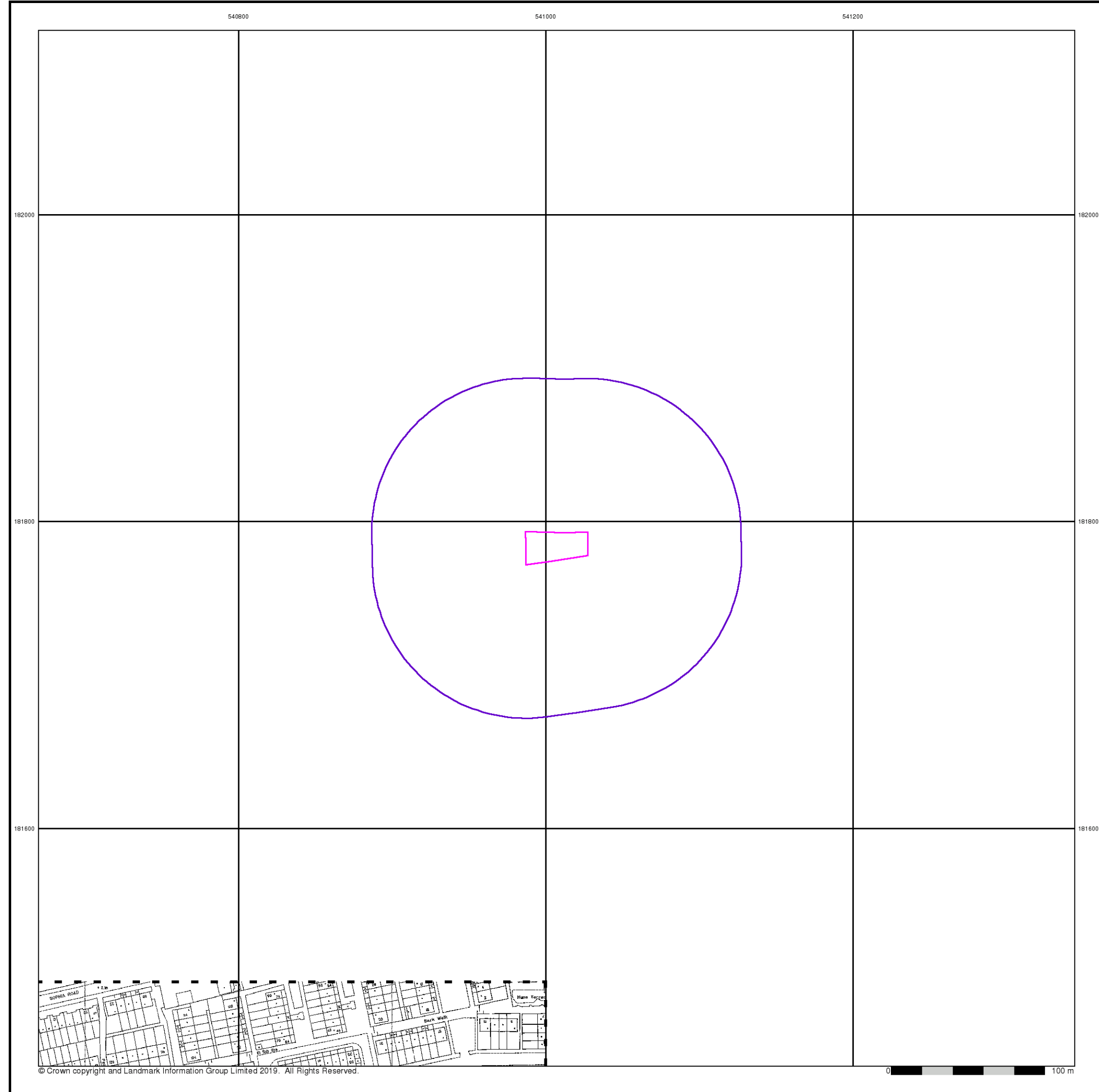
Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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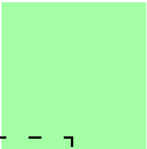
Large-Scale National Grid Data

Published 1994

Source map scale - 1:1,250

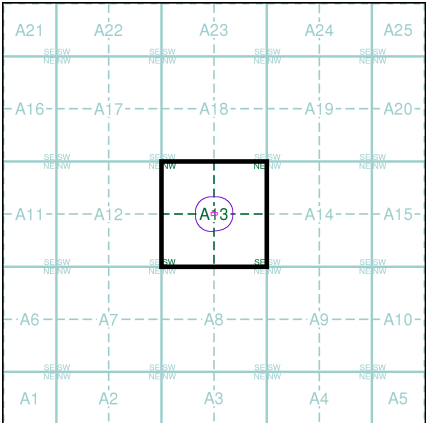
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic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

Map Name(s) and Date(s)



TQ4081SE
1994
1:1,250

Historical Map - Segment A13



Order Details

Order Number:	191718974_1_1
Customer Ref:	14020774
National Grid Reference:	541010, 181780
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

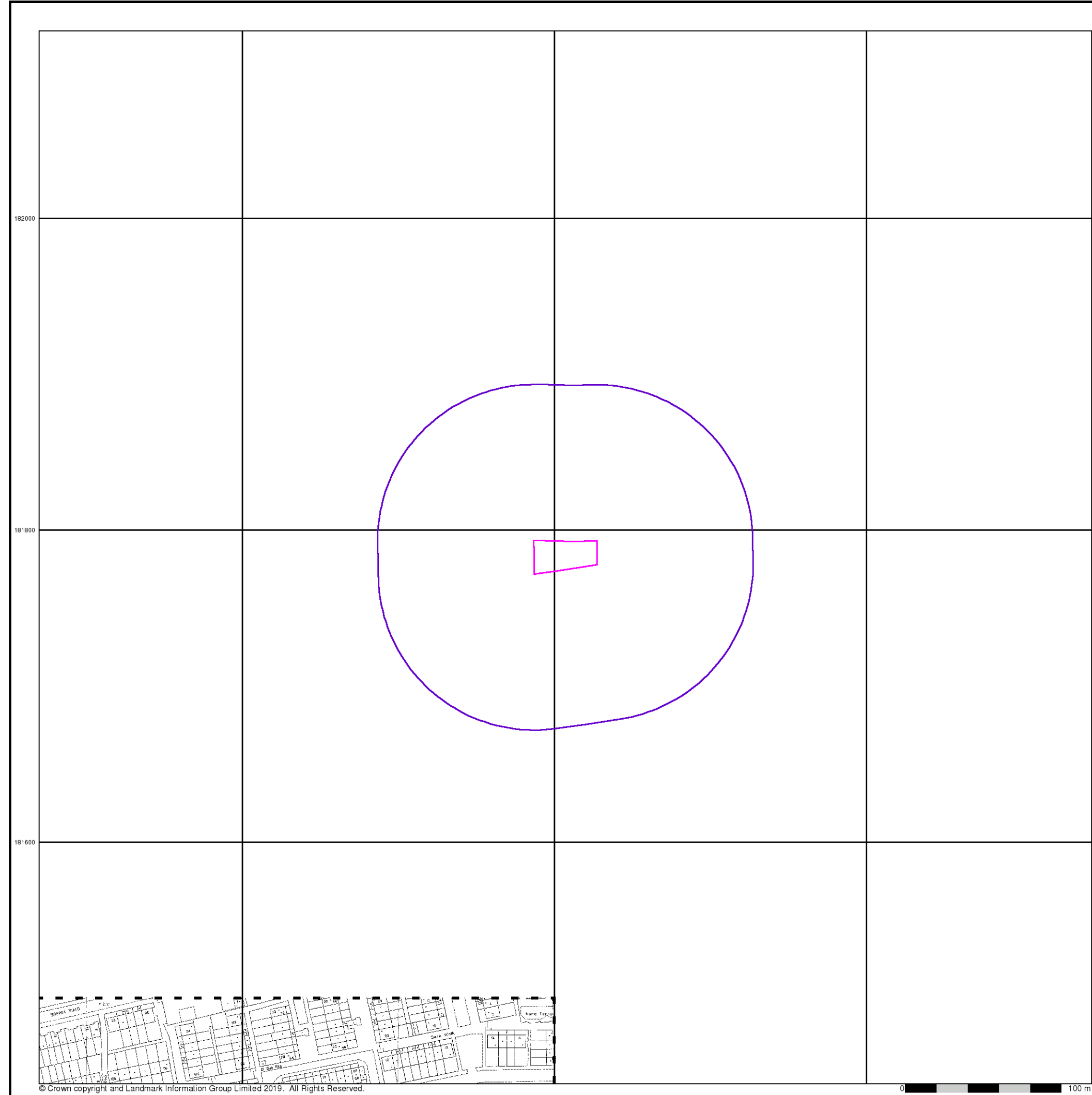
3, Salomons Road, LONDON, E13 8PF

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0 100 m

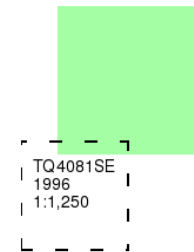
Large-Scale National Grid Data

Published 1996

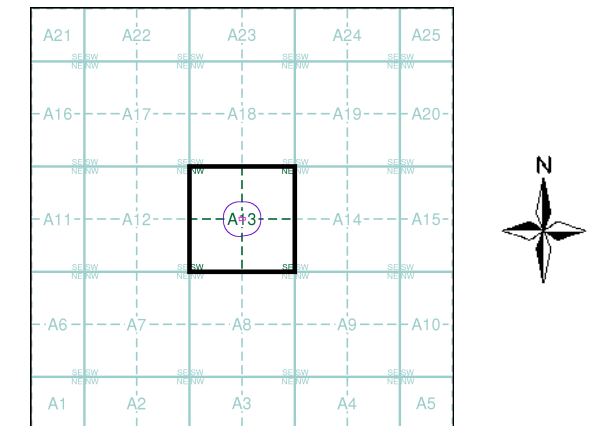
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 100

Site Details

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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

A21	A22	A23	A24	A25
A16	A17	A18	A19	A20
A11	A12	A13	A14	A15
A6	A7	A8	A9	A10
A1	A2	A3	A4	A5

Order Details

Order Number:	191718974_1_1
Customer Ref:	14020774
National Grid Reference:	541010, 181780
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

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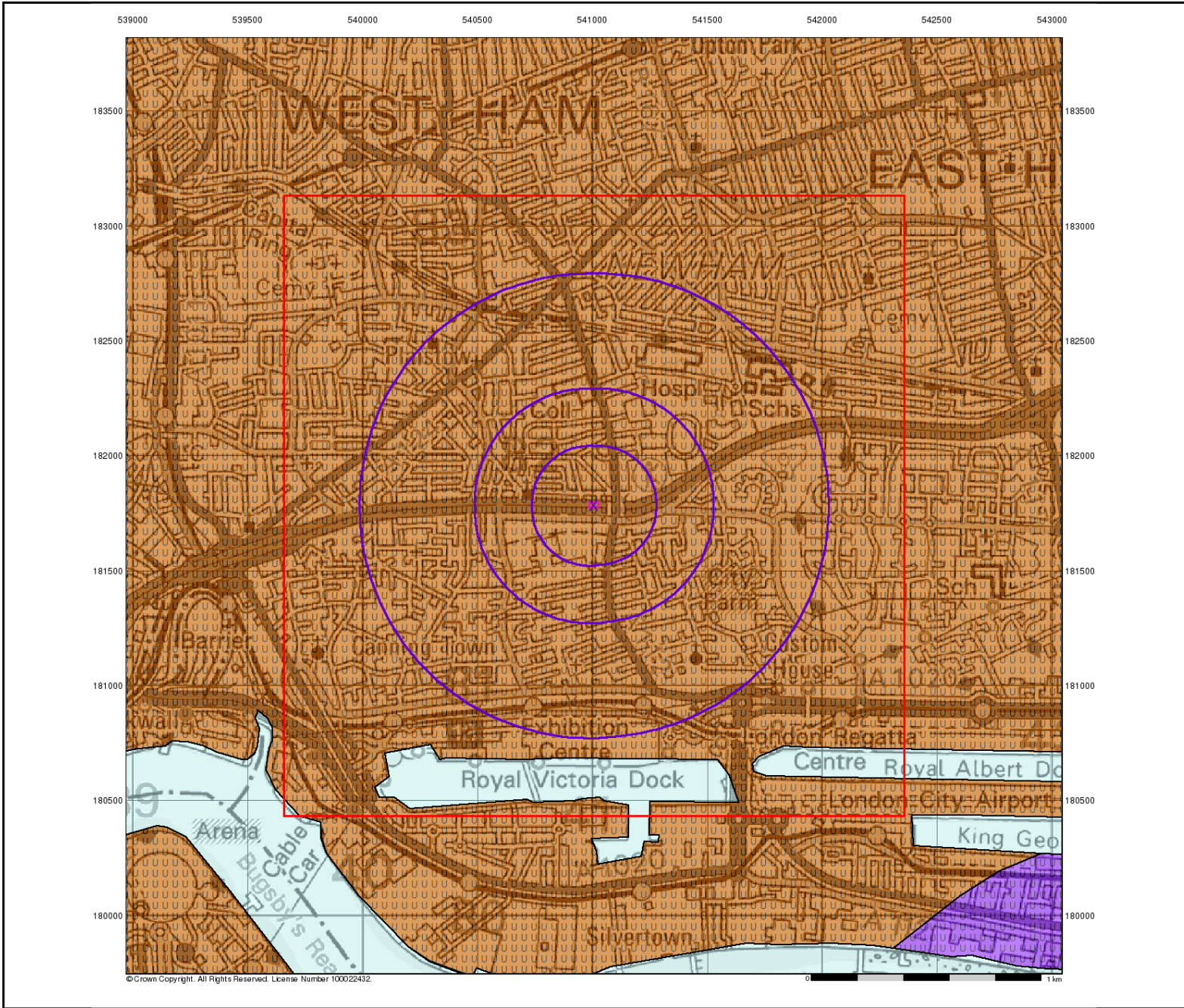
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APPENDIX B

Envirocheck Data Sheets and Site Sensitivity Maps



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Groundwater Vulnerability

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

Major Aquifer
(Highly Permeable)

Minor Aquifer
(Variably Permeable)

Non Aquifer
(Negligibly Permeable)

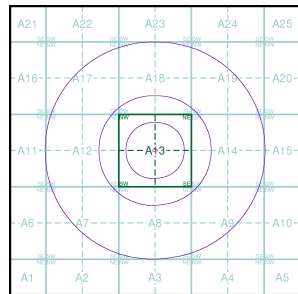
Water or Sea

Drift Deposit

Soil Classes

- High (H) 1, 2, 3, U
- Intermediate (I) 1, 2
- Low
- High (H) 1, 2, 3, U
- Intermediate (I) 1, 2
- Low

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

Site Details

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0 1 km

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Bedrock Aquifer Designation

General

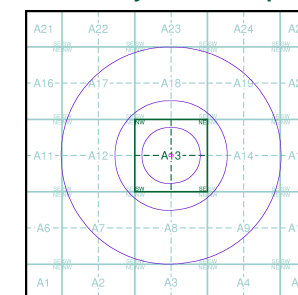
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

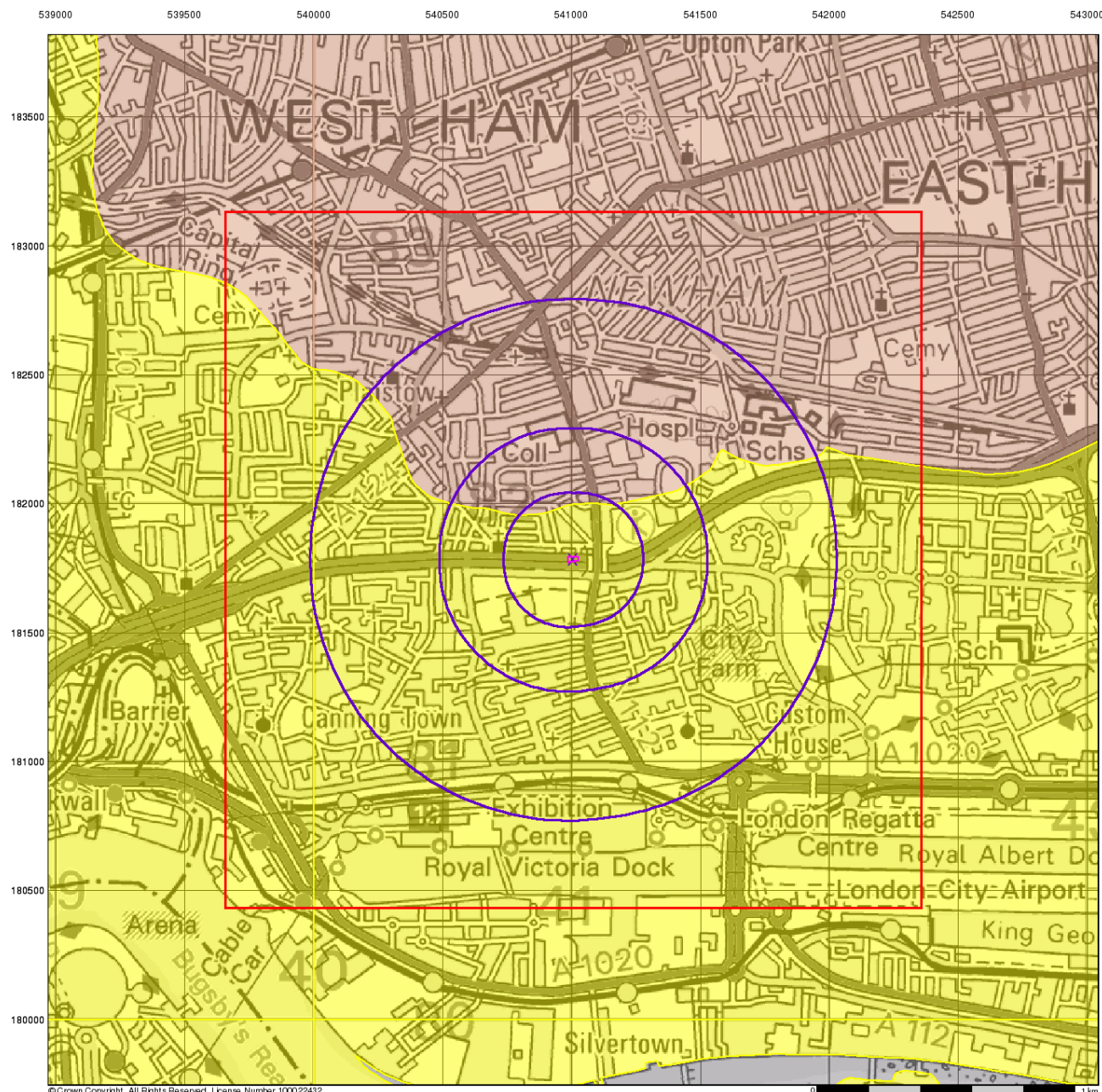
Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181870
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

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Superficial Aquifer Designation

General

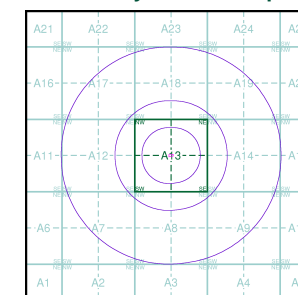
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

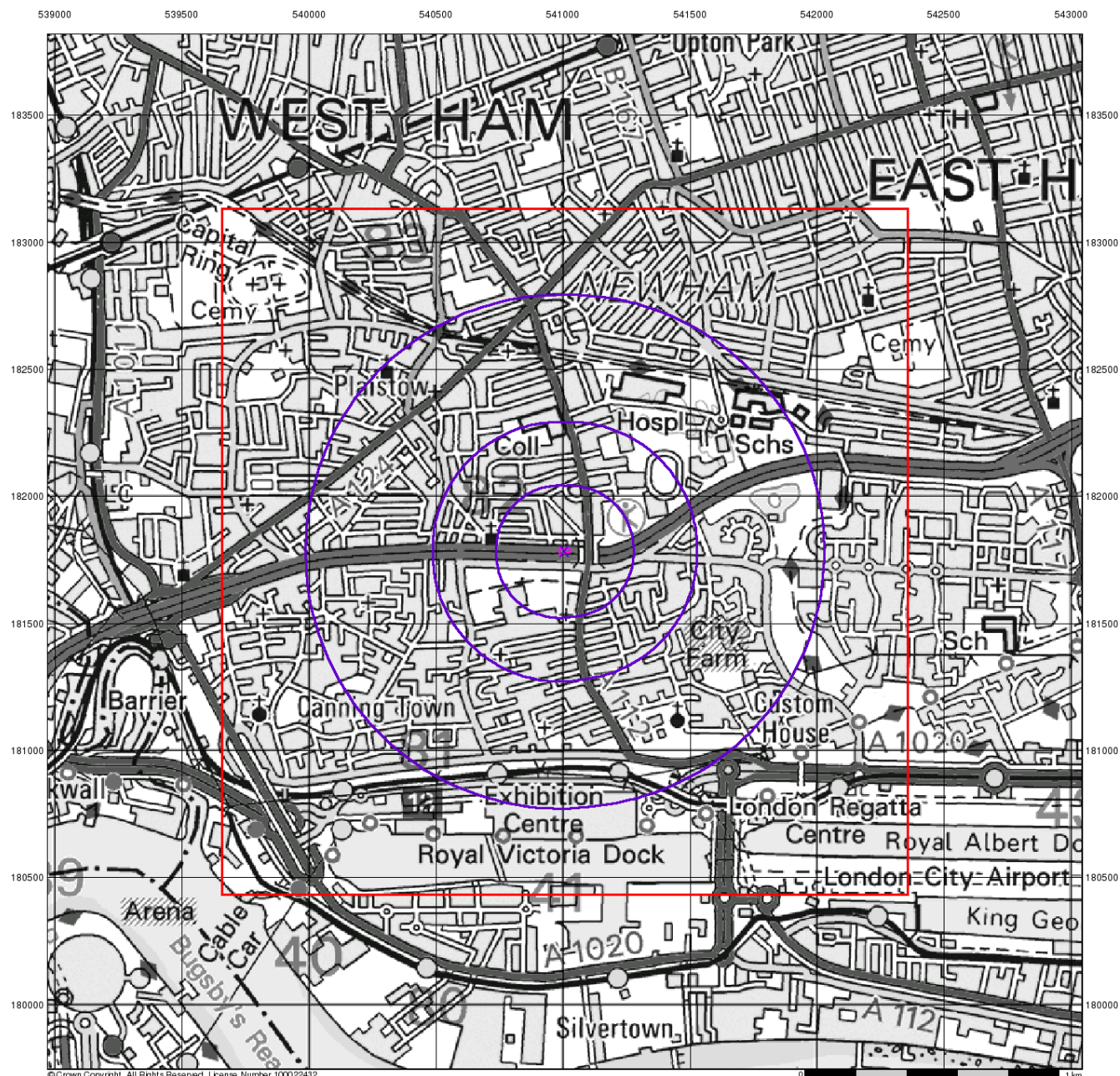
Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181780
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

Site Details

3, Salomons Road, LONDON, E13 8PF

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Source Protection Zones

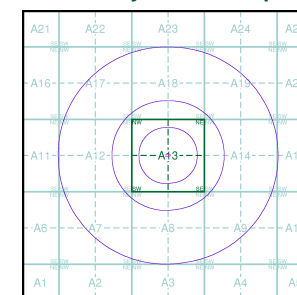
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



Order Details

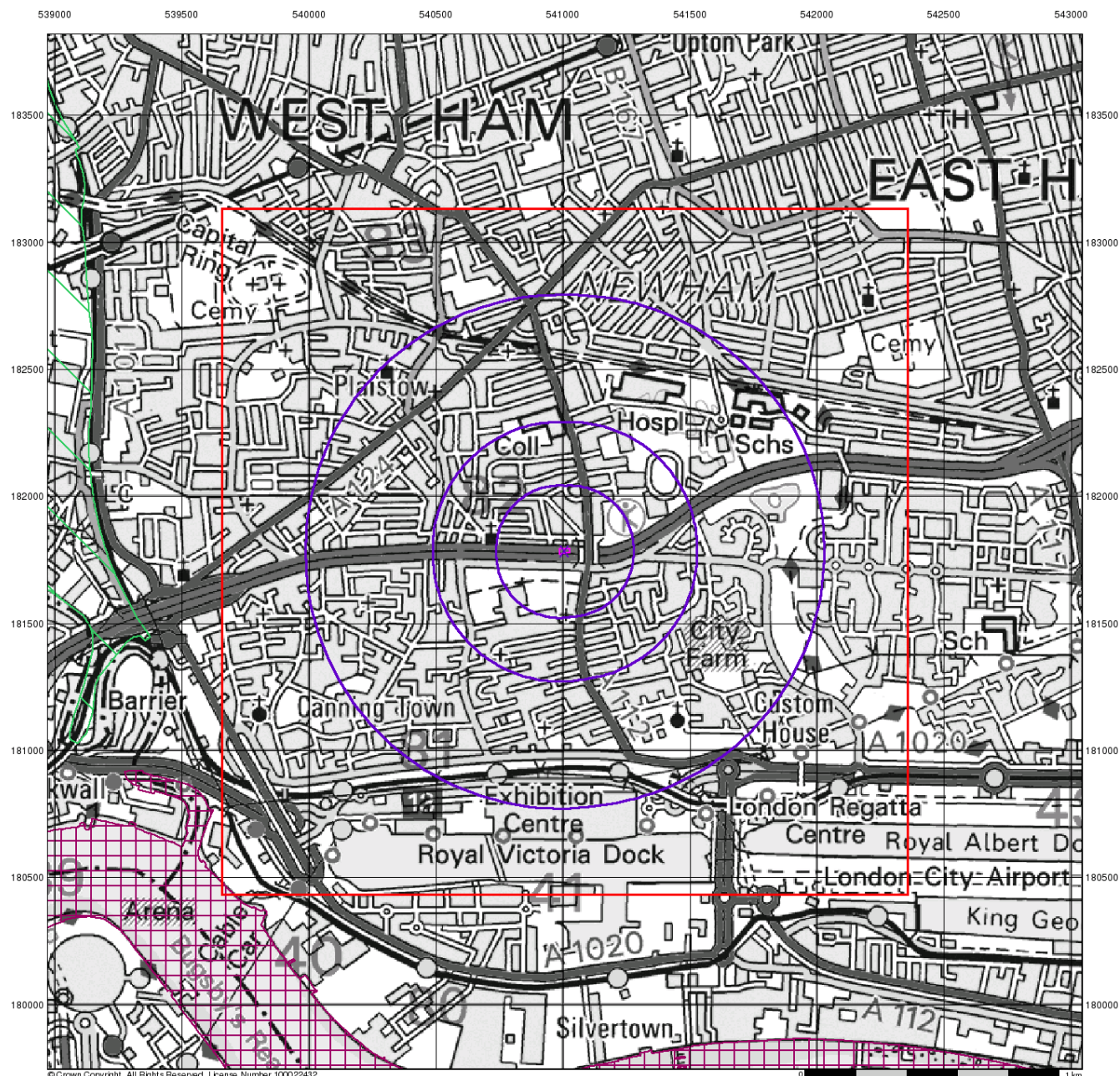
Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181780
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

Site Details

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Sensitive Land Uses

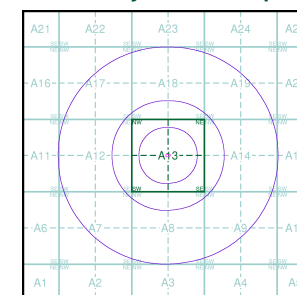
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

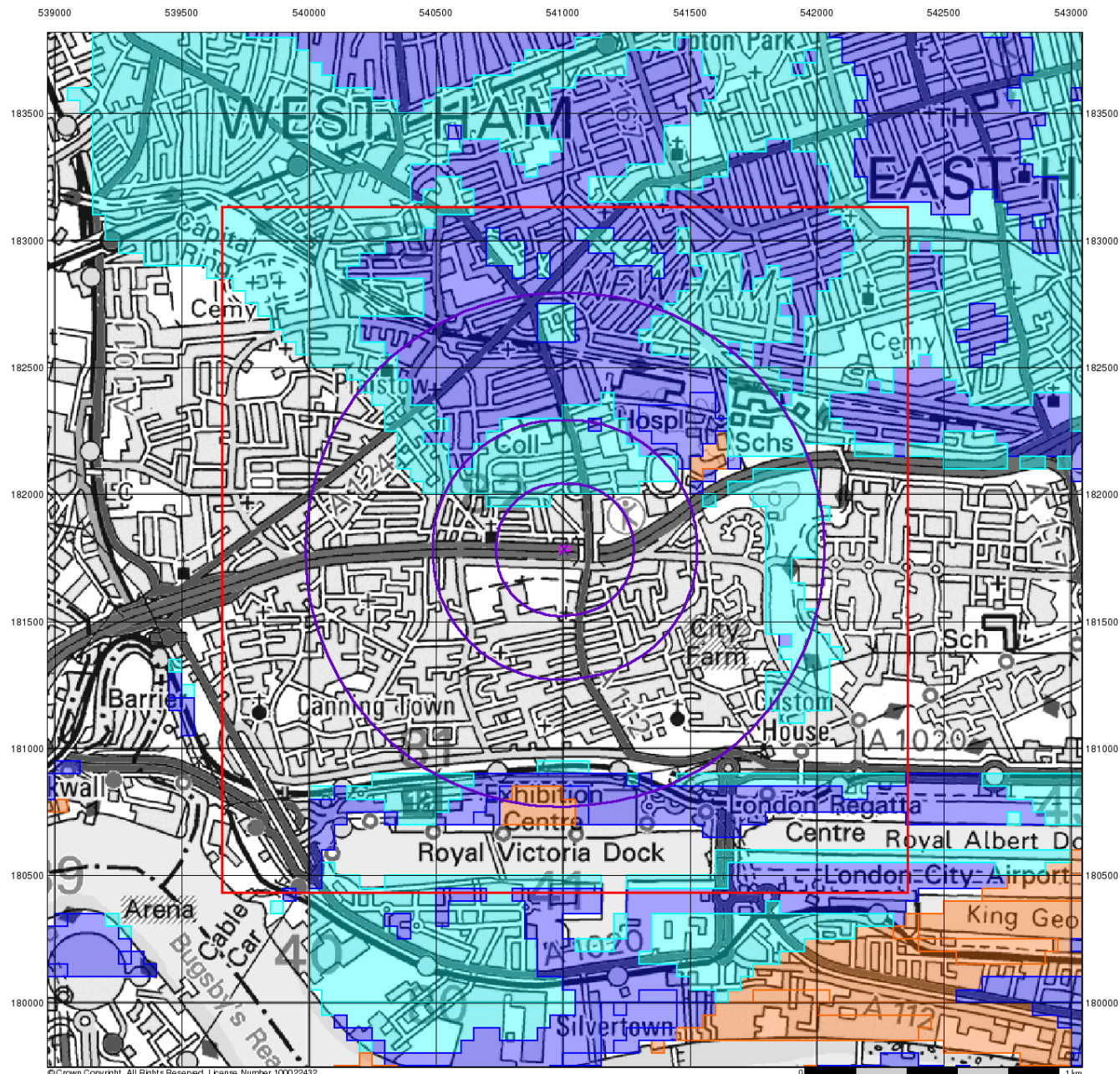
Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181780
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

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BGS Flood GFS Data

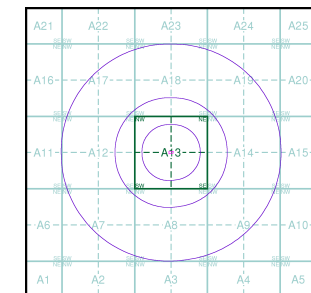
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 191718974_1_1
 Customer Ref: 14020774
 National Grid Reference: 541010, 181780
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

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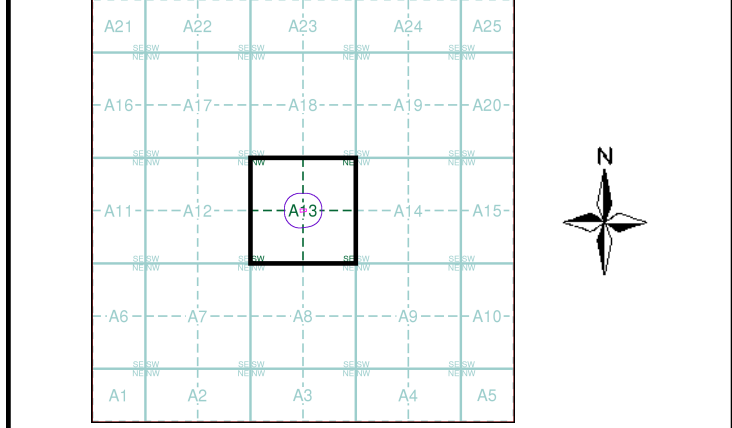
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- General**
 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
 - Pylon
 - Overhead Transmission Line
- Agency and Hydrological**
 - Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**
 - BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
 - COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
 - BGS Recorded Mineral Site

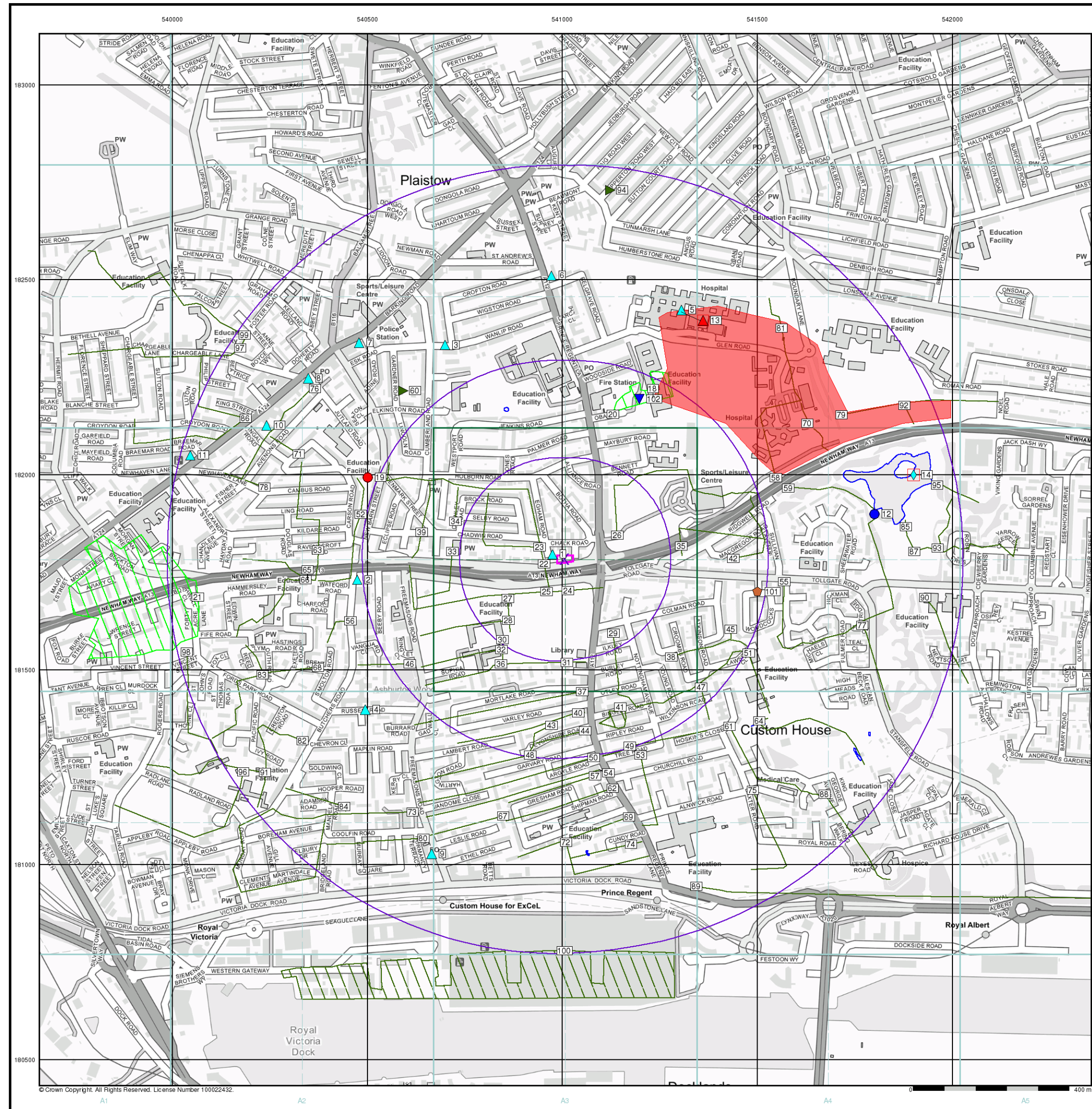
Site Sensitivity Map - Segment A13



Order Details
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Plot Buffer (m): 100

Site Details
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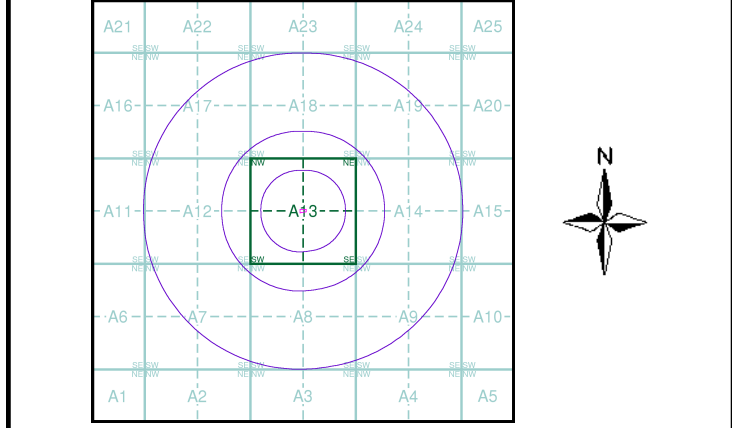
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- General**
 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
- Agency and Hydrological**
 - Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**
 - BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
 - COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
 - BGS Recorded Mineral Site
- Geological**
 - BGS Recorded Mineral Site

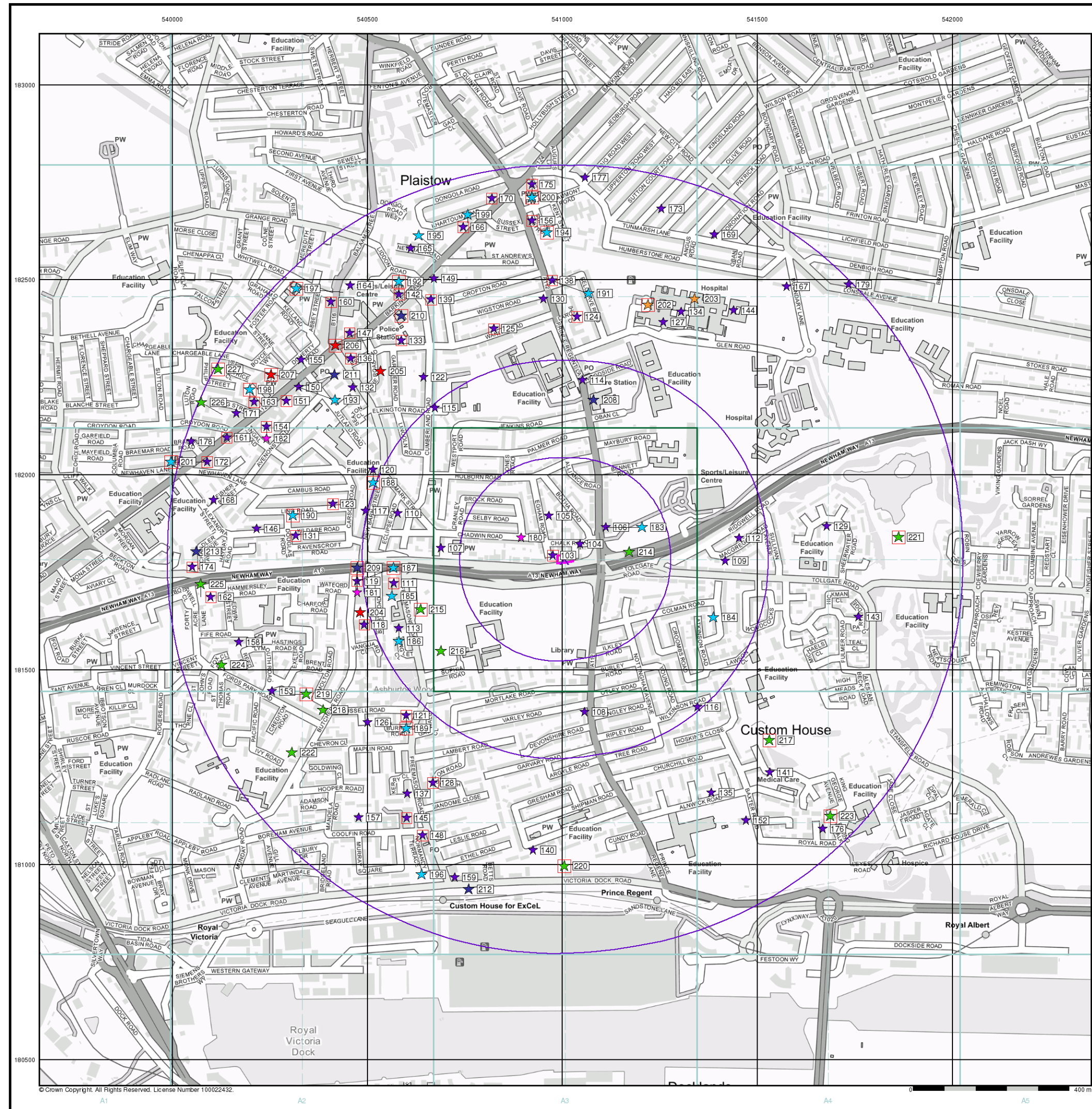
Site Sensitivity Map - Slice A



Order Details
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

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Industrial Land Use Map

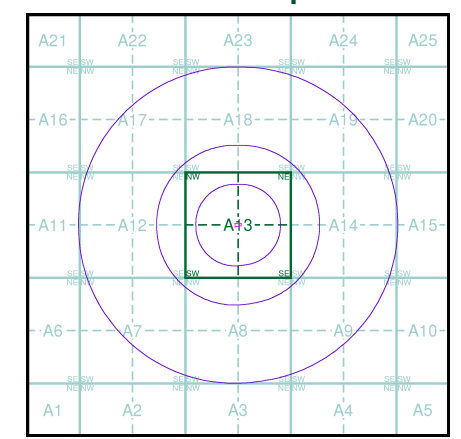
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

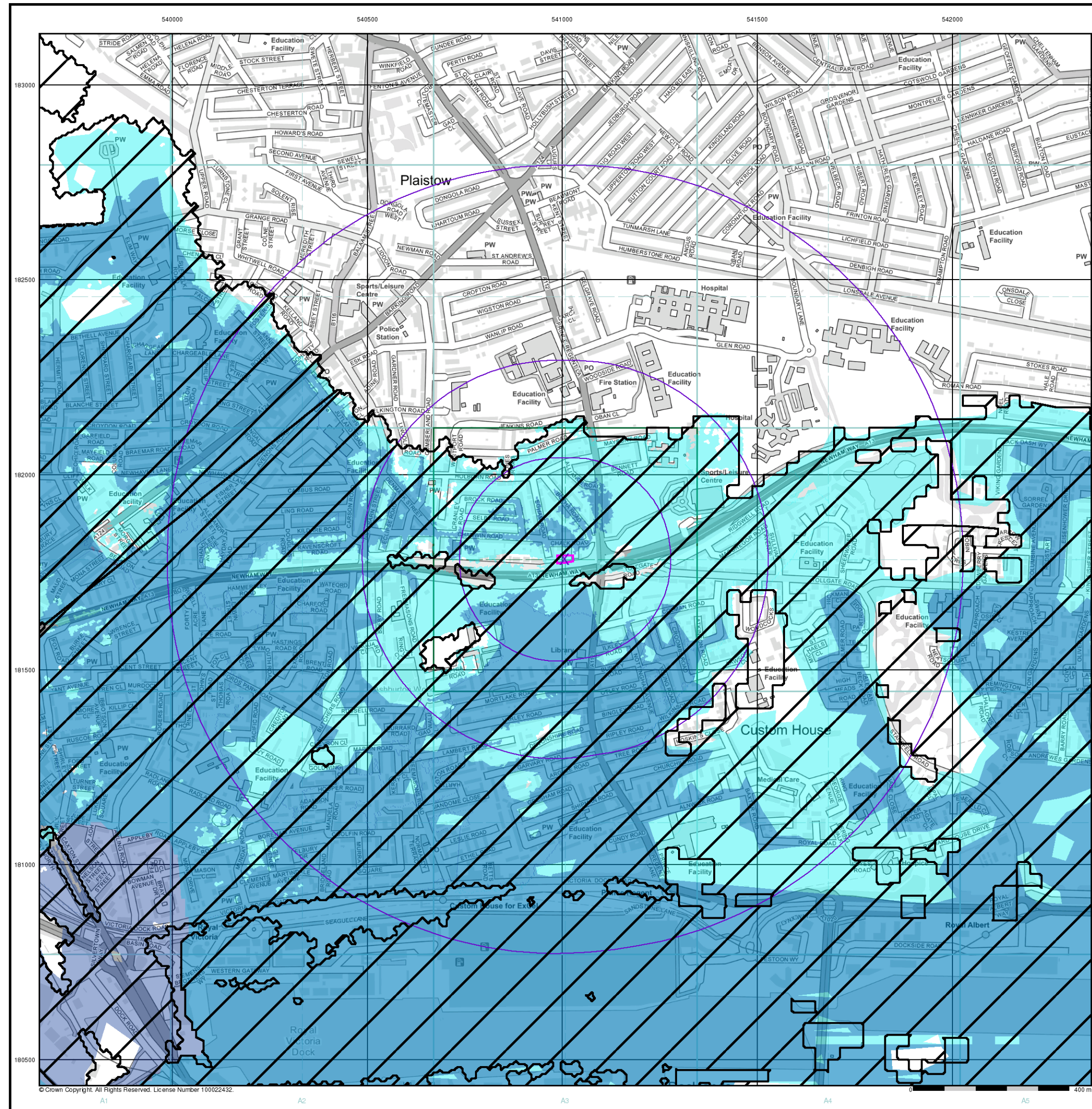
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
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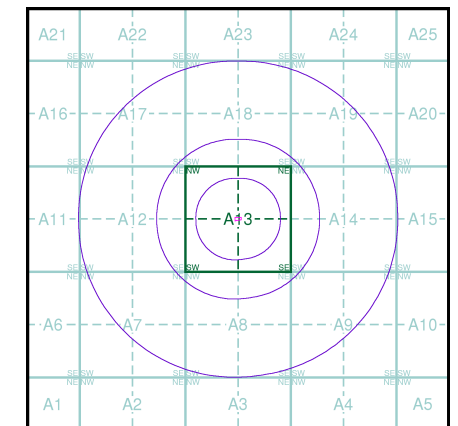
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

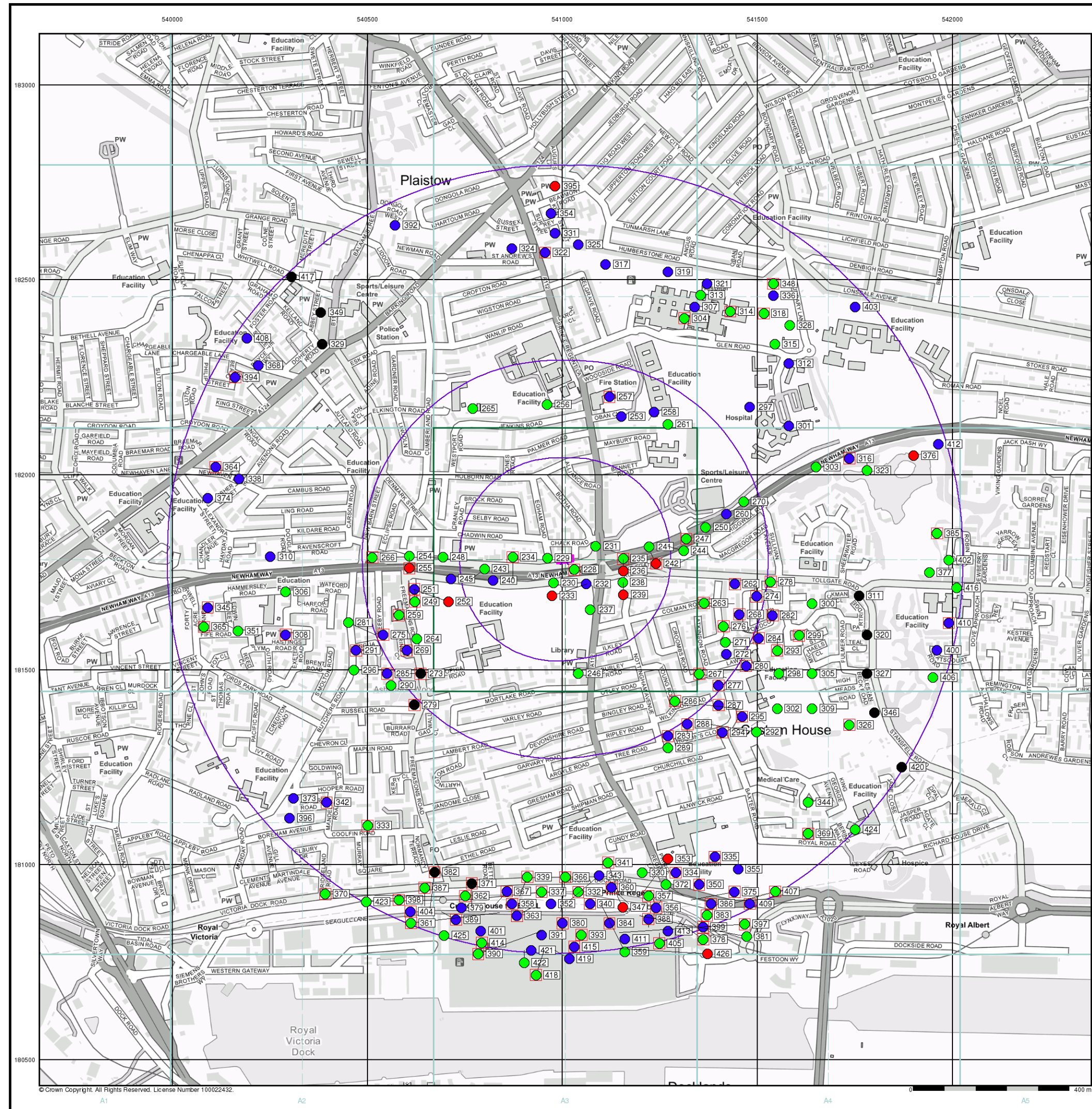
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

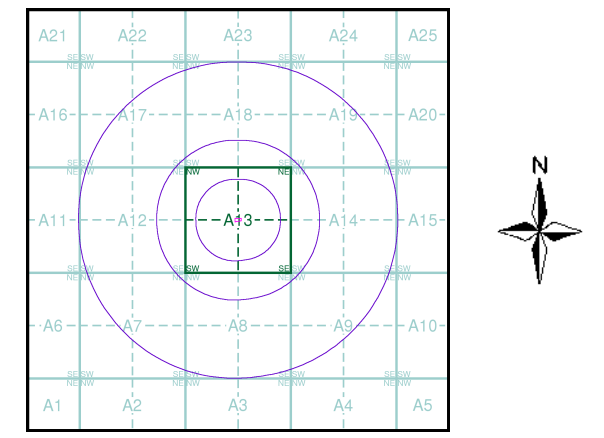
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

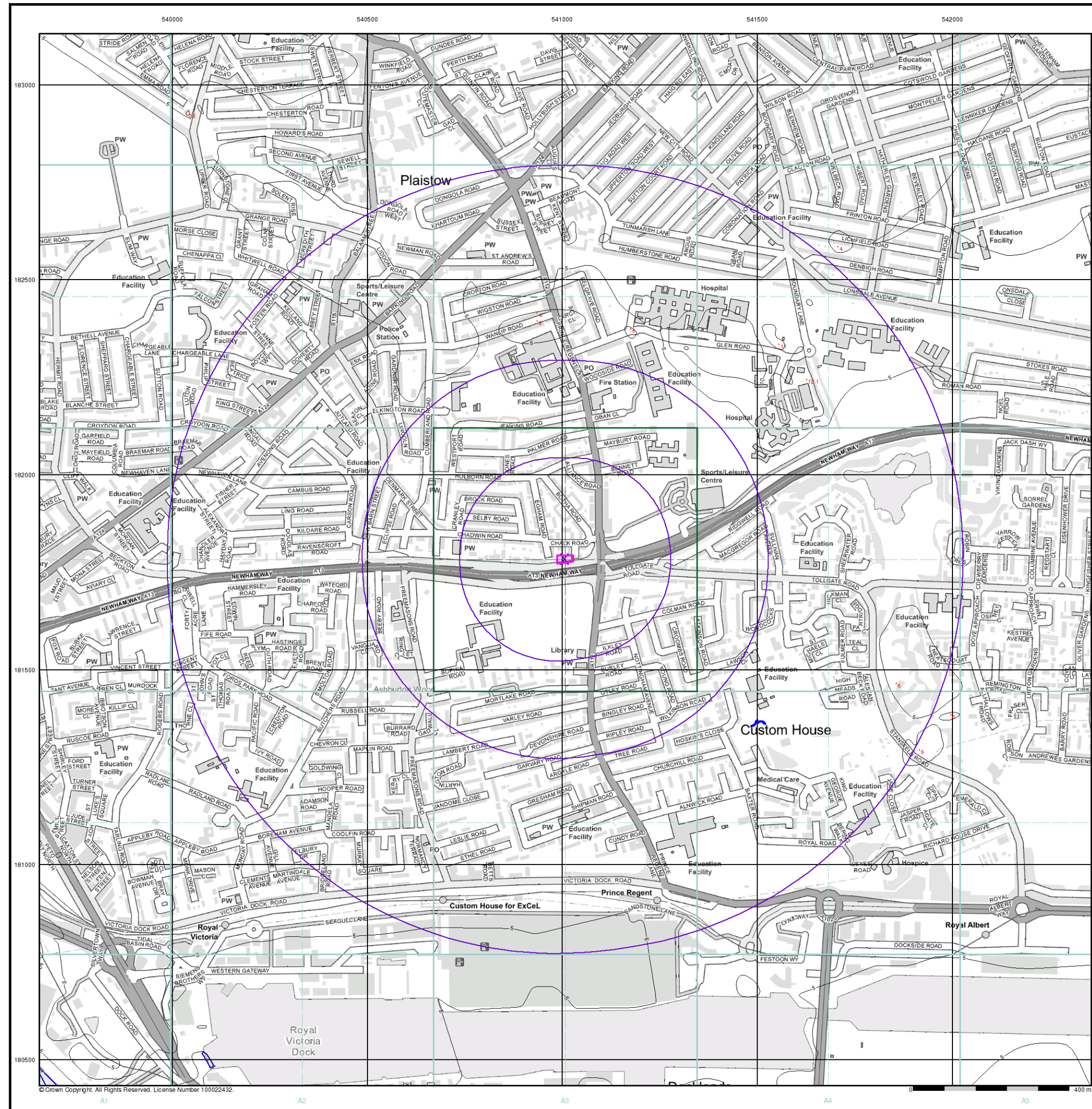
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

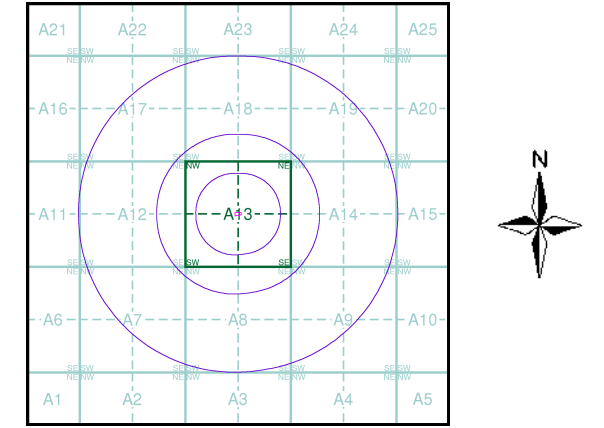
OS Water Network Data

- | | |
|--------------|-------------------------|
| Canal | Drain |
| Reservoir | Other |
| Foreshore | Lake |
| Marsh | Transfer |
| Tidal River | Lock Or Flight Of Locks |
| Inland River | Sea |

Contours (height in meters)

- Standard Contour 105 100 95
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

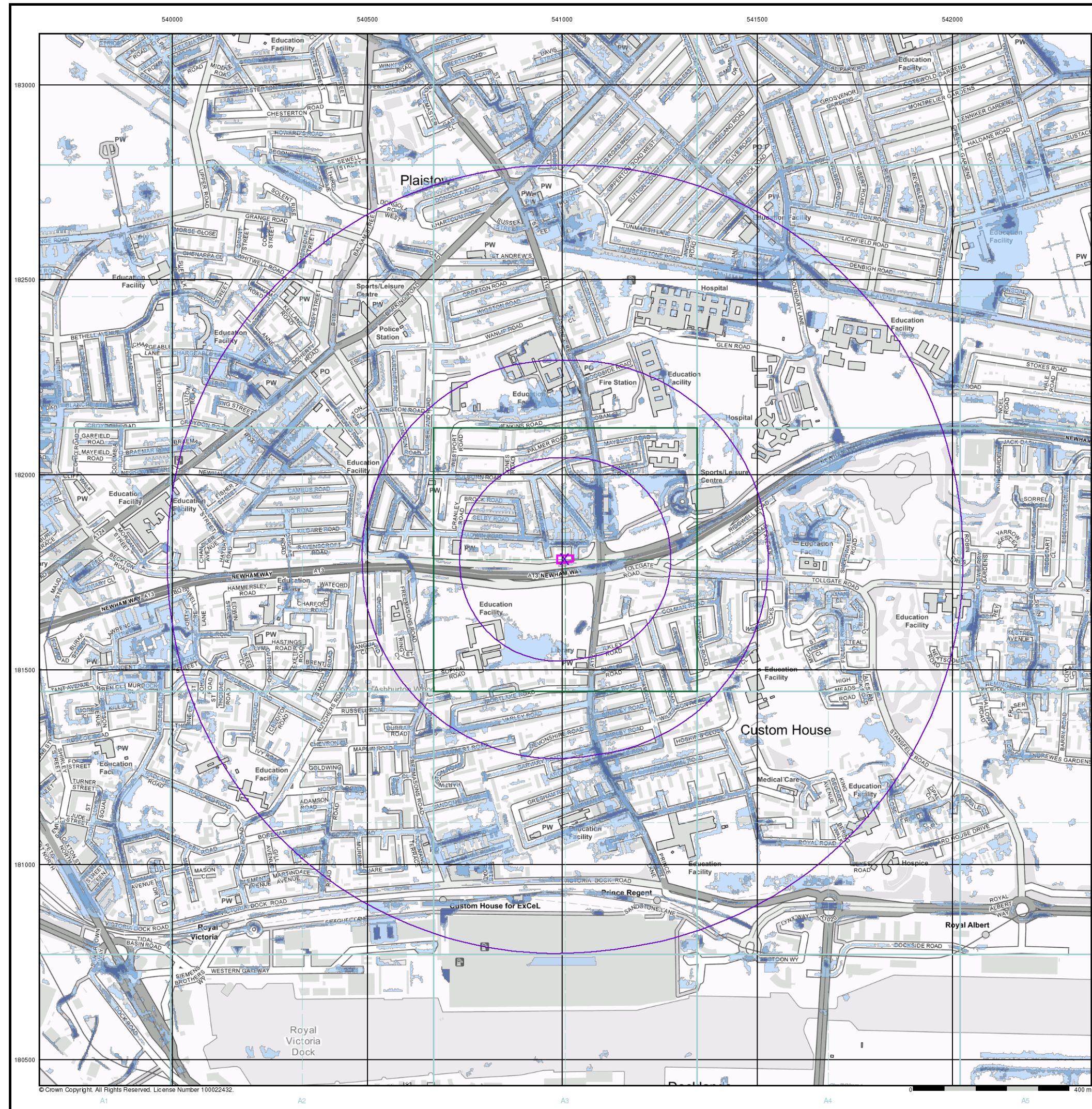
Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

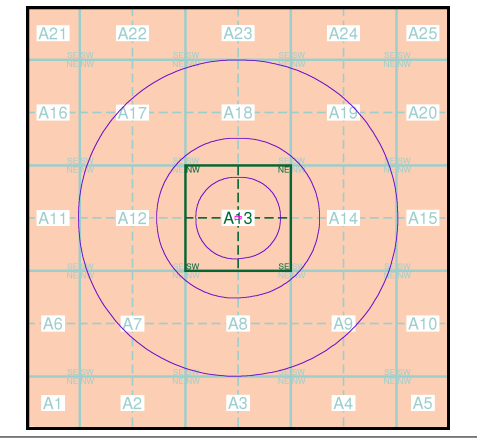
Risk of Flooding from Surface Water

- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

- See the suitability map below
- National to county
 - County to town
 - Town to street
 - Street to parcels of land
 - Property

EANRW Suitability Map - Slice A



Order Details

Order Number: 191718974_1_1
Customer Ref: 14020774
National Grid Reference: 541010, 181780
Slice: A
Site Area (Ha): 0.08
Search Buffer (m): 1000

Site Details

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Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

191718974_1_1

Customer Reference:

14020774

National Grid Reference:

541010, 181780

Slice:

A

Site Area (Ha):

0.08

Search Buffer (m):

1000

Site Details:

3, Salomons Road

LONDON

E13 8PF

Client Details:

Ms A Pugh

Arcadis Consulting (UK) Ltd

1st Floor

2 Glass Wharf

Temple Quay

Bristol

BS2 0FR

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	14
Hazardous Substances	-
Geological	19
Industrial Land Use	23
Sensitive Land Use	-
Data Currency	44
Data Suppliers	52
Useful Contacts	53

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1		Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents					
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1		1		10
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2			Yes	
Pollution Incidents to Controlled Waters	pg 2				1
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 3				6
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 4				2 (*14)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 7	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 8	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 8	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 8	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 11		Yes	n/a	n/a
Areas Benefiting from Flood Defences	pg 13	Yes		n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 13				3

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 14			1	
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 14				1
Local Authority Landfill Coverage	pg 14	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 14			1	1
Potentially Infilled Land (Water)	pg 14		9	19	51
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 18			1	
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 19	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 19				Yes
BGS Recorded Mineral Sites	pg 19			1	
BGS Urban Soil Chemistry	pg 19		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 21	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 22		Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 22	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 22	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 22	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 22	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 23		5	12	126
Fuel Station Entries	pg 35		1		2
Points of Interest - Commercial Services	pg 35		1	5	47
Points of Interest - Education and Health	pg 39				5
Points of Interest - Manufacturing and Production	pg 40				6
Points of Interest - Public Infrastructure	pg 40			1	11
Points of Interest - Recreational and Environmental	pg 41		1	3	22
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (N)	161	1	540950 181950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	450	1	541300 182150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	463	1	541100 182250
1	Local Authority Pollution Prevention and Controls Name: Shell Park Garage Location: 387 Newham Way, LONDON, E16 4ED Authority: London Borough of Newham, Environmental Health Department Permit Reference: Not Given Dated: 7th December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Authorisation revoked Positional Accuracy: Manually positioned to the address or location	A13NW (W)	13	2	540974 181792
2	Local Authority Pollution Prevention and Controls Name: Bp Connect Newham Way Filling Station Location: Newham Way, Canning Town, London, E16 1qx Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC-106/10 Dated: 5th October 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Manually positioned to the address or location	A12SE (W)	517	2	540473 181727
3	Local Authority Pollution Prevention and Controls Name: Kilnbridge Construction Ltd Location: McDermot House, 1A Wanlip Road, LONDON, E13 8QP Authority: London Borough of Newham, Environmental Health Department Permit Reference: Not Given Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG3/15 Mineral drying and roadstone coating processes Status: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location	A18SW (NW)	609	2	540698 182329
4	Local Authority Pollution Prevention and Controls Name: Spiralyx (UK) Ltd Location: Celon Mills, Russell Road, LONDON, E16 3QT Authority: London Borough of Newham, Environmental Health Department Permit Reference: EH/AAA/TN/4.00/023 Dated: 1st November 1994 Process Type: Local Authority Air Pollution Control Description: PG6/33 Wood coating Status: Authorisation revoked Positional Accuracy: Manually positioned to the road within the address or location	A7NE (SW)	622	2	540494 181394
5	Local Authority Pollution Prevention and Controls Name: Newham General Hospital Location: Glen Road, Plaistow, LONDON, E13 8SL Authority: London Borough of Newham, Environmental Health Department Permit Reference: EH/AAA/DT/4.00/013 Dated: 1st October 1993 Process Type: Local Authority Pollution Prevention and Control Description: Part B process (no specific reference) Status: Authorisation revoked Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	2	541305 182418
6	Local Authority Pollution Prevention and Controls Name: Top Spot Dry Cleaners Location: 35 Prince Regent Lane, London, E13 8rh Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 137/12 Dated: 21st September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location	A18NW (N)	714	2	540971 182507

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	Local Authority Pollution Prevention and Controls Name: Abbey Dry Cleaners Location: 402 Barking Road, London, E13 8hj Authority: London Borough of Newham, Environmental Health Department Permit Reference: Not Supplied Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Application Refused Or Cancelled Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	744	2	540478 182335
8	Local Authority Pollution Prevention and Controls Name: Clothing Care Location: 358 Barking Road, London, E13 8hl Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 155/12 Dated: 21st September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	782	2	540348 182243
9	Local Authority Pollution Prevention and Controls Name: Sams Dry Cleaners Location: 15 Freemasons Road, London, E16 3ar Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 150/12 Dated: 21st September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location	A7SE (SW)	815	2	540664 181024
10	Local Authority Pollution Prevention and Controls Name: Star Service Station Location: 306 Barking Road, LONDON, E13 8HL Authority: London Borough of Newham, Environmental Health Department Permit Reference: NOT GIVEN Dated: 23rd September 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Authorisation revoked Positional Accuracy: Automatically positioned to the address	A17SW (NW)	816	2	540241 182123
11	Local Authority Pollution Prevention and Controls Name: Newham Dry Cleaners Location: 251 Barking Road, London, E13 8eq Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 138/12 Dated: 21st September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location	A12NW (W)	975	2	540045 182046
	Nearest Surface Water Feature	A18SW (N)	391	-	540859 182162
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Toll Road, BECKTON Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 14th April 1996 Incident Reference: N2960253 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (E)	781	3	541800 181900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Newham General Hospital, Glen Road, Plaistow, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: CD7639 Dated: 7th September 2009 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Initial variation to an authorisation under RSA Status: Application has been authorised and any conditions apply to the operator Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Newham General Hospital, Glen Road, Plaistow, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: CD7612 Dated: 7th September 2009 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Application has been authorised and any conditions apply to the operator Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Newham General Hospital, Glen Road, Plaistow, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: CD4664 Dated: 7th April 2009 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Newham General Hospital, Glen Road, Plaistow, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: CD4656 Dated: 7th April 2009 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Minor variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Glen Road, PLAISTOW, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: By7946 Dated: 22nd February 2005 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418
13	Registered Radioactive Substances Name: Newham University Hospital Nhs Trust Location: Glen Road, PLAISTOW, LONDON, E13 8SL Authority: Environment Agency, Thames Region Permit Reference: By7989 Dated: 22nd February 2005 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	3	541305 182418

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	Water Abstractions Operator: London Borough Of Newham Licence Number: 08/37/54/0042 Permit Version: 101 Location: Beckton District Park North, Newham - Borehole Authority: Environment Agency, Thames Region Abstraction: Amenity: Make-Up Or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Beckton District Park North, Newham Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th September 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NE (E)	897	3	541900 182000
14	Water Abstractions Operator: London Borough Of Newham Licence Number: 08/37/54/0042 Permit Version: 100 Location: Beckton District Park North, Newham - Borehole Authority: Environment Agency, Thames Region Abstraction: Amenity: Make-Up Or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 655 Yearly Rate (m3): 36368 Details: Beckton District Park North, Newham Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NE (E)	897	3	541900 182000
	Water Abstractions Operator: Meadowshire Ltd Licence Number: Th/037/0054/001 Permit Version: 1 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th May 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	1251	3	540280 180740
	Water Abstractions Operator: Oxygen Property Management Limited Licence Number: Th/037/0054/014 Permit Version: 2 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th January 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	1269	3	540248 180741

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Meadowshire Ltd Licence Number: Th/037/0054/014 Permit Version: 1 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 20th May 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	1269	3	540248 180741
	Water Abstractions Operator: Bp Oil Uk Limited Licence Number: 08/37/54/0053 Permit Version: 1 Location: Borehole 'A' At Upton Park Filling Station, East Ham, London Authority: Environment Agency, Thames Region Abstraction: Environmental: Pump & Treat: Pollution Remediation Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Park Filling Station, East Ham, London. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A24NE (NE)	1831	3	541990 183350
	Water Abstractions Operator: Bp Oil Uk Limited Licence Number: 08/37/54/0053 Permit Version: 1 Location: Borehole 'B' At Upton Park Filling Station, East Ham, London Authority: Environment Agency, Thames Region Abstraction: Environmental: Pump & Treat: Pollution Remediation Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Park Filling Station, East Ham, London. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A24NE (NE)	1831	3	541990 183350
	Water Abstractions Operator: Bp Oil Uk Limited Licence Number: 08/37/54/0053 Permit Version: 1 Location: Borehole 'C' At Upton Park Filling Station, East Ham, London Authority: Environment Agency, Thames Region Abstraction: Environmental: Pump & Treat: Pollution Remediation Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Park Filling Station, East Ham, London. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A24NE (NE)	1831	3	541990 183350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Pura Foods Limited Licence Number: 29/38/09/0138 Permit Version: 101 Location: Bow Creek Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): 982 Yearly Rate (m3): 240938 Details: Glasshouse Wharf, Orchard Place, Blackwall, Tower Hamlets, London, E14 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1877	3	539200 181200
	Water Abstractions Operator: Blossom And Browne'S Sycamore Laundry Licence Number: 08/37/54/0055/R01 Permit Version: 3 Location: Borehole 'A' At Sycamore Laundry, Upton Park, London Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 407-413 Green Street, Upton Park, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th August 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1907	3	541360 183670
	Water Abstractions Operator: Blossom And Browne'S Sycamore Laundry Licence Number: 08/37/54/0055/R01 Permit Version: 1 Location: Borehole 'A' At Sycamore Laundry, Upton Park, London Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 407-413 Green Street, Upton Park, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1907	3	541360 183670
	Water Abstractions Operator: Blossom And Browne'S Sycamore Laundry Licence Number: 08/37/54/0055/R01 Permit Version: 2 Location: Borehole 'A' At Sycamore Laundry, Upton Park, London Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 407-413 Green Street, Upton Park, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1907	3	541360 183670

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Blossom And Browne'S Sycamore Laundry Licence Number: 08/37/54/0055 Permit Version: 1 Location: Borehole 'A' At Sycamore Laundry, Upton Park, London Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 407-413 Green Street, Upton Park, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1907	3	541360 183670
	Water Abstractions Operator: B And B'S Sycamore Laundry Licence Number: 08/37/54/0055 Permit Version: 1 Location: Borehole 'A' At Sycamore Laundry, Upton Park, London Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 407-413 Green Street, Upton Park, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1907	3	541360 183670
	Water Abstractions Operator: Lee Valley Regional Park Authority Licence Number: 29/38/09/0162 Permit Version: 101 Location: Limmo Peninsula Authority: Environment Agency, Thames Region Abstraction: Environmental: Non-remedial River/Wetland Support: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Limmo Peninsula, Canning Town, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th August 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1953	3	539130 181170
	Water Abstractions Operator: Lee Valley Regional Park Authority Licence Number: 29/38/09/0162 Permit Version: 100 Location: Limmo Peninsula Authority: Environment Agency, Thames Region Abstraction: Environmental: Non-remedial River/Wetland Support: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 146 Yearly Rate (m3): 30000 Details: Limmo Peninsula, Canning Town, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1953	3	539130 181170
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 40 Thames Estuary Scale: 1:100,000	A13NW (NW)	0	3	541006 181784
	Drift Deposits None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A13NW (NW)	0	4	541006 181784
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NW (NW)	0	4	541006 181784
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13NE (NE)	0	3	541012 181790
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	0	3	541006 181784
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	11	3	540976 181778
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	24	3	541051 181781
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	37	3	540954 181758
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	50	3	541015 181726
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (W)	72	3	540915 181796
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	74	3	540915 181757
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	76	3	541077 181721
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	77	3	540912 181757
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (W)	77	3	540910 181796
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	83	3	541083 181717
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	87	3	540901 181766
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	89	3	541116 181771
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (E)	89	3	541116 181794

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	91	3	541116 181759
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (E)	93	3	541117 181754
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (E)	100	3	541126 181781
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	104	3	541114 181721
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (E)	113	3	541138 181814
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	117	3	541127 181718
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (W)	123	3	540865 181798
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	126	3	541150 181753
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (W)	132	3	540855 181798
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (E)	133	3	541157 181752
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	135	3	541159 181752
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (E)	146	3	541173 181800
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (E)	149	3	541169 181734
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	152	3	540842 181729
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (W)	156	3	540831 181789
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	161	3	540839 181709

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	167	3	540828 181721
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (W)	173	3	540814 181791
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	192	3	540807 181707
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	199	3	540788 181776
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	202	3	540796 181708
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	204	3	540793 181711
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	206	3	540791 181710
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	208	3	540871 181965
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	208	3	540788 181711
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	212	3	540784 181713
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (NW)	220	3	540878 181984
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	230	3	540877 181994
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (E)	234	3	541261 181771
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (W)	235	3	540752 181788
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	240	3	540809 181611
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	243	3	540748 181729

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (E)	245	3	541271 181811
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (W)	245	3	540742 181790
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	248	3	540744 181729
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	249	3	540742 181730
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (NE)	4	3	541029 181796
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	70	3	541028 181706
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	74	3	540958 181704
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	118	3	540990 181654
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	128	3	541025 181647
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	130	3	540924 181659
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	133	3	540963 181642
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (S)	133	3	540969 181640
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (S)	133	3	540961 181642
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	140	3	541083 181649
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	156	3	541082 181633
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	171	3	540849 181671

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	182	3	541068 181601
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	186	3	541080 181601
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	197	3	540824 181663
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	202	3	540818 181663
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	204	3	540813 181666
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	204	3	540846 181625
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	207	3	541165 181624
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	214	3	541078 181571
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	225	3	541045 181553
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	226	3	541125 181574
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	227	3	541167 181599
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	232	3	541143 181577
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	232	3	541128 181570
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	239	3	541217 181634
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	240	3	541103 181551
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	248	3	540792 181621

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	249	3	541136 181554
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	249	3	540790 181621
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SE (SE)	250	3	541140 181556
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NW (NW)	0	3	541006 181784
	Flood Water Storage Areas None				
	Flood Defences None				
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NW (SE)	623	5	541485 181355
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NW (SE)	625	5	541498 181368
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 26.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NW (SE)	626	5	541496 181363

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	Historical Landfill Sites Licence Holder: Not Supplied Location: Newham Name: Prince Regent Lane Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL34560 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Not Supplied Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: Not Supplied	A18SE (NE)	453	3	541231 182197
19	Licensed Waste Management Facilities (Locations) Licence Number: 104139 Location: 66 New Barn Street, Plaistow, London, E13 8JW Operator Name: Universal Autoparts Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Vehicle Depollution Facility <5000 tps Licence Status: Issued Issued: 4th May 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NE (W)	527	3	540500 181994
	Local Authority Landfill Coverage Name: London Borough of Newham - Has supplied landfill data		0	6	541006 181784
20	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1996	A18SE (N)	377	-	541130 182155
21	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A12SW (W)	927	-	540065 181686
22	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (W)	34	-	540953 181772
23	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (NW)	50	-	540942 181815
24	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SE (S)	72	-	541013 181703
25	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	78	-	540959 181700
26	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A13NE (NE)	125	-	541141 181845
27	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	156	-	540860 181683
28	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	194	-	540861 181626
29	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A13SE (SE)	212	-	541130 181593
30	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	241	-	540846 181577

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SE (S)	254	-	541011 181518
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	264	-	540843 181551
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (W)	270	-	540717 181803
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (W)	276	-	540725 181880
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1946	A13NE (E)	279	-	541305 181816
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SW (SW)	296	-	540842 181514
37	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A8NE (S)	334	-	541050 181444
38	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13SE (SE)	353	-	541279 181532
39	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12NE (W)	354	-	540638 181852
40	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A8NE (S)	387	-	541040 181389
41	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	393	-	541148 181404
42	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1946	A14NW (E)	410	-	541437 181786
43	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A8NW (S)	416	-	540971 181357
44	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A8NE (S)	435	-	541057 181343
45	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A14SW (SE)	441	-	541431 181603
46	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SE (SW)	459	-	540608 181514
47	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A14SW (SE)	461	-	541355 181455
48	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NW (S)	496	-	540917 181282
49	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	497	-	541173 181304
50	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	506	-	541079 181274
51	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14SW (SE)	508	-	541477 181543

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A12NE (W)	515	-	540483 181898
53	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	524	-	541200 181283
54	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	539	-	541095 181243
55	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14SW (E)	545	-	541568 181717
56	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SE (W)	551	-	540456 181626
57	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	553	-	541083 181228
58	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NW (E)	556	-	541547 181992
59	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NW (E)	579	-	541579 181965
60	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1920	A17SE (NW)	582	-	540587 182216
61	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A9NW (SE)	584	-	541429 181354
62	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	592	-	541129 181196
63	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A12NE (W)	613	-	540374 181806
64	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A9NW (SE)	630	-	541505 181368
65	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SE (W)	642	-	540347 181731
66	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SE (W)	648	-	540341 181731
67	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NW (S)	662	-	540848 181125
68	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SE (SW)	670	-	540373 181505
69	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8NE (S)	672	-	541172 181122
70	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A19SW (NE)	690	-	541628 182132
71	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12NW (W)	713	-	540323 182053
72	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8SE (S)	716	-	541010 181057

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7NE (SW)	738	-	540616 181135
74	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A8SE (S)	741	-	541176 181052
75	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A9NW (SE)	747	-	541488 181191
76	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A17SE (NW)	760	-	540365 182230
77	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14SE (E)	760	-	541769 181613
78	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12NW (W)	772	-	540236 181968
79	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A19SE (NE)	778	-	541716 182153
80	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7SE (SW)	785	-	540643 181067
81	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1946	A19SW (NE)	792	-	541562 182376
82	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7NE (SW)	796	-	540334 181318
83	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SW (W)	809	-	540230 181486
84	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7NE (SW)	829	-	540441 181149
85	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NE (E)	857	-	541881 181866
86	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A17SW (NW)	873	-	540188 182144
87	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NE (E)	876	-	541902 181803
88	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A9NW (SE)	880	-	541672 181180
89	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A8SE (S)	892	-	541343 180944
90	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14SE (E)	908	-	541930 181684
91	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7NW (SW)	922	-	540237 181236
92	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A19SE (NE)	934	-	541878 182178
93	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NE (E)	936	-	541963 181812

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
94	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18NE (N)	942	-	541118 182731
95	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A14NE (E)	953	-	541961 181981
96	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A7NW (SW)	967	-	540182 181238
97	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A17SW (NW)	972	-	540174 182326
98	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SW (W)	977	-	540037 181545
99	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A17SW (NW)	981	-	540186 182358
100	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1949	A8SW (S)	994	-	541006 180779
101	Registered Waste Transfer Sites Licence Holder: P F Ahern & Sons Ltd Licence Reference: DL028 Site Location: Tollgate Road, BECKTON, London, E6 Operator Location: 228 Crow Lane, ROMFORD, Essex, RM7 0HA Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st January 1978 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Construction And Demolition Wastes House. + Com. Untreated Waste Ind. Non-Haz. Inert, Non-Flammable Ind. Non-Haz. Potentially Combustible Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A14SW (E)	480	3	541500 181700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	A13NW (NW)	0	1	541006 181784
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: no data Chromium Concentration: 60 - 90 mg/kg Lead Concentration: no data Nickel Concentration: 15 - 30 mg/kg	A9SW (SE)	999	1	541588 180952
102	BGS Recorded Mineral Sites Site Name: Prince Regent Lane Gravel Pit Location: Newham, West Ham, Greater London Source: British Geological Survey, National Geoscience Information Service Reference: 182090 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Wolstonian Geology: Taplow Gravel Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A18SE (NE)	439	1	541196 182198
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 540949, 181590 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 25.00 mg/kg Cadmium Measured Concentration: 0.80 mg/kg Chromium Measured Concentration: 91.20 mg/kg Lead Measured Concentration: 305.00 mg/kg Nickel Measured Concentration: 48.70 mg/kg	A13SW (S)	186	1	540949 181590
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541252, 181903 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 23.60 mg/kg Cadmium Measured Concentration: 0.80 mg/kg Chromium Measured Concentration: 80.10 mg/kg Lead Measured Concentration: 370.30 mg/kg Nickel Measured Concentration: 34.50 mg/kg	A13NE (NE)	251	1	541252 181903
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 540865, 182259 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 18.30 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 71.00 mg/kg Lead Measured Concentration: 357.60 mg/kg Nickel Measured Concentration: 26.40 mg/kg	A18SW (N)	482	1	540865 182259

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541283, 181196 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 17.40 mg/kg Concentration: Cadmium Measured 0.50 mg/kg Concentration: Chromium Measured 95.20 mg/kg Concentration: Lead Measured 228.10 mg/kg Concentration: Nickel Measured 31.00 mg/kg Concentration:	A8NE (SE)	636	1	541283 181196
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541156, 182417 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 85.80 mg/kg Concentration: Cadmium Measured 0.40 mg/kg Concentration: Chromium Measured 353.20 mg/kg Concentration: Lead Measured 1009.90 mg/kg Concentration: Nickel Measured 43.60 mg/kg Concentration:	A18SE (N)	637	1	541156 182417
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 540450, 182217 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 18.90 mg/kg Concentration: Cadmium Measured 1.60 mg/kg Concentration: Chromium Measured 104.30 mg/kg Concentration: Lead Measured 809.60 mg/kg Concentration: Nickel Measured 33.30 mg/kg Concentration:	A17SE (NW)	684	1	540450 182217
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 540291, 181597 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 16.90 mg/kg Concentration: Cadmium Measured 13.10 mg/kg Concentration: Chromium Measured 75.00 mg/kg Concentration: Lead Measured 285.90 mg/kg Concentration: Nickel Measured 30.30 mg/kg Concentration:	A12SW (W)	718	1	540291 181597
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541621, 181350 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 18.80 mg/kg Concentration: Cadmium Measured 0.20 mg/kg Concentration: Chromium Measured 78.70 mg/kg Concentration: Lead Measured 114.90 mg/kg Concentration: Nickel Measured 27.90 mg/kg Concentration:	A9NW (SE)	732	1	541621 181350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 540659, 181110 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 19.50 mg/kg Concentration: Cadmium Measured 1.00 mg/kg Concentration: Chromium Measured 60.80 mg/kg Concentration: Lead Measured 711.90 mg/kg Concentration: Nickel Measured 32.20 mg/kg Concentration:	A7NE (SW)	739	1	540659 181110
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541559, 182314 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 69.90 mg/kg Concentration: Cadmium Measured 2.30 mg/kg Concentration: Chromium Measured 276.80 mg/kg Concentration: Lead Measured 1416.00 mg/kg Concentration: Nickel Measured 47.20 mg/kg Concentration:	A19SW (NE)	745	1	541559 182314
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 541835, 181655 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 12.30 mg/kg Concentration: Cadmium Measured 0.30 mg/kg Concentration: Chromium Measured 61.80 mg/kg Concentration: Lead Measured 51.80 mg/kg Concentration: Nickel Measured 15.20 mg/kg Concentration:	A14SE (E)	817	1	541835 181655
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: London Count Id: 7209 Arsenic Minimum 1.00 mg/kg Concentration: Arsenic Average 17.00 mg/kg Concentration: Arsenic Maximum 161.00 mg/kg Concentration: Cadmium Minimum 0.10 mg/kg Concentration: Cadmium Average 0.90 mg/kg Concentration: Cadmium Maximum 165.20 mg/kg Concentration: Chromium Minimum 13.00 mg/kg Concentration: Chromium Average 79.00 mg/kg Concentration: Chromium Maximum 2094.00 mg/kg Concentration: Lead Minimum 11.00 mg/kg Concentration: Lead Average 280.00 mg/kg Concentration: Lead Maximum 10000.00 mg/kg Concentration: Nickel Minimum 2.00 mg/kg Concentration: Nickel Average 28.00 mg/kg Concentration: Nickel Maximum 506.00 mg/kg Concentration:	A13NW (NW)	0	1	541006 181784

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	190	1	540941 181977
	Potential for Compressible Ground Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	190	1	540941 181977
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	190	1	540941 181977
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	190	1	540941 181977
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	225	1	541025 182018
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	541006 181784

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
103	Contemporary Trade Directory Entries Name: Park Garage Location: 387 Newham Way, London, E16 4ED Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13NW (W)	11	-	540976 181792
103	Contemporary Trade Directory Entries Name: Shell (UK) Ltd Location: 387 Newham Way, London, E16 4ED Classification: Petrol Filling Stations - 24 Hour Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13NW (W)	12	-	540975 181793
104	Contemporary Trade Directory Entries Name: Labtos Location: A, 9, Chalk Road, London, E13 8PE Classification: Charcoal Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (NE)	25	-	541045 181809
105	Contemporary Trade Directory Entries Name: Crystal Clear Cleaning Location: 30, Egham Road, London, E13 8PD Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (N)	104	-	540965 181894
106	Contemporary Trade Directory Entries Name: Auto Modz Location: 273, Prince Regent Lane, London, E13 8SD Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A13NE (NE)	111	-	541111 181866
107	Contemporary Trade Directory Entries Name: Shine On Clean Location: 157, Denmark Street, London, E13 8JX Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (W)	299	-	540689 181812
108	Contemporary Trade Directory Entries Name: Clothes Care Location: 284, Prince Regent Lane, London, E16 3JH Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (S)	387	-	541056 181391
109	Contemporary Trade Directory Entries Name: A C L Recovery Location: 12, MacGregor Road, London, E16 3LL Classification: Car Breakdown & Recovery Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	391	-	541418 181779
110	Contemporary Trade Directory Entries Name: Combat Pest Control Location: 1, Eclipse Road, London, E13 8LX Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	423	-	540578 181901
111	Contemporary Trade Directory Entries Name: Bay Distribution Ltd Location: 203, Freemasons Road, LONDON, E16 3PG Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12SE (W)	424	-	540567 181722
111	Contemporary Trade Directory Entries Name: East London Beds Location: 203 Freemasons Rd, London, E16 3PG Classification: Bed & Mattress Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12SE (W)	424	-	540567 181722
111	Contemporary Trade Directory Entries Name: Like A Boss Car Centre Ltd Location: 203, Freemasons Road, London, E16 3PG Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A12SE (W)	428	-	540563 181720

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
112	Contemporary Trade Directory Entries Name: Amigo Rubbish Clearance Location: 25, MacGregor Road, London, E16 3LL Classification: Rubbish Clearance Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NW (E)	429	-	541453 181837
113	Contemporary Trade Directory Entries Name: R A Autos Location: Beeby Road, London, E16 1QJ Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A12SE (SW)	439	-	540581 181606
114	Contemporary Trade Directory Entries Name: Excel Location: 53 Parking Road, London, E13 8SE Classification: Builders' Merchants Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A18SE (N)	451	-	541051 182243
115	Contemporary Trade Directory Entries Name: Southern Domestic Ltd Location: 99, Cumberland Road, London, E13 8LH Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	491	-	540673 182171
116	Contemporary Trade Directory Entries Name: Remeco Oven Clean Location: 52, Wilkinson Road, London, E16 3RJ Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	492	-	541346 181404
117	Contemporary Trade Directory Entries Name: East London & West Essex Oven Cleaning Location: 138, New Barn Street, London, E13 8JW Classification: Oven cleaning Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	504	-	540496 181907
118	Contemporary Trade Directory Entries Name: Altodigital Location: Unit D, Mint Business Park, 41, Butchers Road, London, E16 1PW Classification: Photocopiers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	504	-	540508 181616
118	Contemporary Trade Directory Entries Name: Quadtronix Business Systems Location: Unit D, Mint Business Park, 41 Butchers Rd, London, E16 1PW Classification: Office Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12SE (W)	507	-	540506 181614
118	Contemporary Trade Directory Entries Name: Classic Cleaning Location: Unit C2, Mint Business Park, 41, Butchers Road, London, E16 1PW Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	514	-	540498 181616
118	Contemporary Trade Directory Entries Name: Quadtronix Location: Unit C2, Mint Business Park, 41, Butchers Road, London, E16 1PW Classification: Office Equipment Servicing & Maintenance Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	514	-	540498 181616
118	Contemporary Trade Directory Entries Name: Reflex Location: Unit 1/C, Mint Business Park, 41, Butchers Road, London, E16 1PW Classification: T-Shirts Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	520	-	540492 181616
118	Contemporary Trade Directory Entries Name: Reflex Transport Location: Unit 1/C, Mint Business Park, 41, Butchers Road, London, E16 1PW Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	520	-	540492 181616

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
119	Contemporary Trade Directory Entries Name: B P Service Station Location: Newham Way, London, E16 1QX Classification: Petrol Filling Stations Status: Active Positional Accuracy: Automatically positioned to the address	A12SE (W)	517	-	540473 181727
119	Contemporary Trade Directory Entries Name: Bp Express Shopping Location: Newham Way, London, E16 1QX Classification: Petrol Filling Stations - 24 Hour Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (W)	517	-	540473 181727
120	Contemporary Trade Directory Entries Name: Universal Auto parts Ltd Location: 66-68, New Barn Street, London, E13 8JW Classification: Car Breakdown & Recovery Services Status: Active Positional Accuracy: Automatically positioned to the address	A12NE (NW)	522	-	540514 182012
121	Contemporary Trade Directory Entries Name: Custom House M O T Location: 117, Freemasons Road, London, E16 3PH Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A7NE (SW)	546	-	540605 181382
121	Contemporary Trade Directory Entries Name: Docklands M O T Centre Location: 117, Freemasons Road, London, E16 3PH Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A7NE (SW)	546	-	540604 181383
121	Contemporary Trade Directory Entries Name: Victory Car Sales Location: Freemasons Road, London, E16 3PH Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	550	-	540599 181383
121	Contemporary Trade Directory Entries Name: M O T Docklands Ltd Location: Freemasons Road, London, E16 3PH Classification: Mot Testing Centres Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	550	-	540599 181383
122	Contemporary Trade Directory Entries Name: Peter Shevlin & Son Location: 64, Cumberland Road, London, E13 8LQ Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	571	-	540644 182250
123	Contemporary Trade Directory Entries Name: Brilliant Cleaning & Maintenance Ltd Location: 133, Ling Road, London, E16 4AW Classification: Boat Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	590	-	540412 181925
123	Contemporary Trade Directory Entries Name: Brilliant Cleaning Location: 133, Ling Road, London, E16 4AW Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	590	-	540412 181925
124	Contemporary Trade Directory Entries Name: Actual Support Services Ltd Location: 79 Prince Regent Lane, London, E13 8RW Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	602	-	541008 182395
124	Contemporary Trade Directory Entries Name: Actual Support Services Ltd Location: 79, Prince Regent Lane, LONDON, E13 8RW Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	612	-	541038 182405

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	Contemporary Trade Directory Entries Name: Solary Location: 27, Wanlip Road, London, E13 8QR Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (N)	603	-	540815 182371
125	Contemporary Trade Directory Entries Name: David Alleyne Location: 31, Wanlip Road, London, E13 8QR Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (N)	604	-	540824 182374
126	Contemporary Trade Directory Entries Name: M Y Chauffeur London Location: 68, Russell Road, London, E16 3QS Classification: Car Engine Tuning & Diagnostic Services Status: Active Positional Accuracy: Automatically positioned to the address	A7NE (SW)	634	-	540501 181365
127	Contemporary Trade Directory Entries Name: Newham University Hospital Location: Glen Road, London, E13 8SL Classification: Hospitals Status: Active Positional Accuracy: Automatically positioned to the address	A18SE (NE)	642	-	541259 182391
128	Contemporary Trade Directory Entries Name: Fantastic Services Custom House Location: 9, Hartington Road, London, E16 3NP Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NW (SW)	643	-	540708 181193
128	Contemporary Trade Directory Entries Name: A & G Appliances Location: 21, Hartington Road, LONDON, E16 3NP Classification: Washing Machines - Servicing & Repairs Status: Active Positional Accuracy: Automatically positioned to the address	A7NE (SW)	654	-	540668 181202
128	Contemporary Trade Directory Entries Name: A & G Appliances Services Ltd Location: 21, Hartington Road, London, E16 3NP Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	654	-	540668 181202
129	Contemporary Trade Directory Entries Name: Dash Express Ltd Location: 20, Sheerwater Road, London, E16 3SU Classification: Electrical Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NW (E)	655	-	541677 181868
130	Contemporary Trade Directory Entries Name: Eurofit Location: 50, Prince Regent Lane, London, E13 8QQ Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (N)	659	-	540952 182451
131	Contemporary Trade Directory Entries Name: Rockprint Location: 60, Kildare Road, London, E16 4AQ Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	674	-	540316 181844
131	Contemporary Trade Directory Entries Name: Rockprint.Co.Uk Location: 60, Kildare Road, London, E16 4AQ Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	674	-	540316 181844
131	Contemporary Trade Directory Entries Name: Goldhold Cleaning Services Location: 55, Ravenscroft Road, London, E16 4AF Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	681	-	540307 181824

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
132	Contemporary Trade Directory Entries Name: George Barclay Location: 2b, New Barn Street, London, E13 8JA Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address	A17SE (NW)	679	-	540462 182223
133	Contemporary Trade Directory Entries Name: Coubro & Scrutton Ltd Location: 23, Esk Road, London, E13 8LJ Classification: Lifting Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	682	-	540586 182345
133	Contemporary Trade Directory Entries Name: P C T Group Ltd Location: 23, Esk Road, London, E13 8LJ Classification: Lifting Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	682	-	540586 182345
134	Contemporary Trade Directory Entries Name: Compass Location: Glen Road, London, E13 8SL Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (NE)	684	-	541305 182418
135	Contemporary Trade Directory Entries Name: A-Z Carpet & Uphostery Location: 167, Alnwick Road, London, E16 3EY Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	692	-	541382 181184
136	Contemporary Trade Directory Entries Name: Abbey Commercials Location: 1-3, New Barn Street, London, E13 8JZ Classification: Commercial Vehicle Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	704	-	540470 182270
136	Contemporary Trade Directory Entries Name: Abbey Tyres Location: 2, New Barn Street, London, E13 8JA Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	712	-	540444 182253
136	Contemporary Trade Directory Entries Name: Abbey Commercials Location: 1, Esk Road, London, E13 8LJ Classification: Commercial Vehicle Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	732	-	540457 182298
137	Contemporary Trade Directory Entries Name: Subryan Overall Services Ltd Location: 7, Kerry Close, London, E16 3PL Classification: Boilers - Servicing, Replacements & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	705	-	540602 181182
138	Contemporary Trade Directory Entries Name: Blanche Cleary Location: 39, Prince Regent Lane, London, E13 8RH Classification: Caravans - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	706	-	540974 182498
138	Contemporary Trade Directory Entries Name: Top Spot Location: 35, Prince Regent Lane, London, E13 8RH Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	716	-	540974 182509
139	Contemporary Trade Directory Entries Name: Just Ford Location: Crofton Rd, London, E13 8QS Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A18SW (NW)	713	-	540710 182450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
139	Contemporary Trade Directory Entries Name: Cumberland Autos Location: 1a, Cumberland Road, London, E13 8LH Classification: Car Body Repairs Status: Inactive Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	732	-	540661 182449
139	Contemporary Trade Directory Entries Name: Cumberland Autos Location: 1, Cumberland Road, London, E13 8LH Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A17SE (NW)	734	-	540660 182450
139	Contemporary Trade Directory Entries Name: lit Multi Car Spares & Mot Ltd Location: 1, Cumberland Road, London, E13 8LH Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A17SE (NW)	734	-	540660 182450
140	Contemporary Trade Directory Entries Name: Able Rubbish Location: 14, Berwick Road, London, E16 3DS Classification: Rubbish Clearance Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SW (S)	738	-	540925 181037
141	Contemporary Trade Directory Entries Name: The Rubbish Man With The Van Location: 23 King George Av, London, E16 3HP Classification: Rubbish Clearance Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	740	-	541532 181237
142	Contemporary Trade Directory Entries Name: Auto Village 24 Hrs Location: 450, Barking Road, London, E13 8HJ Classification: Salvage Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	744	-	540586 182420
142	Contemporary Trade Directory Entries Name: F1 Tyres Location: 456-458, Barking Road, London, E13 8HJ Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	748	-	540598 182431
142	Contemporary Trade Directory Entries Name: E13 Motors Location: 456, Barking Road, London, E13 8HJ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	748	-	540598 182431
142	Contemporary Trade Directory Entries Name: East London Garages Location: 423, Barking Road, London, E13 8AL Classification: Mot Testing Centres Status: Inactive Positional Accuracy: Automatically positioned to the address	A17NE (NW)	783	-	540581 182462
143	Contemporary Trade Directory Entries Name: T & T Cleaning Services Location: 5, Partridge Close, London, E16 3TB Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address	A14SE (E)	746	-	541759 181635
144	Contemporary Trade Directory Entries Name: Newham Hospital - Urgent Care Emergency Department Location: Newham Walk in Centre, Glen Road, London, E13 8SH Classification: Hospitals Status: Inactive Positional Accuracy: Automatically positioned to the address	A19SW (NE)	751	-	541438 182421
145	Contemporary Trade Directory Entries Name: Akwaaba Express Location: 47, Freemasons Road, London, E16 3PJ Classification: Cargo Handling Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	759	-	540600 181120

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
145	Contemporary Trade Directory Entries Name: Customs Cleaning Centre Location: 47, Freemasons Road, London, E16 3PJ Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	759	-	540600 181120
145	Contemporary Trade Directory Entries Name: Custom Cleaning Service Location: 47, Freemasons Road, LONDON, E16 3PJ Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	759	-	540600 181120
145	Contemporary Trade Directory Entries Name: Akwaaba Express Location: Freemasons Rd, London, E16 3PJ Classification: Cargo Handling Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A7NE (SW)	764	-	540600 181114
146	Contemporary Trade Directory Entries Name: House Cleaning Location: 29, Kildare Road, London, E16 4AJ Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	775	-	540215 181861
147	Contemporary Trade Directory Entries Name: Contingency Services (Uk) Ltd Location: 381, Barking Road, London, E13 8AL Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	777	-	540463 182367
147	Contemporary Trade Directory Entries Name: Bilal Domestic Location: 379, Barking Road, London, E13 8AL Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	781	-	540454 182364
147	Contemporary Trade Directory Entries Name: Visual Sound Communications (Uk) Ltd Location: 10, Balaam Street, London, E13 8AQ Classification: Copying & Duplicating Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	815	-	540431 182389
148	Contemporary Trade Directory Entries Name: Custom Store Location: 33, Freemasons Road, London, E16 3AR Classification: Hardware Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	778	-	540642 181075
148	Contemporary Trade Directory Entries Name: Sam'S Dry Cleaners Location: 15-19, Freemasons Road, London, E16 3AR Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	814	-	540657 181028
149	Contemporary Trade Directory Entries Name: Jet Clean Location: Barking Rd, London, E13 8QB Classification: Blast Cleaning Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A18NW (NW)	778	-	540670 182503
150	Contemporary Trade Directory Entries Name: City Demolishing Services Location: 348, Barking Road, London, E13 8HL Classification: Waste Disposal Services Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	792	-	540324 182225
151	Contemporary Trade Directory Entries Name: Immaculate Contractors Ltd Location: 344, Barking Road, London, E13 8HL Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	793	-	540317 182218

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
151	Contemporary Trade Directory Entries Name: Debron Photo Express Ltd Location: 344, Barking Road, London, E13 8HL Classification: Photographic Processors Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	794	-	540317 182218
151	Contemporary Trade Directory Entries Name: Cleaners Plaistow Location: 328a, Barking Road, London, E13 8HL Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	806	-	540285 182189
151	Contemporary Trade Directory Entries Name: Pick & Drop Dry Cleaners Location: 326, Barking Road, London, E13 8HL Classification: Dry Cleaners Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	806	-	540285 182189
151	Contemporary Trade Directory Entries Name: Quickprint Services Location: 324, Barking Road, London, E13 8HL Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	806	-	540285 182189
151	Contemporary Trade Directory Entries Name: Quick Print Services Location: 324, Barking Road, London, E13 8HL Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	806	-	540285 182189
151	Contemporary Trade Directory Entries Name: Barking Electrical Wholesalers Ltd Location: 313, Barking Road, London, E13 8EE Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	845	-	540260 182224
152	Contemporary Trade Directory Entries Name: Custom House Workers Co-Op Location: Ascension Centre Lunch Club, Ascension Church Centre, Baxter Road, London, E16 3HJ Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	799	-	541470 181113
153	Contemporary Trade Directory Entries Name: Cleaners Canning Town Location: 67, Fords Park Road, London, E16 1PP Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NW (SW)	803	-	540255 181445
154	Contemporary Trade Directory Entries Name: Texaco Location: 306, Barking Road, London, E13 8HL Classification: Petrol Filling Stations - 24 Hour Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	816	-	540241 182123
154	Contemporary Trade Directory Entries Name: Sunshine Location: 302, Barking Road, London, E13 8HL Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	844	-	540213 182130
155	Contemporary Trade Directory Entries Name: Jubilee Commercial Location: 339-341 Barking Rd, London, E13 8EE Classification: Commercial Vehicle Dealers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A17SW (NW)	826	-	540330 182294

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
156	Contemporary Trade Directory Entries Name: Newham Auto Spray Location: Unit 1 Surrey Street, London, E13 8RN Classification: Car Body Repairs Status: Active Positional Accuracy: Manually positioned within the geographical locality	A18NW (N)	827	-	540946 182619
156	Contemporary Trade Directory Entries Name: Newham Auto Spray Location: 1, Surrey Street, London, E13 8RN Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	829	-	540960 182622
156	Contemporary Trade Directory Entries Name: Falcon Carriage Co Location: 9, Prince Regent Lane, London, E13 8RH Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	861	-	540922 182651
156	Contemporary Trade Directory Entries Name: Falcon Carriage Company Location: 9, Prince Regent Lane, London, E13 8RH Classification: Car Dealers - Used Status: Active Positional Accuracy: Automatically positioned to the address	A18NW (N)	861	-	540922 182651
156	Contemporary Trade Directory Entries Name: Prince Printing & Signage Location: 12a, Prince Regent Lane, London, E13 8QG Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	870	-	540891 182658
157	Contemporary Trade Directory Entries Name: Media Access Centre Location: Coolfin Road, London, E16 3BD Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NE (SW)	827	-	540477 181121
158	Contemporary Trade Directory Entries Name: S B H Location: 42, Fife Road, London, E16 1QB Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SW (W)	842	-	540171 181570
159	Contemporary Trade Directory Entries Name: Docklands Tyres Location: 278 Victoria Dock Rd, London, E16 3BY Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A8SW (S)	847	-	540724 180967
160	Contemporary Trade Directory Entries Name: New Taz Location: 29, Balaam Street, London, E13 8EB Classification: Lawnmowers & Garden Machinery - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	854	-	540401 182413
160	Contemporary Trade Directory Entries Name: Advance Phone Warehouse (Uk) Ltd Location: 41, Balaam Street, London, E13 8EB Classification: Telecommunications Equipment & Systems Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	872	-	540406 182443
160	Contemporary Trade Directory Entries Name: London Launderettes Location: 44-46, Balaam Street, London, E13 8AQ Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address	A17NE (NW)	872	-	540436 182469
160	Contemporary Trade Directory Entries Name: Drive In Auto Fitting Centre Location: 46, Balaam Street, London, E13 8AQ Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A17NE (NW)	872	-	540436 182469

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
160	Contemporary Trade Directory Entries Name: T R G Autos Location: 44-46, Balaam Street, London, E13 8AQ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17NE (NW)	872	-	540436 182469
160	Contemporary Trade Directory Entries Name: J & M Domestic Repairs Location: 1, Whitwell Road, London, E13 8BP Classification: Washing Machines - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	879	-	540403 182449
161	Contemporary Trade Directory Entries Name: Games 292 Location: 292, Barking Road, London, E13 8HR Classification: Mobile Phone Accessories and Car Kits Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	863	-	540182 182104
161	Contemporary Trade Directory Entries Name: Pest & Vermin Control Location: Barking Rd, London, E13 8HR Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	900	-	540139 182095
162	Contemporary Trade Directory Entries Name: Canning Town Carpet Cleaners Ltd Location: 40, Edwin Street, London, E16 1QA Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SW (W)	866	-	540126 181687
162	Contemporary Trade Directory Entries Name: Aa Removals Location: 32, Edwin Street, London, E16 1QA Classification: Waste Disposal Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SW (W)	894	-	540098 181686
163	Contemporary Trade Directory Entries Name: Kwik Fit Location: 301-305 Barking Road, London, E13 8EQ Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	872	-	540209 182186
163	Contemporary Trade Directory Entries Name: Abbey M O T Centre Location: 1, Tabernacle Avenue, London, E13 8EG Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	886	-	540199 182196
163	Contemporary Trade Directory Entries Name: Crystal Service Centre Location: 1, Tabernacle Avenue, London, E13 8EG Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A17SW (NW)	886	-	540198 182196
164	Contemporary Trade Directory Entries Name: East London Taxis Ltd Location: 44, Balaam Street, London, E13 8AQ Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A17NE (NW)	872	-	540456 182485
165	Contemporary Trade Directory Entries Name: Standing Stones Location: A, 2, Newman Road, London, E13 8QA Classification: Garden Ornament Manufacturers Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address	A17NE (NW)	873	-	540610 182580
166	Contemporary Trade Directory Entries Name: Cleaners (Plaistow) Location: 481, Barking Road, London, E13 8PS Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	876	-	540746 182635

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
166	Contemporary Trade Directory Entries Name: All Cleaning Pros Location: 29, Khartoum Road, London, E13 8RF Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	919	-	540749 182680
167	Contemporary Trade Directory Entries Name: Domestic Appliances Location: 14, Boundary Lane, London, E13 9PD Classification: Washing Machines - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (NE)	881	-	541575 182483
168	Contemporary Trade Directory Entries Name: P P Recovery Location: 32, Fisher Street, London, E16 4DH Classification: Car Breakdown & Recovery Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	893	-	540105 181936
169	Contemporary Trade Directory Entries Name: Polite Location: 5, Coronation Road, London, E13 9QB Classification: Car Breakdown & Recovery Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (NE)	899	-	541390 182616
170	Contemporary Trade Directory Entries Name: Dirt Cheap Location: 536, Barking Road, London, E13 8QE Classification: Painting & Decorating Supplies Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	900	-	540857 182684
170	Contemporary Trade Directory Entries Name: Hattons M O T Centre Location: 538, Barking Road, London, E13 8QE Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A18NW (N)	905	-	540860 182688
170	Contemporary Trade Directory Entries Name: Durling Location: 501, Barking Road, London, E13 8PS Classification: Engines - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	931	-	540819 182709
171	Contemporary Trade Directory Entries Name: The Daisy Clothing Co Ltd Location: 2, King Street, London, E13 8DQ Classification: Clothing & Fabrics - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SW (NW)	901	-	540164 182158
172	Contemporary Trade Directory Entries Name: Lees Tyres Ltd Location: 264 Barking Rd, London, E13 8HR Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12NW (W)	903	-	540124 182059
172	Contemporary Trade Directory Entries Name: Lees Tyres Ltd Location: 264, Barking Road, London, E13 8HR Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	904	-	540124 182059
172	Contemporary Trade Directory Entries Name: Clutch King Location: 252, Barking Road, London, E13 8HR Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	929	-	540089 182033
172	Contemporary Trade Directory Entries Name: Newham Location: 251, Barking Road, London, E13 8EQ Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	976	-	540045 182047

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
173	Contemporary Trade Directory Entries Name: Western Leather Ltd Location: Unit 9 The Hanger, Perserverence Works, 38 Kingsland Rd, London, E2 8DA Classification: Leather Products - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A18NE (N)	918	-	541254 182682
174	Contemporary Trade Directory Entries Name: F W Motor Group & Waste Location: 11, Chandler Avenue, LONDON, E16 4AA Classification: Waste Disposal Services Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	926	-	540061 181803
174	Contemporary Trade Directory Entries Name: Hattons Van Rental Location: 45-53, Beckton Road, London, E16 4EA Classification: Commercial Vehicle Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SW (W)	937	-	540051 181763
175	Contemporary Trade Directory Entries Name: Sunny Cleaning Services Location: 548, Barking Road, London, E13 9JU Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	938	-	540897 182727
175	Contemporary Trade Directory Entries Name: Green Gate Location: 560, Barking Road, London, E13 9JU Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	954	-	540922 182744
175	Contemporary Trade Directory Entries Name: Martin'S Tyres Location: 562, Barking Road, London, E13 9JU Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address	A18NW (N)	962	-	540928 182753
175	Contemporary Trade Directory Entries Name: Martins Tyres Location: 562, Barking Road, London, E13 9JU Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	962	-	540928 182753
175	Contemporary Trade Directory Entries Name: Martin Tyres Location: 562, Barking Road, London, E13 9JU Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	962	-	540928 182753
176	Contemporary Trade Directory Entries Name: Clean-N-Vac Ltd Location: 9, Bering Walk, London, E16 3HY Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A9SW (SE)	938	-	541667 181092
177	Contemporary Trade Directory Entries Name: Poly Cleaning Location: 19, Tunmarsh Lane, London, E13 9ND Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	970	-	541058 182762
178	Contemporary Trade Directory Entries Name: J R J Auto Repairs Ltd Location: 1a-1b, Braemar Road, London, E13 8EH Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	983	-	540048 182084
179	Contemporary Trade Directory Entries Name: Abbey Safe Company Location: 31, Lonsdale Avenue, London, E6 3JZ Classification: Safes & Vaults - Suppliers & Installers Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NE (NE)	991	-	541734 182488

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
180	Fuel Station Entries Name: Park Garage Group Location: 387, Newham Way , Canning Town , London, Inner London, E16 4ED Brand: Obsolete Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Approximate location provided by supplier	A13NW (NW)	104	-	540894 181839
181	Fuel Station Entries Name: Newham Way Connect Location: Newham Way Butchers Road, Canning Town , London, Inner London, E16 1QX Brand: BP Premises Type: Petrol Station Status: Open Positional Accuracy: Automatically positioned to the address	A12SE (W)	517	-	540473 181727
182	Fuel Station Entries Name: Star Fairbairn Location: 306-308, Barking Road , Plaistow , London, Inner London, E13 8HL Brand: Texaco Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Automatically positioned to the address	A17SW (NW)	816	-	540241 182123
183	Points of Interest - Commercial Services Name: Auto Rewind Location: 273 Prince Regent Lane, London, E13 8SD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (NE)	111	7	541111 181865
184	Points of Interest - Commercial Services Name: Jenexport Location: 14 Atkinson Road, London, E16 3LR Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (E)	387	7	541386 181634
185	Points of Interest - Commercial Services Name: Like a Boss Car Centre Ltd Location: 203 Freemasons Road, London, E16 3PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SE (W)	428	7	540563 181720
186	Points of Interest - Commercial Services Name: R A Autos Location: Beeby Road, London, E16 1QJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SE (SW)	440	7	540580 181606
187	Points of Interest - Commercial Services Name: Newham Way Connect Location: Newham Way, Butchers Road, Canning Town, London, E16 1QX Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12SE (W)	471	7	540519 181729
187	Points of Interest - Commercial Services Name: B P Car Wash Location: Newham Way, London, E16 1QX Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12SE (W)	471	7	540519 181729
187	Points of Interest - Commercial Services Name: Car Wash Location: Newham Way, Butchers Road, Canning Town, London, Greater London, E16 1QX Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727
188	Points of Interest - Commercial Services Name: Universal Autoparts Ltd Location: 66 New Barn Street, London, E13 8JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NE (NW)	522	7	540514 182012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
188	Points of Interest - Commercial Services Name: Gold Seal Garage Ltd Location: 66 New Barn Street, London, E13 8JW Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A12NE (NW)	522	7	540514 182012
189	Points of Interest - Commercial Services Name: Custom House M O T Location: Custom House, 117-123 Freemasons Road, London, E16 3PH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	546	7	540605 181382
189	Points of Interest - Commercial Services Name: Docklands Tyres Location: Freemasons Road, London, E16 3PH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	550	7	540599 181383
189	Points of Interest - Commercial Services Name: Docklands M O T Centre Location: Freemasons Road, London, E16 3PH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	550	7	540599 181383
189	Points of Interest - Commercial Services Name: M O T Docklands Ltd Location: Freemasons Road, London, E16 3PH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	551	7	540598 181382
190	Points of Interest - Commercial Services Name: The Waterless Detailers (City) Ltd Location: 72 Ling Road, London, E16 4AN Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12NW (W)	687	7	540308 181896
190	Points of Interest - Commercial Services Name: Waterless Detailers City Location: 72 Ling Road, London, E16 4AN Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12NW (W)	687	7	540308 181896
191	Points of Interest - Commercial Services Name: Blanche Cleary Location: 39 Prince Regent Lane, London, E13 8RH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	706	7	540974 182498
192	Points of Interest - Commercial Services Name: Cumberland Autos Location: 1a Cumberland Road, London, E13 8LH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	732	7	540661 182449
192	Points of Interest - Commercial Services Name: Cumberland Autos Location: 1 Cumberland Road, London, E13 8LH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	732	7	540661 182448
192	Points of Interest - Commercial Services Name: Iit Multi Car Spares & MOT Ltd Location: 1 Cumberland Road, London, E13 8LH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	734	7	540660 182450
192	Points of Interest - Commercial Services Name: A.S.K Auto Village Location: 450 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	744	7	540586 182420

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
192	Points of Interest - Commercial Services Name: A.S.K Windscreens Location: 450 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	744	7	540586 182420
192	Points of Interest - Commercial Services Name: Don's Autos Location: 452 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	745	7	540589 182423
192	Points of Interest - Commercial Services Name: Dons Autos Location: 452 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	745	7	540589 182423
192	Points of Interest - Commercial Services Name: Don's Autos Location: 452 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	745	7	540588 182422
192	Points of Interest - Commercial Services Name: Auto Windscreen Location: 456 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	748	7	540598 182431
192	Points of Interest - Commercial Services Name: Dan Motors Ltd Location: 456 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	748	7	540598 182431
192	Points of Interest - Commercial Services Name: Dans Sounds Location: 456 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	748	7	540598 182431
192	Points of Interest - Commercial Services Name: Car Alarms Fitting Centre Location: 456 Barking Road, London, E13 8HJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	748	7	540598 182431
192	Points of Interest - Commercial Services Name: East London Garages Location: 423 Barking Road, London, E13 8AL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	783	7	540581 182462
192	Points of Interest - Commercial Services Name: East London Garages Location: 423 Barking Road, London, E13 8AL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	783	7	540581 182462
193	Points of Interest - Commercial Services Name: Sally Trans Ltd Location: 348 Barking Road, London, E13 8HL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A17SW (NW)	792	7	540324 182225
194	Points of Interest - Commercial Services Name: Newham Auto Spray Location: 1 Surrey Street, London, E13 8RN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	829	7	540960 182622

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
194	Points of Interest - Commercial Services Name: Newham Auto Spray Location: 1 Surrey Street, London, E13 8RN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	829	7	540959 182621
195	Points of Interest - Commercial Services Name: Don's Auto Location: 2a Newman Road, London, E13 8QA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	855	7	540665 182585
196	Points of Interest - Commercial Services Name: 2nd Generation Windscreens & Sunroofs Location: 267 Victoria Dock Road, London, E16 3BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7SE (SW)	866	7	540649 180975
197	Points of Interest - Commercial Services Name: T R G Autos Location: 44 Balaam Street, London, E13 8AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	871	7	540436 182468
197	Points of Interest - Commercial Services Name: Drive in Auto Fitting Centre Location: 44-46 Balaam Street, London, E13 8AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	872	7	540436 182469
197	Points of Interest - Commercial Services Name: East London Taxis Ltd Location: 44-46 Balaam Street, London, E13 8AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	872	7	540436 182469
197	Points of Interest - Commercial Services Name: Drive in Auto Fitting Centre Location: 44-46 Balaam Street, London, Greater London, E13 8AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	872	7	540436 182469
197	Points of Interest - Commercial Services Name: Drive in Auto Fitting Centre Location: 44-46 Balaam Street, London, Greater London, E13 8AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	872	7	540436 182469
198	Points of Interest - Commercial Services Name: Kwik-Fit (GB) Limited Location: 301-305 Barking Road, London, E13 8EQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	872	7	540209 182186
198	Points of Interest - Commercial Services Name: Kwik-Fit (GB) Limited Location: 301-305 Barking Road, London, E13 8EQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	873	7	540208 182186
198	Points of Interest - Commercial Services Name: Abbey M O T Centre Location: 1 Tabernacle Avenue, London, E13 8EG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	886	7	540198 182196
198	Points of Interest - Commercial Services Name: Crystal Service Centre Location: 1 Tabernacle Avenue, London, E13 8EG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	886	7	540198 182196

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
199	Points of Interest - Commercial Services Name: Clutch King Location: a Barking Road, London, E13 8PS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	884	7	540757 182646
200	Points of Interest - Commercial Services Name: Hattons M O T Centre Location: 538 Barking Road, London, E13 8QE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	904	7	540859 182688
200	Points of Interest - Commercial Services Name: Green Gate Location: 560 Barking Road, London, E13 9JU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	953	7	540921 182744
200	Points of Interest - Commercial Services Name: Green Gate Location: 560 Barking Road, London, E13 9JU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	954	7	540922 182744
200	Points of Interest - Commercial Services Name: Green Gate Garage Location: 562 Barking Road, London, E13 9JU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NW (N)	962	7	540928 182753
201	Points of Interest - Commercial Services Name: Metamorphosis Location: 252 Barking Road, London, E13 8HR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	929	7	540089 182033
201	Points of Interest - Commercial Services Name: Clutch King Location: 252 Barking Road, London, E13 8HR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	929	7	540089 182033
201	Points of Interest - Commercial Services Name: Clutch King Location: 252 Barking Road, London, E13 8HR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	929	7	540089 182032
201	Points of Interest - Commercial Services Name: J R J Auto Repairs Ltd Location: 1A-1B, Braemar Road, London, E13 8EH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	983	7	540048 182084
202	Points of Interest - Education and Health Name: Newham University Hospital Location: Glen Road, London, E13 8SL Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A18SE (N)	674	7	541232 182435
202	Points of Interest - Education and Health Name: Newham University Hospital Location: Glen Road, London, E13 8SL Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A18SE (NE)	684	7	541304 182418
202	Points of Interest - Education and Health Name: Newham General Hospital Location: Glen Road, London, E13 8SL Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A18SE (NE)	684	7	541305 182418

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
202	Points of Interest - Education and Health Name: Newham General Hospital Location: Glen Road, London, E13 8SL Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A18SE (NE)	684	7	541305 182418
203	Points of Interest - Education and Health Name: Gateway Surgical Centre Location: Glen Road, Plaistow, London, Greater London, E13 8SL Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A18SE (NE)	704	7	541339 182424
204	Points of Interest - Manufacturing and Production Name: Mint Business Park Location: E16 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	525	7	540481 181634
205	Points of Interest - Manufacturing and Production Name: Breakthrough Centre Ltd Location: 29 Adine Road, London, E13 8LL Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A17SE (NW)	655	7	540533 182265
206	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SE (NW)	704	7	540571 182361
206	Points of Interest - Manufacturing and Production Name: Works Location: E13 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A17SE (NW)	708	7	540570 182365
207	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	862	7	540252 182244
207	Points of Interest - Manufacturing and Production Name: Works Location: E13 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	865	7	540248 182243
208	Points of Interest - Public Infrastructure Name: Plaistow Fire Station Location: Plaistow Fire Station 145, Prince Regent Lane, London, E13 8RY Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A18SE (N)	402	7	541080 182191
209	Points of Interest - Public Infrastructure Name: BP Connect Location: Newham Way, London, E16 1QX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727
209	Points of Interest - Public Infrastructure Name: BP Service Station Location: Newham Way, London, E16 1QX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727
209	Points of Interest - Public Infrastructure Name: BP Service Station Location: Newham Way, London, E16 1QX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
209	Points of Interest - Public Infrastructure Name: Newham Way Connect Location: Newham Way, London, E16 1QX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727
209	Points of Interest - Public Infrastructure Name: Newham Way Connect Location: Newham Way, Butchers Road, Canning Town, London, E16 1QX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	517	7	540473 181727
210	Points of Interest - Public Infrastructure Name: Plaistow Police Station Location: Plaistow Police Station 444, Barking Road, London, E13 8HJ Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A17SE (NW)	733	7	540586 182407
210	Points of Interest - Public Infrastructure Name: Metropolitan Police Service Location: Plaistow Police Station 444, Barking Road, London, E13 8HJ Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A17SE (NW)	733	7	540587 182407
210	Points of Interest - Public Infrastructure Name: Metropolitan Police Service Plaistow Location: Plaistow Police Station 444, Barking Road, London, E13 8HJ Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A17SE (NW)	733	7	540587 182407
211	Points of Interest - Public Infrastructure Name: City Demolishing Services Location: 348 Barking Road, London, E13 8HL Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A17SW (NW)	792	7	540323 182224
212	Points of Interest - Public Infrastructure Name: Custom House Station Location: Not Supplied Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A8SW (S)	864	7	540759 180939
213	Points of Interest - Public Infrastructure Name: F W Motor Group & Waste Location: 11 Chandler Avenue, London, E16 4AA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A12NW (W)	926	7	540061 181803
214	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	145	7	541171 181802
215	Points of Interest - Recreational and Environmental Name: Adventure Playground Location: Freemasons Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SE (W)	359	7	540644 181667
215	Points of Interest - Recreational and Environmental Name: Adventure Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SE (W)	371	7	540636 181654
216	Points of Interest - Recreational and Environmental Name: Playground Location: Nr Sophia Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	374	7	540688 181548

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
217	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	681	7	541530 181319
217	Points of Interest - Recreational and Environmental Name: Play Area Location: King George Avenue, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9NW (SE)	683	7	541532 181319
218	Points of Interest - Recreational and Environmental Name: Playground Location: Ashburton Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NE (SW)	709	7	540386 181397
219	Points of Interest - Recreational and Environmental Name: Playground Location: Ashburton Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NE (SW)	728	7	540353 181415
219	Points of Interest - Recreational and Environmental Name: Playground Location: Ashburton Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NE (SW)	735	7	540342 181421
219	Points of Interest - Recreational and Environmental Name: Playground Location: Ashburton Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NW (SW)	755	7	540310 181438
219	Points of Interest - Recreational and Environmental Name: Playground Location: Ashburton Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NW (SW)	763	7	540299 181443
219	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	764	7	540301 181437
219	Points of Interest - Recreational and Environmental Name: Playground Location: Fords Park Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	777	7	540330 181358
220	Points of Interest - Recreational and Environmental Name: Playground Location: Victoria Dock Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	766	7	540991 181006
220	Points of Interest - Recreational and Environmental Name: Playground Location: Victoria Dock Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A8SW (S)	777	7	541004 180996
220	Points of Interest - Recreational and Environmental Name: Playground Location: Victoria Dock Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	779	7	541014 180994

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
221	Points of Interest - Recreational and Environmental Name: Playground Location: Fleetwood Close, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A14NE (E)	828	7	541853 181840
221	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	837	7	541862 181840
222	Points of Interest - Recreational and Environmental Name: Playground Location: Ivy Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NW (SW)	837	7	540306 181287
223	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	895	7	541617 181105
223	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SE (SE)	949	7	541687 181096
224	Points of Interest - Recreational and Environmental Name: Playground Location: Fords Park Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	900	7	540126 181512
225	Points of Interest - Recreational and Environmental Name: Playground Location: Forty Acre Lane, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	920	7	540072 181687
226	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	933	7	540127 182155
227	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	993	7	540117 182271
227	Points of Interest - Recreational and Environmental Name: Playground Location: Philip Street, E13 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A17SW (NW)	994	7	540116 182271

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices London Borough of Southwark - Pollution Control Unit London Borough of Greenwich - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Barking And Dagenham - Health and Consumer Services London Borough of Newham - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department London Borough of Redbridge - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Borough of Hackney - Environmental Health Department	April 2013 April 2014 January 2013 January 2015 July 2014 March 2015 October 2013 October 2014 October 2014 October 2017	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - Thames Region	October 2018	Quarterly
Enforcement and Prohibition Notices Environment Agency - Thames Region	March 2013	Annual Rolling Update
Integrated Pollution Controls Environment Agency - Thames Region	October 2008	Variable
Integrated Pollution Prevention And Control Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region	October 2018 October 2018 October 2018	Quarterly Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control London Borough of Southwark - Environmental Health Department London Borough of Redbridge - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Hackney - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Newham - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department	April 2014 December 2014 June 2014 March 2015 March 2015 May 2016 October 2014 October 2014 September 2013 September 2014 September 2014	Variable Variable Variable Variable Variable Variable Variable Variable Variable Variable Variable
Local Authority Pollution Prevention and Controls London Borough of Southwark - Environmental Health Department London Borough of Redbridge - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Hackney - Environmental Health Department London Borough of Newham - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Lewisham - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department	April 2014 December 2014 June 2014 March 2015 March 2015 March 2015 May 2016 October 2014 October 2014 September 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update

Agency & Hydrological	Version	Update Cycle
Local Authority Pollution Prevention and Control Enforcements London Borough of Southwark - Environmental Health Department London Borough of Redbridge - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Hackney - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Newham - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department	April 2014 December 2014 June 2014 March 2015 March 2015 May 2016 October 2014 October 2014 September 2013 September 2014 September 2014	Variable Variable Variable Variable Variable Variable Variable Variable Variable Variable Variable
Nearest Surface Water Feature Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Thames Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters Environment Agency - Thames Region	March 2013	Annual Rolling Update
Registered Radioactive Substances Environment Agency - Thames Region	January 2015	
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	October 2018 October 2018 October 2018 October 2018	Quarterly Quarterly Quarterly Quarterly
Water Abstractions Environment Agency - Thames Region	October 2018	Quarterly
Water Industry Act Referrals Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	January 2018	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2018	Quarterly

Agency & Hydrological	Version	Update Cycle
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2018	Quarterly
Flood Defences Environment Agency - Head Office	August 2018	Quarterly
OS Water Network Lines Ordnance Survey	October 2018	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	July 2018	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	July 2018 July 2018 July 2018 July 2018	Quarterly Quarterly Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	October 2018 October 2018 October 2018 October 2018	Quarterly Quarterly Quarterly Quarterly
Local Authority Landfill Coverage London Borough of Barking And Dagenham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Hackney London Borough of Lewisham - Environmental Health Department London Borough of Newham London Borough of Redbridge - Environmental Health Department London Borough of Southwark - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department	May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites London Borough of Tower Hamlets - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Hackney London Borough of Lewisham - Environmental Health Department London Borough of Newham London Borough of Redbridge - Environmental Health Department London Borough of Southwark - Environmental Health Department London Borough of Waltham Forest - Environmental Health Department	April 2003 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	June 2015 March 2003	Not Applicable Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements London Borough of Lewisham - Planning Services London Borough of Barking And Dagenham London Borough of Greenwich - Planning Department London Borough of Hackney London Borough of Newham London Borough of Redbridge London Borough of Southwark - Regeneration Department London Borough of Tower Hamlets London Borough of Waltham Forest - Environmental Services London Port Health Authority - Environmental Services London Borough of Bexley - Development Control	April 2015 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008 January 2016	Variable Variable Variable Variable Variable Variable Variable Variable Variable Annual Rolling Update Variable
Planning Hazardous Substance Consents London Borough of Lewisham - Planning Services London Borough of Barking And Dagenham London Borough of Greenwich - Planning Department London Borough of Hackney London Borough of Newham London Borough of Redbridge London Borough of Southwark - Regeneration Department London Borough of Tower Hamlets London Borough of Waltham Forest - Environmental Services London Port Health Authority - Environmental Services London Borough of Bexley - Development Control	April 2015 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008 January 2016	Variable Variable Variable Variable Variable Variable Variable Variable Variable Variable Annual Rolling Update Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2018	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	November 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2018	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	September 2018	Quarterly
Points of Interest - Education and Health PointX	September 2018	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2018	Quarterly
Points of Interest - Public Infrastructure PointX	September 2018	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2018	Quarterly
Underground Electrical Cables National Grid	December 2015	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	August 2018	Bi-Annually
Areas of Adopted Green Belt London Borough of Barking And Dagenham London Borough of Bexley - Development Control London Borough of Greenwich London Borough of Newham London Borough of Redbridge London Borough of Waltham Forest	August 2018 August 2018 August 2018 August 2018 August 2018 August 2018	As notified As notified As notified As notified As notified As notified
Areas of Unadopted Green Belt London Borough of Barking And Dagenham London Borough of Bexley - Development Control London Borough of Greenwich London Borough of Newham London Borough of Redbridge London Borough of Waltham Forest	August 2018 August 2018 August 2018 August 2018 August 2018 August 2018	As notified As notified As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	August 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	August 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	August 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	August 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	October 2018	Bi-Annually
Special Areas of Conservation Natural England	August 2018	Bi-Annually
Special Protection Areas Natural England	August 2018	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	London Borough of Newham - Environmental Health Department Alice Billings House, 2-12 West Ham Lane, London, E15 4SF	Telephone: 020 8430 2000 Fax: 020 8557 8869 Website: www.newham.gov.uk
3	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	London Borough of Newham Town Hall Annexe, Barking Road, East Ham, London, E6 2RP	Telephone: 020 8430 2000 Fax: 020 8472 2284 Website: www.newham.gov.uk
7	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
8	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

APPENDIX C

Zetica UXO Map and Pre-Desk Study Assessment

Zetica Detailed Desk Study Risk Assessment report

Pre-Desk Study Assessment

Site:	Newham Way, Plaistow, London
Client:	Arcadis
Contact:	Rimjhim Singh
Date:	23 rd January 2019
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ The Royal Docks and associated facilities. ■ Industries important to the war effort, including explosives factories. ■ Military barracks. ■ Anti-Aircraft (AA) guns.
WWI Bombing	<p>None identified on the Site.</p> <p>Readily available records indicate that the nearest bomb fell approximately 0.3km northeast of the Site in May 1918.</p>
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified on the Site.
WWII Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ The Royal Docks and associated facilities. ■ Industries important to the war effort, including explosives factories and chemical works. ■ Military barracks. ■ AA guns and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	<p>During WWII the Site was located in the County Borough (CB) of West Ham, which officially recorded 1,566No. High Explosive (HE) bombs with a bombing density of 334 bombs per 405 hectares (ha).</p> <p>Readily available records indicate that several HE bombs fell in close proximity to the Site.</p>
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	It is recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

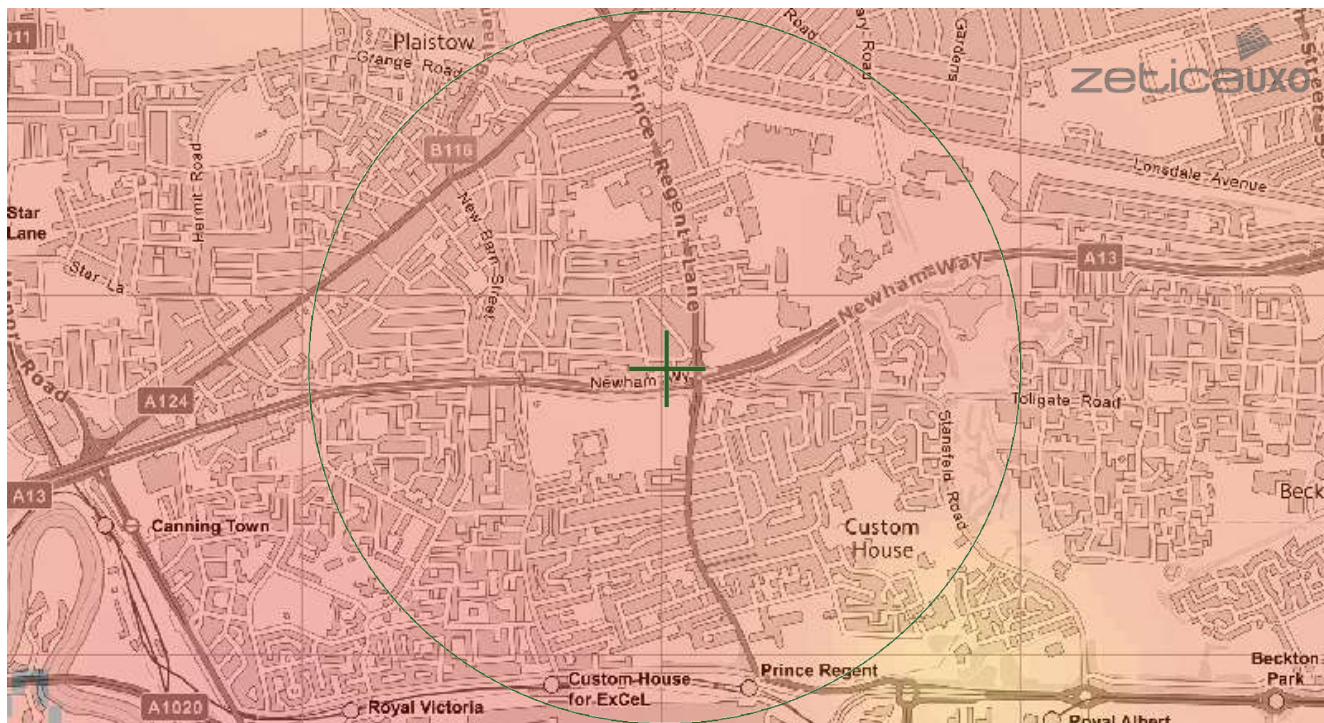
It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

UNEXPLODED BOMB RISK MAP



SITE LOCATION

Location: E13 8PF,
Map Centre: 541020,181801



LEGEND

London Bomb Risk



How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

Relative UXB risk across London

The relative risk for the London area is established by plotting the recorded bombing densities.

These are represented as counts of high explosive bombs in km2 area. The areas coloured green represent a record of less than 10 bombs per km2.

Compared to other areas of the UK, this still represents a significant density. However, this is much lower than parts of Central London, where the red colouration indicates in excess of 150 bombs falling per km2, representing a very significant bombing density.

What do I do if my site is in a moderate or high density area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites with a moderate or high bombing density.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682

email: uxo@zetica.com

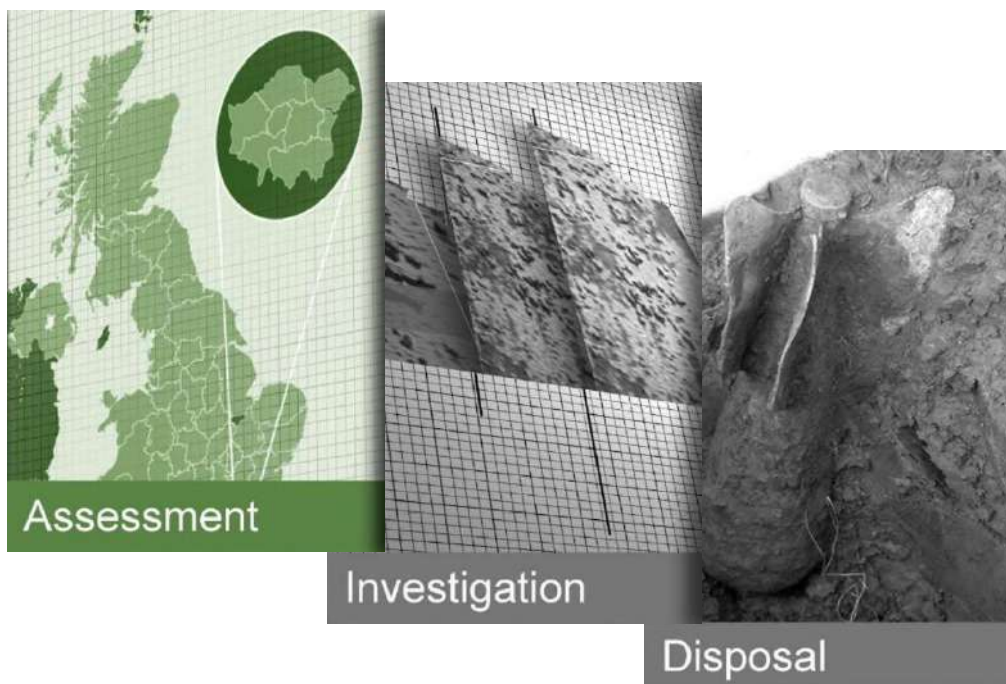
web: www.zeticauxo.com

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.



Newham Way, Plaistow – UXO Desk Study & Risk Assessment

Drafted by Corinne Harrison
Checked by Lucy Warwick
Authorised by Stefan Lang

Document Title UXO Desk Study & Risk Assessment
Document Ref. P8358-19-R1
Revision A
Project Location Newham Way, Plaistow
Client Arcadis
Date 12th February 2019

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UXO DESK STUDY & RISK ASSESSMENT

Newham Way, Plaistow

EXECUTIVE SUMMARY

Zetica Ltd was commissioned by Arcadis to carry out an Unexploded Ordnance (UXO) Desk Study and Risk Assessment for an area of approximately 0.1 hectare (ha) at Newham Way, Plaistow, West Ham, London Borough of Newham (the 'Site').

The aim of this report is to gain a fair and representative view of the UXO hazard for the Site and its immediate surrounding area in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'.

No records have been found indicating that the Site was bombed and no other significant source of UXO hazard has been identified on the Site.







Given this, it is considered that the Site has a low UXO hazard level, as shown in the following Figure, reproduced as Figure 5 in the main report.

Figure UXO hazard zone plan of the Site



Source: Google Earth

Not to Scale

Legend	Very Low		Low		Moderate	
	High		Very High		Site boundary	

The main findings of the report are summarised below.

- No records of bombing or military activity on the Site during World War One (WWI) have been found.
- During World War Two (WWII) the main strategic targets in the vicinity of the Site included the London Docks, industrial works along the River Thames and the Royal Woolwich Arsenal.
- No records have been found indicating that the Site was bombed during WWII. The nearest recorded High Explosive (HE) bomb fell approximately 25m west of the Site.
- No records of post-WWII military activity on the Site have been found.

The Table below, reproduced as Table 4 in the main report, provides a UXO risk assessment for potential works on the Site.

Further details on the methodology for the risk assessment are provided in Section 10.1 of the main report.

Table	UXO risk assessment for the Site							
Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
UXB	Shallow Excavations	1	1	1	1	5	5	Low
	Deep Excavations	1	1	1	1	5	5	Low
	Piling/Boreholes	1	1	1	1	4	4	Low
Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
	Deep Excavations	1	1	1	1	4	4	Low
	Piling/Boreholes	1	1	1	1	3	3	Low

PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)

Shallow Excavations defined as <1.0m below ground level (bgl).

Risk Mitigation Recommendations

To ensure that the UXO risk is reduced to As Low As Reasonably Practicable (ALARP) the following mitigation is advised:

Excavations

It is important to raise the awareness of those involved in excavations so that in the unlikely event that a suspect item is discovered, appropriate action is taken. This can be achieved through UXO awareness briefings to site staff.

Typically ~1hour in duration, these briefings will be expected to provide site workers with:-

- Background to the potential UXO hazards that could be encountered.
- Awareness of how the UXO hazard could present a risk.
- Knowledge of what to do in the event that a suspect item is encountered.

The briefing is to be provided along with back-up materials such as UXO awareness posters, emergency contact numbers and other background information to assist site workers in becoming familiar with what potential UXO can look like.

The materials can also be used by key staff to pass on the relevant points of the induction to others who visit or work on the Site.

By providing the UXO awareness briefing, it ensures that in the unlikely event that UXO is encountered:-

- All site staff take appropriate action.
- A support mechanism and points of contact are established.
- The likelihood of harm to people or property is reduced.
- Significant delays to site work are prevented.

Boreholes/Piles

Clearance certification for borehole or pile locations is considered prudent only if a zero tolerance to risk is adopted. Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.

Table 5 in the main report gives recommended actions in relation to the potential UXO risk level and the anticipated Site activity. Further advice on the mitigation methods can be provided by Zetica on request.

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Appendix 2	UXO Hazard and Ordnance Types
Appendix 3	Abbreviations
Appendix 4	Glossary & Definitions
Appendix 5	Bibliography

UXO DESK STUDY & RISK ASSESSMENT

Newham Way, Plaistow

Note: To aid the reader of this report, Zetica has colour coded each paragraph. Paragraphs with black text on a white background are paragraphs that provide site-specific information or information specifically researched as part of this project.

Paragraphs in a dark green text with a green background are paragraphs providing general information and, where appropriate, links to online resources giving further detail on particular sources of UXO.

1 INTRODUCTION

1.1 Project Outline

Zetica Ltd was commissioned by Arcadis to carry out an Unexploded Ordnance (UXO) Desk Study and Risk Assessment for an area of approximately 0.1 hectares (ha) at Newham Way, Plaistow, West Ham, London Borough of Newham (the 'Site').

The aim of this report is to gain a fair and representative view of the UXO hazard for the Site and its immediate surrounding area in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'. This hazard assessment includes:

- Likelihood of ordnance being present.
- Type of ordnance (size, filling, fuze mechanisms).
- Quantity of ordnance.
- Potential for live ordnance (UXO).
- Probable location.
- Ordnance condition.

It should be noted that some military activity providing a source of UXO hazard may not be readily identifiable and therefore there cannot be any guarantee that all UXO hazards within the Site have been identified in this report.

1.2 Historical Information

With most locations, the potential presence of UXO as a result of enemy action, unauthorised disposal or unrecorded military activity can never be totally discounted.

Detailed records of military activity are rarely released into the public domain. Even when military information is made public there may be gaps in the records because files have been lost or destroyed.

Press records can supplement local information, although this source of information must be treated with caution, as inaccuracies do exist, either inadvertently or intentionally in order to confuse enemy intelligence. Classified official records can sometimes be considered inaccurate for the same reason.

Recent research indicates that England alone had 17,434No. recorded defence sites, of which 12,464No. were classified as defensive anti-invasion sites. The precise locations of many of these sites are still to be identified, illustrating the scale of the problem when establishing potential risks from limited historical data.

1.3 Sources of Information

Zetica Ltd researched the military history of the Site and its surrounding area utilising a range of information sources. The main sources of information are detailed in the following sections and referenced at the end of this report.

1.3.1 Zetica Ltd Defence Related Site Records

Zetica Ltd's in-house records were consulted, including reference books and archived materials from past work in the region. Relevant documents have been cited within the bibliography of this report.

1.3.2 Zetica Ltd Bombing Density Records and Maps

Reference has been made to the Zetica Ltd bomb risk maps located on Zetica Ltd's website (<http://zeticauxo.com/downloads-and-resources/risk-maps/>).

1.3.3 Ministry of Defence and Government Records

Various government departments and units within the Ministry of Defence (MoD) were approached for information of past and present military activity in the area. These included the Home Office records of abandoned bombs.

1.3.4 Other Historical Records, Maps and Drawings

Numerous reference documents including historical maps, aerial photographs and drawings have been consulted from sources such as the National Archives, the US National Archives and Records Administration (NARA), Historic England and the Defence of Britain Project.

The British Geological Survey (BGS) was consulted for borehole information.

1.3.5 Local Authority Records

Information was obtained from Newham Borough Council.

1.3.6 Local Record Offices and Libraries

Newham Archives and Local Studies Library, and Barking and Dagenham Archives were consulted, in addition to Essex Records Office.

1.3.7 Local Historical and Other Groups

Local history groups and archaeological bodies were consulted, including the Greater London Historic Environment Record (HER).

1.4 Data Confidence Level

In general, there is a high level of confidence in the researched information sources used for this report. Exceptions to this are specifically detailed in the text of the report.

2 THE SITE

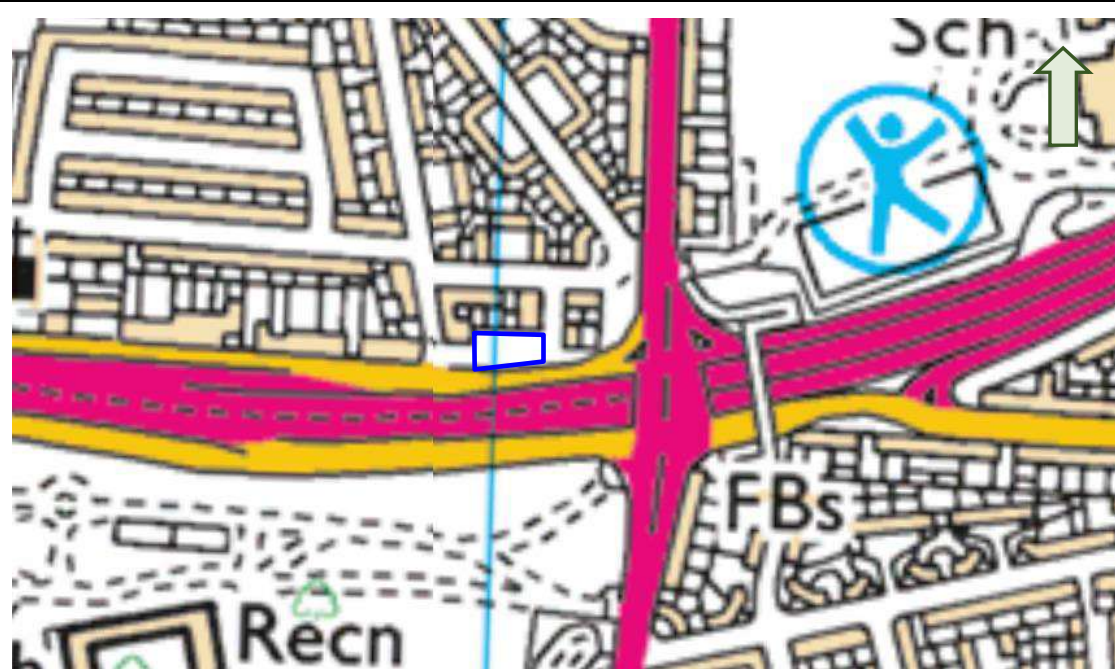
2.1 Site Location

The Site is centred on Ordnance Survey National Grid Reference (OSNGR) TQ 410817. It is located in West Ham, approximately 11.1km northeast of London city centre.

The Site comprises open ground and an access path at the rear of Chalk Road. It is bounded to the north by residential properties, to the west by residential properties and open ground, to the south by Newham Way and to the east by Salmons Road.

Figure 1 is a Site location map and Plate 1 is a recent aerial photograph of the Site.

Figure 1 Site location map



Source: © Crown Copyright 2019. Reproduced by permission of Ordnance Survey

Not to Scale

Legend Site boundary —

Plate 1 Recent aerial photograph of the Site



Source: Google Earth

Not to Scale

Legend

Site boundary



2.2 Proposed Works

It is understood that works on the Site may include intrusive ground investigations, excavations and piling.

2.3 Site History

The historical map of 1899 (Figure 2) shows that in the late 19th century the Site comprised open land. The surrounding area predominantly comprised open ground. Beckton Road ran in close proximity to the southern part of the Site.

Figure 2 Historical map, 1898



Source: © Crown Copyright 2019. Reproduced by permission of Ordnance Survey

Not to Scale

Legend

Site boundary —

By the end of WWII residential properties had been constructed on the Site and residential development had occurred in the surrounding area.

Beckton Road, in close proximity to the southern part of the Site, had been widened.

These developments are shown in the historical map of 1946 (Figure 3).

Figure 3 Historical map, 1946



Source: © Crown Copyright 2019. Reproduced by permission of Ordnance Survey

Not to Scale


Legend

Site boundary —

During the second half of the 20th century, the residential properties on the Site had been demolished. The Site had been landscaped and an access path had been established in its place.

Further residential development had occurred in the vicinity of the Site. Beckton Road, renamed Newham Way, had been modernised.

These changes are shown in Plate 2, an aerial photograph dating from 2013.

Plate 2	Aerial photograph, 2013
	
<p>Source: Google Earth Not to Scale</p>	
Legend	Site boundary —
<p>Since 2013 no significant development has occurred on the Site (see Plate 1).</p>	
<h2>2.4 Pre-WWI Military Activity</h2>	
<p>No records of any significant pre-WWI military activity on or in close proximity to the Site have been found.</p>	
<h2>2.5 WWI Military Activity</h2>	
<p>No records of any significant WWI military activity on or in close proximity to the Site have been found.</p>	
<p>During WWI an estimated 9,000No. German bombs were dropped over Britain. It was the first time that strategic aerial bombing had been used.</p>	
<p>No records have been found indicating that the Site was bombed during WWI. The nearest recorded incident is described below.</p>	
<p>19th May 1918</p>	
<p>1No. HE bomb fell near Barclay Road, approximately 0.3km northeast of the Site.</p>	
<p>In response to the air raids, Anti-Aircraft (AA) guns were established. These were potential sources of Unexploded AA (UXAA) shells which could land up to 13km from the firing point, although more typically fell within 10km during WWI.</p>	

Records have been found indicating that there were 23No. static AA gun batteries within 10km of the Site during WWI. The nearest of these was located in Beckton (TQ 429815), approximately 1.9km southwest of the Site. It was armed with 1No. 3-inch gun.

WWI military activity is not considered to provide a source of UXO hazard to the Site.

2.6 WWII Military Activity

The Site was located in a region with several important strategic targets which were heavily bombed. Details of recorded air raid incidents in the vicinity of the Site are provided in Section 3 and Appendix 1.

Defensive and offensive military establishments were built during WWII. These included lines of defences (Stop Lines), pillboxes, AA guns and bombing decoys. Details for those nearest to the Site are provided in Section 4.

Other military establishments in the vicinity of the Site are described in Sections 5 to 7.

2.7 Post-WWII Military Activity

No records of any significant post-WWII military activity on or in close proximity to the Site have been found.

3 WWII BOMBING

Bombing raids began in the summer of 1940 and continued until the end of WWII. Bombing densities generally increased towards major cities or strategic targets such as docks, industrial premises, power stations and airfields.

The German bombing campaign saw the extensive use of both High Explosive (HE) bombs and Incendiary Bombs (IBs). The most common HE bombs were the 50kg and 250kg bombs, although 500kg were also used to a lesser extent. More rarely 1,000kg, 1,400kg and 1,800kg bombs were dropped.

The HE bombs tended to contain about half of their weight in explosives and were fitted with one or sometimes two fuzes. Not all HE bombs were intended to explode on impact. Some contained timing mechanisms where detonation could occur more than 70 hours after impact.

Incendiary devices ranged from small 1kg thermite filled, magnesium bodied bombs to a 250kg 'Oil Bomb' (OB) and a 500kg 'C300' IB. In some cases the IBs were fitted with a bursting charge. This exploded after the bomb had been alight for a few minutes causing burning debris to be scattered over a greater area. The C300 bombs were similar in appearance to 500kg HE bombs, although their design was sufficiently different to warrant a specially trained unit of the Royal Engineers to deal with their disposal.

Anti-Personnel (AP) bombs and Parachute Mines (PMs) were also deployed. 2No. types of anti-personnel bombs were in common use, the 2kg and the 12kg bomb. The 2kg bomb could inflict injury across an area up to 150m away from the impact, within 25m of this, death or fatal injury could occur.

PMs (which were up to 4m in length) could be detonated either magnetically or by noise/vibration. Anti-shipping parachute mines were commonly dropped over navigable rivers, dockland areas and coastlines. The Royal Navy was responsible for ensuring that the bombs were made safe. Removal and disposal was still the responsibility of the Bomb Disposal Unit of the Royal Engineers.

WWII bomb targeting was inaccurate, especially in the first year of the war. A typical bomb load of 50kg HE bombs mixed with IBs which was aimed at a specific location might not just miss the intended target but fall some considerable distance away.

It is understood that the local Civil Defence authorities in urban areas had a comprehensive system for reporting bomb incidents and dealing with any UXO. In more rural areas, fewer bombing raids occurred. It is known that ARP records under-represent the number and frequency of bombs falling in rural and coastal areas.

Bombs were either released over targets or as part of 'tip and run' raids where bomber crews would drop their bombs to avoid Anti-Aircraft fire or Allied fighter aircraft on the route to and from other strategic targets. Bombs dropped as a result of poor targeting or 'tip and run' raids on rural, river, marsh or coastal areas were often unrecorded or entered as 'fell in open country', 'fell in the sea' or 'fell in the river' and left little evidence of the fall.

3.1 Bombing in London and West Ham

London was a principal target of Luftwaffe bombing during WWII. The docks of East London were the main target of Luftwaffe bombing during the Blitz. The Port of London was the most heavily bombed civilian target in the United Kingdom (UK).

The first air raid of the London Blitz took place on 7th September 1940 when a large German force bombed the docks and surrounding areas in West Ham, Stepney and Poplar.

From mid-September until the end of that year, London was raided on all but 3No. nights. The raids continued through the early months of 1941 becoming less frequent, although often more intense. Heavier bombs, including PMs and OBs, were now used and major incendiary raids on the 29th December 1940 and 10th May 1941 caused widespread fire damage across the city.

From July 1941 the bombing campaign against London entered a period of relative inactivity. Raids still took place but tended to be relatively minor in severity. Manned bomber raids returned to London in the first four months of 1944 and, after a brief respite, were followed by the start of the Pilotless Aircraft (V1) offensive against the capital in June 1944.

These weapons arrived at any time of day and caused massive blast damage (although little fire damage). The V1 offensive on London was all but over by September 1944, although some V1s continued to fall on the capital until March 1945. A total of 68 No. V1s fell in West Ham CB.

In September 1944 the Long Range Rocket (V2) offensive on London began. Falling from a height of some 50 miles (80km) above the city, these ballistic missiles caused larger craters and greater damage to underground utilities than the V1s, although their surface blast effect was generally less. A total of 33No. V2s fell in West Ham CB.

The first bombs fell on West Ham on the 24th August 1940. By the 8th May 1945 the borough had recorded 1,227No. air raid alerts, 1,286No. reported HE bomb explosions, 207No. HE bombs reported as UXB and 1,130No. IBs causing conflagrations or large fires. Many more IBs went unrecorded as they caused little or no damage.

In addition, 32No. PMs (4No. unexploded), 65No. OBs (16No. unexploded), 16No. Phosphorus IBs (PhIBs) (15No. unignited) and 201No. AA shells (95No. UXAA shells) fell on the borough.

3.2 Strategic Targets

The presence of strategic targets significantly increased the likelihood of bombing within the local area. Airfields, docks, industrial facilities, transport infrastructure and anti-invasion defences were all targeted by Luftwaffe bombers. The inherent bombing inaccuracies at the time meant that areas surrounding the targets were often subjected to bombing.

The main strategic targets in the vicinity of the Site are described below.


3.2.1 Public Utilities

Public utilities were frequently targeted to disrupt the power supply to local industries.

The Northern Outfall Sewer was located approximately 0.7km northeast of the Site.

A major gas works was located at Beckton, approximately 3.1km southeast of the Site. Beckton Gas Works had its own docks and rail network, and was heavily raided throughout WWII, often leading to bombing overspill in the surrounding area.

Plate 3 is a Luftwaffe target photograph dated the 20th June 1940. It identifies the Northern Outfall Sewer (A) and Beckton Gas Works (GB 52 1).

Plate 3	Luftwaffe target photograph of the Northern Outfall Sewer, 20 th June 1940
 <p>Source: NARA</p> <p>Not to Scale</p>	
Legend	Site ●
<h3>3.2.2 London Docks and the River Thames</h3> <p>London's docklands were critical for the import of food and coal and for the transshipment of goods. Associated industry, including cable works and food production factories, warehousing and processing facilities, were located along the adjacent River Thames.</p> <p>The Royal Docks were located approximately 1.5km southwest of the Site (See Plate 3, highlighted as GB 45 1 and GB 45 2). They were able to accommodate large ships, becoming one of London's main import docks during WWII.</p> <p>The docks were also used in the production of the Mulberry Harbours in preparation for D-Day.</p>	
<h3>3.2.3 Transport Infrastructure</h3> <p>Transport infrastructure was targeted to disrupt logistical supply lines and troop movements.</p> <p>There were extensive railway links connecting to the London Docks and large sidings, goods sheds and coal depots surrounding the dock basins, approximately 1.5km southeast of the Site.</p>	

3.2.4 Industrial and Commercial Targets

The Silvertown district, located approximately 1.8km south of the Site, was the location of a range of industries important to the war effort. This included chemical and engineering works, food processing factories and oil mills.

3.2.5 Military Targets

The Royal Arsenal was approximately 4.5km southeast of the Site. It produced a range of munitions, explosives and weapons and housed extensive munitions stores and testing facilities.

More than 350 No. HE bombs fell within the boundary of the Royal Arsenal during WWII.

3.3 Bombing Density and Incidents

Table 1 gives details of the overall bombing statistics recorded for the local authority districts of the Site and surrounding districts. These were categorised as Rural Districts (RD), Urban Districts (UD), Municipal or Metropolitan Boroughs (MB) and County Boroughs (CB).

WWII bomb density levels are defined below:

<5 bombs per 405ha is a Very Low regional bombing density.

5-15 bombs per 405ha is a Low regional bombing density.

15-50 bombs per 405ha is a Moderate regional bombing density.

50-250 bombs per 405ha is a High regional bombing density.

>250 per 405ha is a Very High regional bombing density.

The Site was located in West Ham CB.

Table 1 Bombing statistics

Area	Bombs Recorded				
	High Explosive	Parachute Mines	Other	Total	Bombs per 405ha (1,000 acres)
West Ham CB	1,498	45	23	1,566	334.0
Poplar MB	755	20	11	786	337.2
Greenwich MB	929	19	21	969	251.2
East Ham CB	753	36	29	818	246.1
Woolwich MB	1,509	19	46	1,574	190.1
Leyton MB	419	12	28	459	176.9
Wanstead & Woodford MB	294	10	21	325	84.6

Note that Table 1 excludes the figures for V1s (Flying Bombs or Pilotless Aircraft), V2s (Long Range Rockets) and IBs. Discrepancies between this list and other records, such as bomb clearance records, demonstrate that this data is likely to under-represent actual bombing.

The nearest recorded air raid incidents to the Site are described below. Further details of recorded air raid incidents in the vicinity of the Site are given in Appendix 1.

5th September 1940

Incendiary bombs (IBs) fell on Prince Regent Lane Playing Fields, approximately 0.2km southeast of the Site.

IBs fell on the junction of Prince Regent Lane and Ilkley Road, approximately 0.2km southeast of the Site.

7th September 1940

1No. HE bomb fell on Beckton Road Park, near Prince Regent Lane, approximately 0.2km southeast of the Site. This was recorded as an Unexploded Bomb (UXB).

9th September 1940

1No. HE bomb fell on Chadwin Road, between Denmark Street and Egham Road, approximately 0.2km northwest of the Site.

14th September 1940

IBs fell on the junction of Beckton Road Park and Prince Regent Lane, approximately 0.1km east of the Site.

19th September 1940

1No. HE bomb fell on the junction of Brock Road and Cranley Road, approximately 0.2km northwest of the Site.

1st November 1940

1No. HE bomb fell on Egham Road, between Beckton Road and Chalk Road, approximately 25m west of the Site.

1No. HE bomb fell on the junction of Beckton Road and Prince Regent Lane, approximately 0.1km east of the Site.

1No. HE bomb fell in the centre of Beckton Road playing fields, approximately 0.2km southwest of the Site.

1No. HE bomb fell on Holborn Road, near Egham Road, approximately 0.2km northwest of the Site.

21st November 1940

1No. HE bomb fell on the junction of Botha Road and Chalk Road, approximately 50m northeast of the Site.

12th January 1941

IBs fell on Chadwin Road, Brock Road and Cranley Road, approximately 0.2km northwest of the Site.

19th March 1941

IBs fell on the junction of Alliance Road and Prince Regent Lane, approximately 0.2km northeast of the Site.

IBs fell on Botha Road, approximately 0.2km north-northeast of the Site.

IBs fell on Selby Road, approximately 0.2km northwest of the Site.

IBs fell on 34 and 21 Holborn Road, approximately 0.2km northeast of the Site.

21st April 1941

1No. HE bomb fell on the junction of Colman Road and Nottingham Avenue, approximately 0.2km southeast of the Site.

11th May 1941

1No. 500kg HE bomb fell on 26 Chalk Road, approximately 50m northwest of the Site.

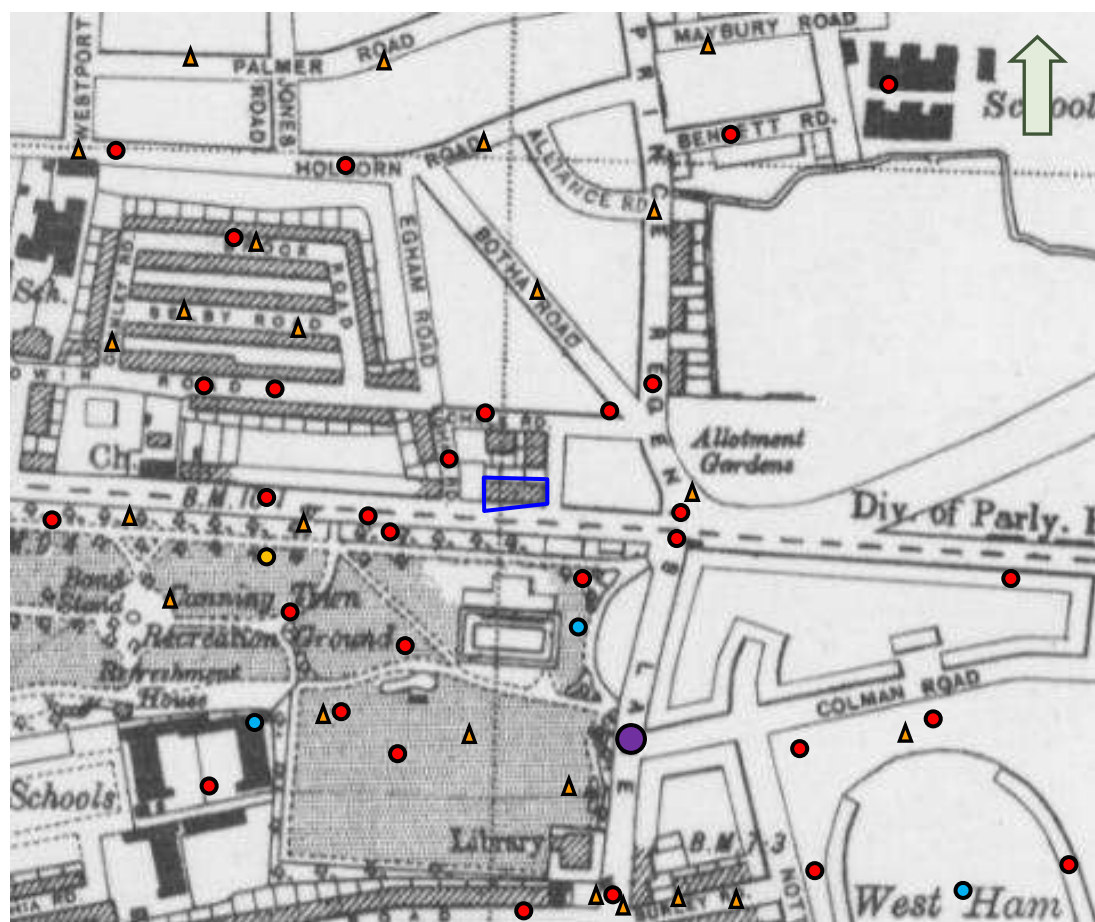
1No. 250kg HE bomb fell on 235 Prince Regent Lane, approximately 0.2km northeast of the Site.

It should be noted that during WWII, many UXB were mapped and subsequently removed as and when conditions and demands on Bomb Disposal teams allowed. Their removal was not always accurately recorded and sometimes records were later destroyed. In practice, most UXB were probably removed and only a much smaller number were actually registered as officially abandoned bombs.

Figure 4 is a map showing the approximate locations of bomb impacts in the immediate vicinity of the Site. IBs shown are indicative of larger numbers of similar devices that fell within the given area. The map has been compiled from a number of different sources, including air raid incident reports, bomb census maps and historical aerial photographs.

Note that air raid incident reports did not always record precise locations, often only indicating on which street or area a bomb fell.

Figure 4 Compiled bomb impact map for the vicinity of the Site



Source: © Crown Copyright 2019. Reproduced by permission of Ordnance Survey

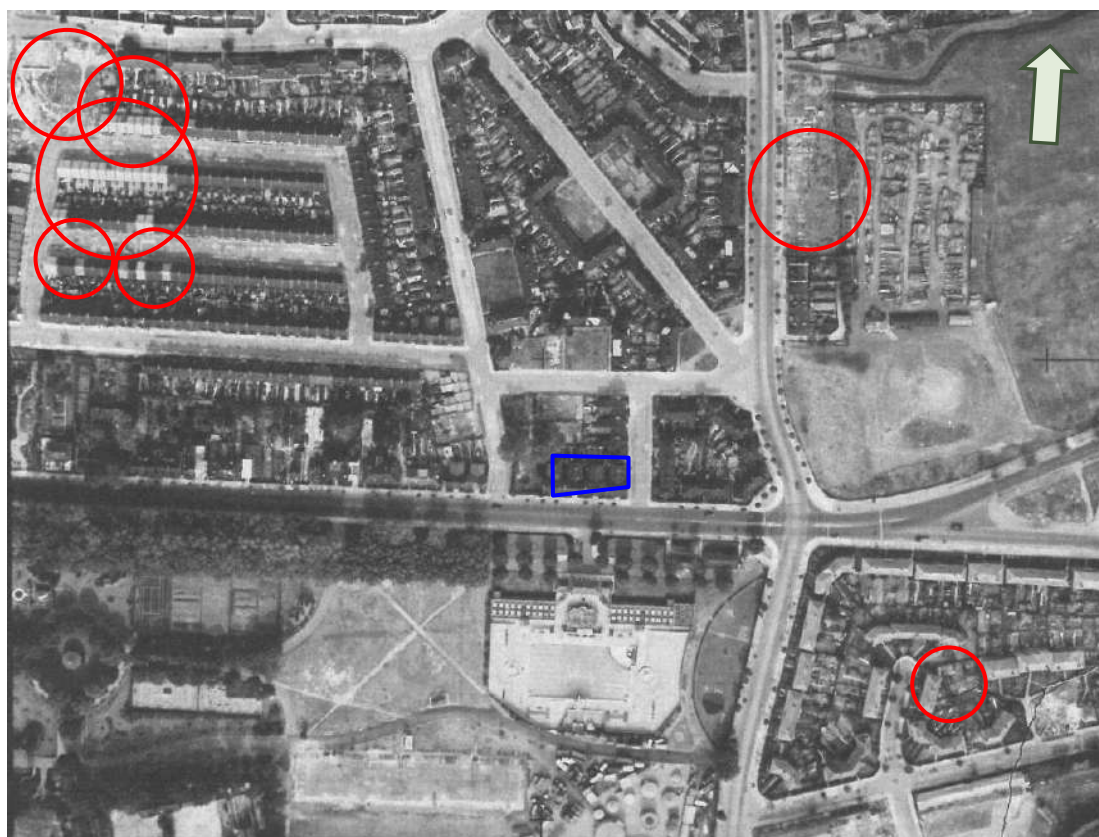
Not to Scale

Legend	Site boundary	HE bomb	UXB	IBs	V1	OB

Plate 4 is an aerial photograph dated the 12th September 1945. No bomb damage or cratering has been identified on the Site.

Some possible bomb damage has been identified in the surrounding area, identified by cleared areas and replaced roofs.

Plate 4 Aerial photograph, 12th September 1945



Source: Historic England

Not to Scale

Legend

Site boundary —

Possible bomb damage ○

Potential UXO Hazard

No records have been found indicating that HE bombs fell on the Site and no bomb damage has been identified on the Site on historical aerial photography.

WWII bombing is not considered to provide a source of UXO hazard to the Site.

3.4 Geology and Bomb Penetration Depths

It is important to consider the geological materials present on the Site at the time that a bomb was dropped in order to establish its maximum penetration depth. British Geological Survey (BGS) 1:50,000 Sheet 257 Romford (Solid & Drift) and nearby BGS borehole records were consulted.

During WWII the geology of the Site comprised Made Ground over Alluvium, overlying the London Clay Formation.

Table 2 provides an estimate of average maximum bomb penetration depths assuming ground conditions during WWII of 1m of Made Ground (modelled as gravel), over 2m of soft clay, over 4m of gravel, overlying more than 20m of stiff clay.

Table 2	Estimated average maximum bomb penetration depths	
Estimated average bomb penetration depths for anticipated geology		
Bomb Weight	50kg	4.0m
	500kg	10.0m
<p>The estimated bomb penetration depths given in Table 2 are from the WWII ground level and are based on the following assumptions:</p> <p>a) High level release of the bomb resulting in an impact velocity of 260m/s (>5,000m altitude).</p> <p>b) A strike angle of 10 to 15 degrees to the vertical.</p> <p>c) That the bomb is stable, both in flight and on penetration.</p> <p>d) That no retarding units are fitted to the bomb.</p> <p>e) That the soil type is homogenous.</p> <p>A high altitude release of a bomb will result in ground entry at between 10° and 15° to the vertical with the bomb travelling on this trajectory until momentum is nearly lost. The bomb will then turn abruptly to the horizontal before coming to rest. The distance between the centre of the entry hole and the centre of the bomb at rest is known as the ‘offset’. A marked lateral movement from the original line of entry is common.</p> <p>Low-level attacks may have an impact angle of 45° or more, which will frequently lead to a much greater amount of offset movement during soil penetration.</p> <p>In low level attacks over deep water bodies, the offset distances from the point of entry at the water surface may be considerably enhanced due to hydrodynamic effects before the bomb penetrates or settles on the sea bed. Shallow water has little effect on bomb penetration depths during high level attacks.</p>		

4 WWII DEFENCES

4.1 Bombing Decoys

In order to draw enemy aircraft away from towns and other strategically important targets, a series of decoys were developed between 1940 and 1941.

They were estimated to have drawn at least 5% of the total weight of bombs away from their intended targets. Approximately 792No. static decoy sites were built at 593No. locations in England. In addition, numerous temporary and mobile decoys were deployed.

Several different types of decoy were devised:

- Night time dummy airfields (Q sites).
- Daytime dummy airfields (K sites).
- Diversionary fires to simulate successful bombing raids on airfields (QF sites), petroleum depots (P sites) and major towns and cities (Starfish or SF sites).
- Simulated urban lighting (QL sites).
- Dummy Heavy Anti-Aircraft (HAA) batteries, factories and buildings (C series).
- Mobile decoys representing 'hards' for troop embarkation (MQLs), tanks and other vehicles.

Machine gun emplacements and Light Anti-Aircraft (LAA) guns were used to prevent possible enemy landings at decoy airfields.

By their nature, decoy sites provide a potential risk from Unexploded Bombs (UXB), both within the decoy site boundary and in the surrounding areas.

The nearest recorded bombing decoy was located on Rainham Marshes (TQ 529800), approximately 12km southeast of the Site.

Bombing decoys are not considered to provide a source of UXO hazard to the Site.

4.2 Anti-Aircraft Defences

Anti-Aircraft (AA) gun batteries were targeted by the Luftwaffe. They were also a source of Unexploded AA (UXAA) shells which could land up to 27km from the firing point during WWII, although more typically fell within 15km. These could be distributed over a wide area.

AA batteries present a potential source of UXO hazard as a result of the storage, use and disposal of ordnance associated with the armaments used. They may have a risk from small caches of ammunition buried locally to them. 3No. types of AA batteries existed:

- Heavy Anti-Aircraft (HAA) batteries of large guns designed to engage high flying bomber aircraft. These tended to be relatively permanent gun emplacements.
- Light Anti-Aircraft (LAA) weaponry, designed to counter low flying aircraft. These were often mobile and were moved periodically to new locations around strategic targets such as airfields.
- Rocket batteries (ZAA) firing 3" or 3.7" AA rockets with a maximum altitude of 5,800m and a ground range of 9km were also relatively permanent emplacements.

Many AA batteries were associated with searchlights and consequently 'visible' at night, providing clear targets to the Luftwaffe bombers and a potential for UXB.

During WWII the Site was within the range of guns deployed in the London Gun Defended Area (GDA).

Table 3 is a list of recorded HAA gun and ZAA rocket batteries within 10km of the Site.

Table 3 WWII HAA and ZAA batteries within 10km of the Site				
Grid Reference	Serial No.	Location	Armament	Approximate Distance and Direction from Site
TQ 417815	ZE16	Beckton	Unknown	0.7km SE
TQ 395827	25Z	West Ham	Unknown	1.7km NW
TQ 382788	ZE8	Isle of Dogs	4No. 4.5" guns	4.0km SW
TQ 411865	ZE9	Wanstead	4No. 3.7" guns	4.7km N
TQ 409864	20Z	Wanstead Flats	Unknown	4.7km N
TQ 427773	ZS8	Woolwich Common	4No. 4.5" guns	4.7km SSE
TQ 366842	-	Victoria Park	Unknown	4.9km NW
TQ 449850	ZE2	Barking Park	8No. 4.5" guns	5.0km NE
TQ 375853	ZE21	Hackney Marshes	4No. 5.25" guns	5.0km NW
TQ 365842	19Z	Victoria Park	Unknown	5.1km NW
TQ 395768	4Z	Blackheath Common	64No. UP projectors	5.3km SW
TQ 356819	ZE19	Walthamstow	Unknown	5.4km W
TQ 374859	ZE21	Hackney Marshes	4No. 4.5" guns	5.5km NW
TQ 444767	7Z	Shooters Hill	64No. UP projectors	6.1km SE
TQ 353789	ZE12	Southwark Park	Unknown	6.4km SW
TQ 350794	ZE12	Southwark Park	Unknown	6.4km SW
TQ 354788	21Z	Southwark Park	64No. UP Projectors	6.4km SW
TQ 477824	ZE15	Creek Mouth	Unknown	6.7km WNW
TQ 478799	ZS3	Plumstead Marshes	4No. 4.5" guns	6.9km SE
TQ 473779	ZS4	Bostall Heath	4No. 5.25" guns	7.3km SE
TQ 373754	ZS11	Brockley	4No. 3.7" guns	7.4km SW
TQ 420894	ZE5	Clayhall	Unknown	7.7km NNE
TQ 477852	26Z	Beacontree Heath	Unknown	7.9km NE
TQ 438742	ZS7	Eltham	Unknown	7.9km SE
TQ 466752	ZS6	Welling	4No. 4.5" guns	8.5km SW
TQ 346753	ZS25	Peckham Rye	Unknown	9.0km SW
TQ 413724	ZS22	Grove Park	Unknown	9.3km S
TQ 447907	ZE3	Asylum	Unknown	9.6km NE
TQ 326865	ZE22/-	Unknown	Unknown	9.6km NW
TQ 435724	ZS28	Coldharbour Farm	2No. 5.25" guns	9.6km SSE

It should be noted that the lack of official records of HAA batteries or armaments cannot be taken to imply their absence.

The nearest recorded WWII AA shell incidents to the Site are described below.

24th February 1944

1No. AA shell fell on Plaistow Secondary School, approximately 0.5km north of the Site. This was recorded as a UXAA shell.

21st January 1944

1No. AA shell fell on Prince Regent Lane, between Ripley Road and Tree Road, approximately 0.5km southeast of the Site.

23rd January 1944

1No. AA shell fell on Beckton Road Park, near Prince Regent Lane, approximately 0.1km southeast of the Site. This was recorded as a UXAA shell.

24th February 1944

1No. Unrotated Projectile (UP) shell fell on Beckton Road Playing Fields, approximately 0.2km southwest of the Site. It was recorded as an Unexploded UP (UXUP) shell and removed on the 29th April 1944.

1No. AA shell fell on 25 Burley Road, approximately 0.3km southeast of the Site. This was recorded as a UXAA shell.

1No. AA shell fell on Plaistow Secondary School, Prince Regent Lane, approximately 0.5km north of the Site.

19th April 1944

1No. AA shell fell on Beckton Road Park, on the children's playground, approximately 0.4km southwest of the Site.

Given the number of gun batteries in the area, the possibility that a UXAA shell fell on the Site unnoticed cannot be totally discounted.

4.3 Barrage Balloons and Anti-Landing Obstacles

Balloon barrages were flown in many British towns and cities to protect against air raids. Their presence deterred low flying aircraft, making it more difficult for bombs to reach their intended targets. Barrage balloon sites can be a source of UXO as they were targeted by the Luftwaffe. They also often had a small explosive charge fitted with tilt fuzes attached approximately 50m from each end of the balloon cables and designed to detonate if the cables were hit by an aircraft.

Measures were also taken to prevent enemy aircraft landing in the event of invasion. Obstructions were constructed around airfields and on other open sites deemed fit for use as landing grounds. Solid obstructions (such as concrete blocks), posts or stakes, felled trees, haystacks, scaffolding with wire and trenching were the main measures used.

No records of any barrage balloons or anti-landing obstacles on or in close proximity to the Site have been found.

4.4 Anti-Invasion Defences

Defence structures are a potential source of UXB as they were especially targeted by low flying enemy aircraft, particularly during 'tip and run' raids which were common in industrialised regions. These defences may also be associated with small caches of UXO in the form of small arms, used by the troops manning the emplacement.

The rapid advance of German Troops into France, Holland and Belgium after the start of WWII prompted the War Office to review the vulnerability of the UK to invasion and a decision was taken to begin work on a national plan of anti-invasion defences. Static defences were built to interrupt and delay the progress of any invading force.

Coastal defences were strengthened (the 'Coastal Crust'). These defences included barbed wire entanglements and minefields, which were often combined to give defence in depth.

Inland, lines of defence structures were constructed along 'Stop Lines' in order to impede enemy progress for long enough to allow mobile defending forces to counter-attack.

Stop Lines included the fortification of key 'centres of resistance', such as river crossings and important road or rail junctions that could seriously hamper the enemy's advance across country. Bridges were mined for demolition and tank traps installed.

Stop Lines were further integrated into a network of fortified nodal points and 'Anti-Tank (AT) Islands'.

No records of any anti-invasion defences on or in close proximity to the Site have been found.

4.5 Pillboxes, Mortar and Gun Emplacements

Defences also included spigot mortar positions and gun emplacements.

Spigot mortars, also known as Blacker Bombards, were used primarily in an anti-tank role at road blocks or to defend airfields. Typically they fired a 20 pound (lb) HE mortar bomb. The fixed positions, in weapons pits with ammunition lockers, were frequently positioned near pillboxes.

Spigot mortar positions could be either fixed or mobile.

No records of any spigot mortar or machine gun emplacements on or in close proximity to the Site have been found.

Pillboxes provide a potential UXO hazard both from the storage, use and disposal of ordnance associated with them and from UXB because they were targeted by enemy aircraft.

Pillboxes were common along Stop Lines, perimeters of airfields, potential land invasion sites and around important civil sites. Several different designs existed including Seagull Trenches (semi-buried structures), Alan Williams and Tett Turrets (small prefabricated pillboxes). Fortified sites, buildings or loop-holed walls also functioned as pillboxes.

No records of any pillboxes on or in close proximity to the Site have been found.

4.6 Home Guard and Auxiliary Units

Local Defence Volunteers (LDV) units, later known as the Home Guard, were located in all cities, towns and large villages. Anti-invasion defences were to be defended by the Home Guard and regular Army troops for as long as possible in the event of an invasion. The troops were issued with 'No Withdrawal' orders.

Important elements of the ordnance supply for the use of the Home Guard included substantial supplies of Mills bombs (fragmentation grenades) and Self Igniting Phosphorus (SIP) grenades as well as machine gun and small arms ammunition.

Records of Home Guard activities and related sites are rarely preserved. Storage and disposal of munitions by the Home Guard was poorly documented and surplus supplies were either buried or dumped in lakes and ponds.

Given the irregular nature of this activity, the possibility of items of UXO being discovered at any locations occupied or used for training by the Home Guard can never be totally discounted.

In addition to the regular Home Guard, Auxiliary Units existed which were made up of guerrilla troops trained in sabotage and assassination in case of invasion. Sites used by these Units were Top Secret and many locations are still unknown

No records of any Home Guard or Auxiliary Unit activity on or in close proximity to the Site have been found.

The 13th City of London (West Ham) Battalion was active in the region, patrolling local transport infrastructure and public utilities, in addition to manning anti-invasion defences.

Home Guard and Auxiliary Unit activity is not considered to provide a source of UXO hazard to the Site.

4.7 Minefields and Mined Locations

Minefields were laid along the coast, in estuaries and along the banks of major rivers to deter infantry invasion. Strategic points such as bridges and gaps in cliffs were mined to impede enemy advance. Most of the mined locations in the UK have been cleared and the risk of finding UXO in these areas is considered to be low.

No records of any minefields or mined locations on or in close proximity to the Site have been found.

5 MILITARY AIRFIELDS

Military airfields offer the potential for significant UXO hazards due to the use, storage and disposal of ordnance and as a result of enemy bombing during WWI and WWII.

Airfields active during WWII were targeted by the Luftwaffe, providing a potential source of UXB on the airfield. As bombing accuracy was so poor during WWII, it is likely to find UXB in the surrounding areas. Aircraft crashes are also associated with operational airfields.

No records of any military airfields on or in close proximity to the Site have been found.

The nearest operational military airfield was Royal Air Force (RAF) Fairlop, located approximately 10km northeast of the Site.

RAF Fairlop opened in 1915 as Royal Flying Corps (RFC) Hainault Farm. It housed Home Defence squadrons responsible for the defence of London during WWI.

During WWII, RAF Fairlop was requisitioned as a satellite airfield for RAF Hornchurch which was under the control of Fighter Command.

In September 1944, RAF Fairlop became No. 24 Balloon Centre and a number of balloon squadrons were based there until the end of WWII. The airfield closed in 1946.

Military airfields are not considered to provide a source of UXO hazard to the Site.

5.1 Aircraft Crashes

Aircraft crash sites are a known UXO hazard. The MoD advises that if crashed aircraft are found, the safest policy is to leave them alone where possible. Unless disturbed there is no statutory requirement for the MoD to clear such sites.

No records of any aircraft crashes on or in close proximity to the Site have been found.

6 EXPLOSIVES AND MUNITIONS ESTABLISHMENTS AND DEPOTS

Explosives and munitions manufacturing or storage sites offer a particularly high risk from both explosive substances and UXO. Standard procedures of explosive/ordnance disposal through burial or burning means that explosive and UXO hazards will be present in some areas of such establishments.

In addition, UXB hazards may be present as a result of enemy bombing during WWI and WWII.

6.1 Explosives and Ordnance Factories

No records of any explosives or ordnance factories on or in close proximity to the Site have been found.

During WWI Brunner Mond & Company produced TNT at their factory in Silvertown, approximately 0.8km northwest of the Site. There was a large explosion at the factory on the 19th January 1917, which resulted in extensive damage to the surrounding area.

Munitions manufacture and storage was carried out at the Royal Arsenal, Woolwich, approximately 4.5km southeast of the Site, from the late 17th Century.

During WWI it manufactured a range of guns and shells, as well as chemical weapons.

During WWII it manufactured guns and ammunition, as well as fuzes and explosive torpedo heads.

Explosives and ordnance factories are not considered to provide a source of UXO hazard to the Site.

6.2 Munitions Stores

Local ammunition caches would have been present near to defended road blocks, pillboxes, HAA and LAA sites. Most of those associated with the anti-invasion sites are understood to have been cleared.

No records of any munitions stores on or in close proximity to the Site have been found.

6.3 Informal Munitions Depots

Informal munitions depots, often made by requisitioning roadside lay-bys or parks. Other informal munitions depots were commonly located in areas of woodland or on train wagons along sidings in marshalling yards.

No records of any informal munitions depots on or in close proximity to the Site have been found.

6.4 Munitions Disposal Areas and Bomb Cemeteries

Munitions disposal areas were often made by requisitioning open areas of land, usually away from habitation. Marshland, beaches or sand dunes were frequently used for this purpose. Disposal of munitions was carried out in many different ways, ranging from destruction to burial. Full records were not necessarily maintained for these locations, and so they can potentially be a source of UXO.

No records of any munitions disposal areas or bomb cemeteries on or in close proximity to the Site have been found.

7 FIRING RANGES AND MILITARY TRAINING AREAS

By their nature, firing ranges and military training areas represent a potential source of UXO due to associated training activities. The training will involve both practice and live munitions and will offer a significant risk from a very wide range of potential UXO.

7.1 Small Arms Ranges

Small arms ranges (such as rifle ranges) and close combat ranges (such as mortar and grenade ranges) are likely to provide a significant source of UXO. It should be noted that even on small arms ranges, larger munitions such as mortars or grenades cannot be discounted.

No records of any small arms ranges on or in close proximity to the Site have been found.

7.2 Artillery Ranges

Artillery ranges will have utilised a wide range of munitions, predominantly shells, although close combat munitions such as mortars, or larger munitions such as bombs, cannot be discounted.

No records of any artillery ranges on or in close proximity to the Site have been found.

7.3 Bombing Ranges

Bombing ranges will have primarily used bombs, although other munitions such as shells and close combat munitions such as mortars cannot be totally discounted.

No records of any bombing ranges on or in close proximity to the Site have been found.

7.4 Training Areas

Training areas will have primarily used blank ammunition or practice shells in 'dry' areas, although live munitions such as shells and close combat munitions such as mortars cannot be discounted in any training area.

No records of any military training areas on or in close proximity to the Site have been found.

8 EXPLOSIVE ORDNANCE CLEARANCE ACTIVITIES

Official UK bombing statistics have been compiled from both British and German sources. There were differences in the way the figures were originally reported and collated which has led to discrepancies in the summary data.

Based on data from 1939 to 1945, War Office statistics indicate that 200,195No. HE bombs exploded within Great Britain. Additionally, 25,195No. HE bombs (representing 11%) were recorded as UXBs. However, records from the Royal Engineers who were responsible for bomb disposal at the time indicate that as of 27th February 1946 upwards of 45,000No. UXBs were disposed of.

On average 8.5% UXBs later self-exploded. In some cases the bombs had delayed action fuzes or were never intended to explode, their purpose being to cause inconvenience and fear.

Given the discrepancy in records and the fact that UXBs are still being found unexpectedly, it is clear that the original figures are understated and provide only an approximation of the number of potential UXBs in the UK.

War Office statistics also show that between October 1940 and May 1941 most of the UXBs (93%) were either 50kg or 250kg. It should be noted that details of the recovery and the size of the UXB were not always accurately reported.

The larger WWII UXBs are often difficult to recover due to both penetration depths and the presence of two or more fuzes, combined with more sensitive fillings of explosive mixtures including Amatol and Trialen.

8.1 Abandoned Bombs

No records have been found indicating that any officially abandoned bombs are located on the Site.

8.2 EOC Tasks

Zetica Ltd holds records of the following post-WWII EOC tasks being undertaken in the vicinity of the Site.

11th February 2018

1No. 500kg HE bomb was discovered by workers at the King George V Dock, within approximately 3km southeast of the Site. This was towed out to sea and destroyed.

The MoD has provided no additional information on official EOC tasks on the Site.

9 UXO HAZARD ASSESSMENT

9.1 UXO Hazard Level

The definitions for the levels of UXO hazard are provided below.

Definitions of UXO Hazard Level for a Site

Hazard Level	Definition
Very Low	There is positive evidence that UXO is not present, e.g. through physical constraints or removal.
Low	There is no positive evidence that UXO is present, but its occurrence cannot be totally discounted.
Moderate	There is positive evidence that ordnance was present and that other uncharted ordnance may be present as UXO.
High	There is positive evidence that UXO is present.
Very High	As high, but requires immediate or special attention due to the potential hazard.

No records have been found indicating that the Site was bombed and no other significant source of UXO hazard has been identified on the Site.







Given this, it is considered that the Site has a low UXO hazard level, as shown in Figure 5.

Figure 5 UXO hazard zone plan of the Site



Source: Google Earth

Not to Scale

Legend	Very Low		Low		Moderate	
	High		Very High		Site boundary	

10 UXO RISK ASSESSMENT

10.1 UXO Risk Level

A UXO risk assessment has been undertaken for the proposed works, taking into consideration the identified UXO hazard.

Firstly, the probability of encountering UXO (PE) has been considered and rated for the different construction techniques, as detailed below.

Probability of Encounter (PE)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Secondly, the probability of detonating a UXO (PD) has been considered and rated for the different construction techniques, as detailed below.

Probability of Detonation (PD)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Next, the probability of encountering and detonating the UXO (PE x PD) have been used to generate an overall likelihood rating (P).

P = PE x PD	LIKELIHOOD of Encounter and Detonation	Rating
21 to 25	Frequent, highly likely, almost certain.	5
16 to 20	Probable, more likely to happen than not.	4
6 to 15	Occasional, increased chance or probability.	3
2 to 5	Remote, unlikely to happen but could.	2
1	Improbable, highly unlikely.	1
0	Impossible	0

P ranges from 25, a certainty of UXO being encountered and detonated on the Site by engineering activity, to 0, a certainty that UXO does not occur on the Site and will not be detonated by engineering activity.

The likelihood of encountering and detonating UXO during site works is multiplied by the severity of such an event occurring (P x S), in order to provide a risk level using the following matrix.

Severity (S)	Rating
Multiple fatalities	5
Major injury, long term health issues, single fatality.	4
Minor injury, short term health issues, no fatalities.	3
First aid case but no lost time or ill health.	2
Minor injuries, no first aid.	1
No injuries.	0

UXO Risk Matrix							
LIKELIHOOD (P)	SEVERITY (S)						
		5	4	3	2	1	0
	5	25	20	15	10	5	0
	4	20	16	12	8	4	0
	3	15	12	9	6	3	0
	2	10	8	6	4	2	0
	1	5	4	3	2	1	0
	0	0	0	0	0	0	0

The final risk assessment for potential works on the Site is given in Table 4.

Table 4	UXO risk assessment for the Site							
Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
UXB	Shallow Excavations	1	1	1	1	5	5	Low
	Deep Excavations	1	1	1	1	5	5	Low
	Piling/Boreholes	1	1	1	1	4	4	Low
Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
	Deep Excavations	1	1	1	1	4	4	Low
	Piling/Boreholes	1	1	1	1	3	3	Low
PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)								
Shallow Excavations defined as <1.0m below ground level (bgl.)								

UXO Risk	Matrix Rating	Definition
Very Low	0-1	Little action is required by the client provided that suitable records and procedures are in place to ensure appropriate action is undertaken should the UXO risk level change.
Low	2-5	Tolerable to the client as engineering activity need not alter if UXO related procedures and controls are strictly adhered to.
Moderate	6-15	May be tolerable for the client, but it is prudent to reduce the risk where cost effective and reasonably practicable.
High	16-20	Tolerable to the client only where further risk reduction is impracticable or disproportionate to the risk involved. Essential that all practicable measures are taken to reduce the level of risk.
Very High	21-25	Unacceptable to the client except in extraordinary circumstances. Imperative that all control measures are taken.

10.2 Risk Mitigation Recommendations

To ensure that the UXO risk is reduced to As Low As Reasonably Practicable (ALARP) the following mitigation is advised:

Excavations

It is important to raise the awareness of those involved in excavations so that in the unlikely event that a suspect item is discovered, appropriate action is taken. This can be achieved through UXO awareness briefings to site staff.

Typically ~1hour in duration, these briefings will be expected to provide site workers with:-

- Background to the potential UXO hazards that could be encountered.
- Awareness of how the UXO hazard could present a risk.
- Knowledge of what to do in the event that a suspect item is encountered.

The briefing is to be provided along with back-up materials such as UXO awareness posters, emergency contact numbers and other background information to assist site workers in becoming familiar with what potential UXO can look like.

The materials can also be used by key staff to pass on the relevant points of the induction to others who visit or work on the Site.

By providing the UXO awareness briefing, it ensures that in the unlikely event that UXO is encountered:-

- All site staff take appropriate action.
- A support mechanism and points of contact are established.
- The likelihood of harm to people or property is reduced.
- Significant delays to site work are prevented.

Boreholes/Piles

Clearance certification for borehole or pile locations is considered prudent only if a zero tolerance to risk is adopted. Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.

Table 5 below gives recommended actions in relation to the potential UXO risk level and the anticipated Site activity. Further advice on the mitigation methods can be provided by Zetica on request.

Table 5		Risk mitigation for assumed Site activities			
Risk Level	Typical Future Activity on the Site				
	None	Shallow Excavations (<1.0m)	Deep Excavations (>1.0m)	Boreholes or Pile Construction	
Very low	Ensure suitable records and procedures are in place to highlight the risk should future development be planned.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	
Low	As very low.	As very low. + It is considered prudent to include some UXO awareness training in site inductions.	As very low. + It is considered prudent to include some UXO awareness training in site inductions.	As very low. +Clearance certification for borehole or pile locations would be considered prudent only if a zero tolerance to risk is adopted. Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.	
Moderate	As very low.	As low. +Non-intrusive investigation methods considered prudent where practical. +Alternatively, EOC Engineer supervision is considered prudent.	As low. +Non-intrusive investigation methods considered prudent where practical. +Alternatively, EOC Engineer supervision is considered prudent.	As low. +Clearance certification for borehole or pile locations is considered essential.	
High	As very low.	As moderate. +Non-intrusive investigation methods considered essential where practical. + Alternatively, EOC Engineer supervision is considered essential.	As moderate. +Non-intrusive investigation methods considered essential where practical. + Alternatively, EOC Engineer supervision is considered essential.	As moderate.	
Very High	Requires immediate or special attention.	Requires immediate or special attention.	Requires immediate or special attention.	Requires immediate or special attention.	
The above table is for guidance only.					

APPENDICES

Appendix 1 WWII Bombing Incident List

7th July 1940

1No. HE bomb fell on Beckton Road, between Egham Road and Denmark Street, within approximately 0.3km southwest of the Site.

5th September 1940

IBs fell on Prince Regent Lane Playing Fields, approximately 0.2km southeast of the Site.

IBs fell on the junction of Prince Regent Lane and Ilkley Road, approximately 0.2km southeast of the Site.

6th September 1940

1No. HE bomb fell on Devonshire Road, approximately 0.4km south of the Site.

7th September 1940

1No. HE bomb fell on Beckton Road Park, near Prince Regent Lane, approximately 0.2km southeast of the Site. This was recorded as UXB.

1No. HE bomb fell on the junction of Jersey Road and Prince Regent Lane, approximately 0.3km southeast of the Site.

1No. HE bomb fell on West Ham Stadium grounds, near the junction of Nottingham Road and Otley Road, approximately 0.4km southeast of the Site.

1No. HE bomb fell on Beckton Road Park, within approximately 0.4km south-southwest of the Site. This was recorded as UXB.

1No. HE bomb fell on Jersey Road, between Prince Regent Lane and Lucke Road, approximately 0.4km southwest of the Site.

1No. HE bomb fell on Varley Road, approximately 0.4km south of the Site.

1No. HE bomb fell on Mortlake Road, within approximately 0.4km southwest of the Site.

8th September 1940

1No. HE bomb fell on cricket grounds at Beckton Road Playing Fields, approximately 0.3km southwest of the Site.

1No. HE bomb fell on Beckton Road Park, within approximately 0.4km south-southwest of the Site.

1No. HE bomb fell on Jersey Road, within approximately 0.4km southwest of the Site.

1No. HE bomb fell between Nottingham Avenue and Varley Road, near West Ham Stadium, approximately, 0.4km southeast of the Site.

9th September 1940

1No. HE bomb fell on Chadwin Road, between Denmark Street and Egham Road, approximately 0.2km northwest of the Site.

1No. HE bomb fell on Beckton Road, between Prince Regent Lane and Freemasons Road, within approximately 0.4km south-southwest of the Site.

1No. HE bomb fell on the junction of Jersey Road and Freemasons Road, approximately 0.5km southwest of the Site.

10th September 1940

1No. HE bomb fell on Beckton Road Park near Prince Regent Lane, within approximately 0.1km south of the Site.

1No. HE bomb fell on Beckton Road, on the corner of Prince Regent Lane, approximately 0.1km southeast of the Site.

14th September 1940

IBs fell on the junction of Beckton Road Park and Prince Regent Lane, approximately 0.1km east of the Site.

1No. HE bomb fell on Beeby Road, between Freemasons Road and Beckton Road, approximately 0.5km southwest of the Site.

IBs fell on Beeby Road, approximately 0.5km southwest of the Site.

15th September 1940

IBs fell on the junction of Burley Road and Prince Regent Lane, approximately 0.3km southeast of the Site.

1No. HE bomb fell on Jersey Road, between Prince Regent Lane and Lucke Road, approximately 0.4km southwest of the Site.

IBs fell on Mortlake Road, between Lucke Road and Prince Regent Lane, approximately 0.4km southwest of the Site.

18th September 1940

1No. HE bomb fell on the junction Mortlake Road and Lucke Road, approximately 0.4km southwest of the Site.

1No. HE bomb fell on Mortlake Road, between Lucke Road and Prince Regent Lane, approximately 0.4km southwest of the Site. This was recorded as UXB.

1No. HE bomb fell on Mortlake Road, between Prince Regent Lane and Freemasons Road, within approximately 0.5km southwest of the Site.

19th September 1940

1No. HE bomb fell on the junction of Brock Road and Cranley Road, approximately 0.2km northwest of the Site.

1No. HE bomb fell on Holborn Road, near Westport Road, approximately 0.3km northwest of the Site.

20th September 1940

IBs fell on the junction of Prince Regent Lane and Jenkins Lane, approximately 0.4km northeast of the Site.

21st September 1940

1No. HE bomb fell on Plaistow Secondary School, approximately 0.5km north of the Site.

22nd September 1940

IBs fell on Colman Road, near West Ham Stadium, approximately 0.3km southeast of the Site.

23rd September 1940

1No. HE bomb fell on West Ham Stadium grounds, near the junction of Colman Road and Beckton Road, approximately 0.4km southeast of the Site.

9th October 1940

1No. HE bomb fell on Jersey Road, approximately 0.4km southwest of the Site.

1No. HE bomb fell on Becton Road Park, between Jersey Road and Beckton Road, within approximately 0.4km south-southwest of the Site.

14th October 1940

IBs fell on Mortlake Road, between Lucke Road and Freemasons Road, approximately 0.5km southwest of the Site.

IBs fell on the junction on Sophia Road and Freemason's Road, approximately 0.5km southwest of the Site.

15th October 1940

1No. HE bomb fell on West Ham Stadium grounds, near Nottingham Avenue, approximately 0.3km southeast of the Site. This was recorded as UXB.

1No. HE bomb fell on the junction Otley Road and Nottingham Avenue, approximately 0.4km southeast of the Site.

1No. HE bomb fell on West Ham Stadium, approximately 0.4km southeast of the Site. This was recorded as UXB and removed.

IBs fell on the junction of Bingley Road and Prince Regent Lane, approximately 0.4km southeast of the Site.

17th October 1940

1No. HE bomb fell on West Ham Stadium grounds, near the junction of Nottingham Road and Otley Road, approximately 0.4km southeast of the Site.

1st November 1940

1No. HE bomb fell on Egham Road, between Beckton Road and Chalk Road, approximately 25m west of the Site.

1No. HE bomb fell on the junction of Beckton Road and Prince Regent Lane, approximately 0.1km east of the Site.

1No. HE bomb fell in the centre of Beckton Road playing fields, approximately 0.2km southwest of the Site.

1No. HE bomb fell on Holborn Road, near Egham Road, approximately 0.2km northwest of the Site.

1No. HE bomb fell on Ilkley Road, approximately 0.3km southeast of the Site.

1No. HE bomb fell on Beckton Road between Prince Regent Land and Freemasons Road, within approximately 0.4km from the Site.

1No. HE bomb fell on Sophia Road, approximately 0.4km southwest of the Site.

16th November 1940

1No. HE bomb fell in West Ham Stadium, at the rear of the east side stands, approximately 0.5km southeast of the Site.

1No. HE bomb fell on the junction of the Beeby Road and Beckton Road, approximately 0.5km southwest of the Site.

18th November 1940

1No. Oil Bomb (OB) fell on Cumberland Road, between Barking Road and Esk Road, within approximately 0.4km west-northwest of the Site.

21st November 1940

1No. HE bomb fell on the junction of Botha Road and Chalk Road, approximately 50m northeast of the Site.

9th December 1940

1No. OB fell on Beckton Road Park, between Prince Regent Lane and Freemasons Road, within approximately 0.4km south-southwest of the Site.

27th December 1940

1No. HE bomb fell on Beckton Road cricket ground, within approximately 0.4km south-southwest of the Site. This was recorded as UXB and removed.

12th January 1941

IBs fell on Chadwin Road, Brock Road and Cranley Road, approximately 0.2km northwest of the Site.

IBs fell on Beckton Road, between Egham Road and Denmark Street, within approximately 0.3km southwest of the Site.

IBs fell on Palmer Road, between Westport Road and Jones Road, approximately 0.3km northwest of the Site.

IBs fell on the junction of Holborn Road and Westport Road, approximately 0.4km northwest of the Site.

IBs fell on Cumberland Road, between Denmark Street and Lincoln Road, approximately 0.4km northwest of the Site.

IBs fell on the junction of Sophia Road and Freemason's Road, approximately 0.5km southwest of the Site.

IBs fell on Holborn Road, New Barn Street and Cumberland Road, within approximately 0.5km north-northwest of the Site.

19th March 1941

IBs fell on the junction of Alliance Road and Prince Regent Lane, approximately 0.2km northeast of the Site.

IBs fell on Botha Road, approximately 0.2km north-northeast of the Site.

IBs fell on Selby Road, approximately 0.2km northwest of the Site.

IBs fell on 34 and 21 Holborn Road, approximately 0.2km northeast of the Site.

2No. HE bombs fell on Bennet Road, approximately 0.3km northeast of the Site.

IBs fell on Burley Road, approximately 0.3km southeast of the Site.

IBs fell on Jersey Road, approximately 0.4km southwest of the Site.

2No. HE bombs fell on Jersey Road, approximately 0.4km southwest of the Site.

IBs fell on Beckton Road Park, within approximately 0.4m south-southwest of the Site.

1No. HE bomb fell on Beckton Road Park, within approximately 0.4m south-southwest of the Site. This was recorded as UXB.

2No. HE bombs fell on Sophia Road, approximately 0.5km southwest of the Site.

IBs fell on Sophia Road, approximately 0.5k southwest of the Site.

20th March 1941

1No. Parachute Mine (PM) fell on waste ground at the junction of Barking Road and West Ham By Pass Road, approximately 0.3km northeast of the Site. This was recorded as an Unexploded Parachute Mine (UXPM) and made safe.

IBs fell on Otley Road, approximately 0.3km southeast of the Site.

IBs fell on Colman Road, near the West Ham Stadium, approximately 0.3km southeast of the Site.

IBs fell on the junction of Jersey Road and Prince Regent Lane, approximately 0.3km southeast of the Site.

IBs fell on Mortlake Road, within approximately 0.5km southwest of the Site.

IBs fell on Ripley Road, approximately 0.5km southeast of the Site.

19th April 1941

1No. HE bomb fell on Otley Road, approximately 0.3km southeast of the Site.

21st April 1941

1No. HE bomb fell on the junction of Colman Road and Nottingham Avenue, approximately 0.2km southeast of the Site.

11th May 1941

1No. 500kg HE bomb fell on 26 Chalk Road, approximately 50m northwest of the Site.

1No. 250kg HE bomb fell on 235 Prince Regent Lane, approximately 0.2km northeast of the Site.

1No. HE bomb fell on Tollgate School, approximately 0.3km northeast of the Site.

IBs fell on Maybury Road, approximately 0.3km northeast of the Site.

IBs fell on Bingley Road, approximately 0.4km southeast of the Site.

1No. HE bomb fell on Beckton Road Park, within approximately 0.4m south-southwest of the Site.

20th April 1941

1No. 250kg HE bomb fell on the junction of Prince Regent Lane and Jersey Road, approximately 0.3km southeast of the Site.

1No. 500kg HE bomb fell on the RAF Balloon Barrage on school playing fields, Freemasons Road, approximately 0.4km southwest of the Site.

8th August 1942

1No. HE bomb fell on Beckton Road Cricket Ground, within approximately 0.4km south-southwest of the Site. This was recorded as UXB.

2nd February 1944

1No. V1 fell on the junction of Palmer Road and Newport Avenue, approximately 0.4km northwest of the Site.

24th February 1944

1No. HE bomb fell on Plaistow Secondary School, Prince Regent Lane, approximately 0.5km north of the Site.

15th March 1944

1No. HE bomb fell on Beckton Road, between Prince Regent Lane and Freemasons Road, within approximately 0.4km south-southwest of the Site.

8th August 1945

1No. V1 fell on the junction of Colman Road and Prince Regent Lane, approximately 0.3km southeast of the Site.

Appendix 2 UXO Hazard and Ordnance Types

When assessing the risk from UXO including UXB, it is important to be aware of ordnance type and function. The following Section briefly describes the more common types of UXO. More data on these can be found at <http://zeticauxo.com/downloads-and-resources/ordnance-data-sheets/>.

A2.1 Small Arms Ammunition

Small Arms Ammunition (SAA) is one of the more recognisable categories of ordnance which is primarily designed for anti-personnel use. SAA include items such as bullets, generally up to a calibre (diameter) of 20mm.

Larger calibre small arms munitions can contain fuze mechanisms and high explosives or pyrotechnic fillings and may have been used for anti-aircraft or anti-vehicle purposes.

Generally small arms ordnance has a relatively low risk as UXO, although the larger calibre categories may have the same detonation risk as larger high explosive ordnance. SAA is often associated with discarded ammunition boxes around firing practice ranges. The Plate below illustrates some common SAA.

Plate

Photograph of typical WWII small arms ammunition



Source: Google Images

A2.2 Hand Grenades

Hand grenades can be filled with explosives or chemicals and have 3No. main parts, a body, a fuze with a pull ring and a safety-clip assembly. Fragmentation grenades are the most common and have a metal or plastic body filled with an explosive. Most use a burning delay fuze that functions for 3 to 5 seconds after the safety lever is released. Some, such as smoke grenades, are activated instantly when the lever is released.

The Plate below illustrates the typical character and condition of the most commonly found No. 36 hand grenades (Mills Bombs).

Plate	Photographs of a typical and an excavated WWII No. 36 hand grenades
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Source: IWM



Source: Zetica Ltd

A2.3 Projected Grenades




Projected grenades are among the most commonly found UXO items, particularly the 40mm type. These contain high explosives and use a variety of fuzes, including some of the most sensitive internal impact-fuzing systems. They are extremely dangerous and can explode if moved or handled.

A2.4 Mortars

A mortar is a short tube designed to fire a projectile at a steep angle. Mortars can range from approximately 50mm to 280mm in diameter and can be filled with explosives, toxic chemicals, white phosphorous or illumination flares. They generally have a thinner metal casing than projectiles, but use the same types of fuzing and stabilisation.

During WWII there are records that the target areas of RAF practice bombing ranges were occasionally used for mortar training.

The Plate below shows typical 2-inch (left) and 3-inch (right) mortar bombs.

Plate	Photographs of WWII 2-inch and 3-inch mortars
<div data-bbox="256 344 783 952">  </div> <div data-bbox="823 344 1350 952">  </div>	
<p>Source: IWM</p>	
<p>A2.5 Shells</p> <p>Shells are a projectile containing an explosive charge designed to burst the casing that can contain High Explosives, pyrotechnic compounds or other chemicals.</p> <p>Shells can be found in a range of sizes, from <20mm to several times this size. The most likely shells to be found on the Site are Small Arms Ammunition (SAA) or UXAA shells that have fallen back to the ground unexploded.</p> <p>Most commonly used anti-aircraft shells were 2" and 3.7" HE shells.</p> <p>If fired and found as UXO, shells can offer a particular hazard from accidental detonation as they can have sensitive fuze mechanisms. A fuze is a device which incorporates mechanical, electrical, chemical or hydrostatic components to initiate a train of fire or detonation.</p> <p>The Plate below is a photograph of a 3.7" UXAA shell found in Camberwell, London.</p>	
Plate	Photograph of a recently excavated 3.7" AA shell
<div data-bbox="256 1543 1350 1901">  </div>	
<p>Source: Zetica Ltd</p>	

A2.6 Incendiary Bombs

Incendiary Bombs (IBs) ranged from small 1kg thermite filled, magnesium bodied bombs to a 250kg 'Oil Bomb' (OB) and a 500kg 'C300' IB. By far the most common air dropped devices across the UK during WWII were small 1kg to 2kg IBs.

In some cases the IBs were fitted with a very small High Explosive (HE) bursting charge. This exploded after the bomb had been alight for a few minutes causing burning debris to be scattered over a greater area. The C300 bombs were similar in appearance to 500kg HE bombs.

The small amount of HE, if any, and the almost negligible potential for IBs to remain active after more than 65 years in the ground means that these items have very little prospect of causing damage. In the majority of cases if IBs are found in the ground, the incendiary materials have deteriorated to such an extent that they are considered to provide a low UXO hazard level.

However, since magnesium and phosphorus were common components in IBs, some localised chemical contamination may occur where the contents have leached out of the IB into the surrounding soil.

The Plate below shows a 1kg IB and a variety of fragmentary remains of IBs recovered by the Civil Defence during WWII.

Plate Photographs of a 1kg IB and IB fragments



Source: IWM



Source: Swansea Museum

A2.7 German High Explosive Bombs

Probably the most common and certainly most publicised UXOs to be found in the UK are bombs. Air dropped bombs, as a result of WWII enemy action, are found on a relatively frequent basis as UXO. They tend to be highly publicised (at least on a local basis) due to the common disruption where an evacuation of the potentially affected area is put in place.

The amount of High Explosive and the potential for a fuze to still be activated means that these devices have the prospect of causing some of the most widespread damage. WWII bombs were particularly sophisticated for their time, with anti-tamper fuzes.

Many German bombs were designed to not explode on impact and instead to cause disruption as a UXB. Some fuzes were set with a delay time of over 70 hours. During this time, an anti-tamper fuze could also be activated to detonate should it be disturbed.

The most commonly used bombs during WWII were the 50kg and 250kg sized general purpose bombs. Less frequently, the 500kg bomb was also used. Larger bombs were used, but so infrequently that any assessment of hazard is more typically based on bombs ranging up to 500kg only.

It should be noted that the June 2008 find of a 1000kg bomb in London, does demonstrate that larger bombs can be found and any risk mitigation measures should consider this.

The Plate below shows the variety of UXB recovered by the Civil Defence during WWII.

Plate Photograph of a variety of UXB recovered by the Civil Defence during WWII



Source: IWM

A2.8 Detonators, Gains and Fuzes

Bomb components such as detonators, gains and fuzes were stored at operational airfields during WWII and typically contained some type of explosive charge to initiate the detonation of a munition.

A wide variety of these components were used and examples of some common fuzes are shown in the Plate below.

Plate	Photographs showing examples of WWII fuzes
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Source: Zetica Ltd



A2.9 Land Mines

Wartime activities provide numerous sources of UXO within the land environment. Whilst efforts have been made to clear the known British minefields, it was common for mines to become lost for a variety of reasons and so not recovered. Additionally, such munitions might have been disposed of on an unofficial basis and so no records were kept.

Most of the mined beaches and other land areas in the UK have been cleared by the MoD. Occasionally, wave action or activities such as bombing caused mines to become displaced and these were missed as part of any past clearance activities.

The Plate below is a photograph of a typical WWII land mine used on the land area, beaches and cliffs around Britain. The example on the right was found at Gatwick Airport, formerly RAF Gatwick.

Plate	Photographs of original and recently excavated WWII land mines
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Source: IWM



Source: Zetica Ltd

A2.10 Home Guard Weapons

Initially, the Home Guard's armoury was largely second-hand and much of it was of WWI vintage. Personal weapons (such as shotguns) and home-made devices were also employed.

By the end of WWII, some units were well equipped with a wide variety of small arms and munitions.

These included .32, .38 and .455 revolvers, .303 P14, .300 P17 and .303 Canadian Ross rifles, anti-tank rifles and a variety of Sub- Machine Guns (SMG) such as the .45 Thompson and 9mm Sten Guns.

Other heavier Machine Guns (MG) at their disposal included Browning, Hotchkiss, Lewis, Vickers and Marlin MG. Sub-artillery weapons were developed for them, including grenade throwers (the Northover Projector) and spigot mortars (the Blacker Bombard). 2-pdr anti-tank guns and Projector, Infantry Anti Tank (PIAT) weapons were in circulation amongst some units, and the Home Guard also manned AA guns later in WWII.

Explosives were available to some Home Guard units and were used and stored by all Auxiliary Unit patrols. As well as the flame fougasse and hand grenades detailed in this Appendix, the Home Guard had stocks of Molotov Cocktails, Sticky Bombs and SIP grenades.

In October 2006 a cache of 76No. SIP grenades was found in a garden at Seend, Wiltshire. In October 2008, a further 26No. SIP grenades were discovered in a garden in Wimborne, Dorset. Similar caches were discovered in October 2009 in Hove, Sussex and during May 2010 in Halesowen in the West Midlands, and a further cache of 20No. was uncovered on a construction site at Birdlip, Gloucestershire, in July 2010.

Also in July 2010, a box of 24No. SIP grenades was found on Cogden Beach, Dorset. In April 2012, more than 8No. SIP grenades were found on a construction site in Banbury and destroyed by members of the Army Royal Logistic Corps (RLC).

In March 2015, 80No. SIP grenades were found at a building site in Eastbourne, some of which exploded before they could be made safe by a Bomb Disposal unit.

Most recently, in May 2016, 1No. No. 76 SIP grenade was found during excavation at Chapel Point, Lincolnshire forcing works to be delayed. During WWII, the site was occupied by a pillbox and gun emplacement associated with the heavily-defended 'Coastal Crust', manned by Home Guard units. The device was removed safely.

In January 2017, a cache of 24No. SIP grenades was discovered at Derriford, Plymouth and made safe by a Royal Navy Bomb Disposal Unit.

Between December 2017 and February 2018, at least 194No. SIP grenades were found on a building site in Cambridgeshire.

The Plate below shows 2No. recently discovered SIP grenades.

Plate	Photograph of No. 76 SIP grenades
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Source: Zetica Ltd

Given the irregular nature of Home Guard activity, the possibility of items of UXO or weapons being discovered at any locations occupied or used for training by them can never be totally discounted.

A2.11 UXO Migration

It is possible for explosive material, UXO or ordnance scrap to migrate to a site during landfill or dredging operations or other ground works which import Made Ground or natural materials already containing UXO. It is important to understand the nature and age of such landfill or dredging operations when assessing the potential UXO hazard level on the site.

A2.12 Effects and Consequences


In the UK, there are no recorded incidents since the decade after WWII of a UXB accidentally detonating. In recent years, bombs have been found that have fuze mechanisms that have started to operate indicating that given the right conditions a UXB may still function.

In June 2008 the UXB uncovered in the Lea Valley caused difficulty to No. 33 Regiment (Explosive Ordnance Disposal) Royal Engineers because the fuze mechanism started to operate.

The 1,000kg 'Hermann' bomb, the first of this size to be found in over 30 years, took 5 days to deactivate. This demonstrates that larger bombs can be found and any risk mitigation measures should provide the option to deal with this size of device. Since WWII, UXBs have been found on a regular basis in London.

Since WWII, UXBs have been found on a regular basis throughout Britain. Some of the most recent significant cases are described below.

In January 2016, Zetica discovered 3No. 500lb British UXB at a former airfield in Cambridgeshire. These were destroyed in controlled explosions. The Plate below is a photograph of one of the bombs.

Plate	Photograph of a recently excavated WWII British 500lb GP bomb
	
Source: Zetica Ltd	
<p>On the 12th May 2016, 1No. 250kg UXB was found on a building site in Bath. It was made safe and then taken to a local quarry for demolition.</p> <p>In September 2016 1No. 500kg UXB and 1No. torpedo were discovered during dredging works in Portsmouth Harbour. An additional 250kg HE bomb was discovered on the 16th November 2016. These devices were towed out to sea and destroyed in controlled explosions.</p> <p>On the 19th January 2017, 1No. 50kg UXB was found during dredging works along the River Thames Victoria Embankment in Central London. The device was towed to Tilbury in Essex where it was destroyed in a controlled explosion.</p> <p>On the 25th January 2017, 1No. 500lb British UXB and 1No. mortar shell were found in King's Forest, Thetford. They were destroyed in a controlled explosion.</p> <p>On the 2nd March 2017, 1No. 250kg German UXB was found on a building site in Brondesbury Park in the London Borough of Brent. It was defuzed by an EOD team and removed to a safe location where it was destroyed in a controlled explosion.</p> <p>On the 31st August 2017, 1No. 50kg German UXB was found in a quarry in Kings Hill, West Malling, Kent. It was destroyed in a controlled explosion.</p> <p>During October and November 2017, approximately 150No. canisters of Mustard Gas were found in a lake and adjacent woodland near the former WWII military airfield RAF Woodhall Spa, Lincolnshire. The canisters were removed to the DSTL at Porton Down for safe disposal.</p> <p>On the 11th February 2018, 1No. 500kg UXB was found in King George V Dock, adjacent to London City Airport, during construction work. The airport was closed for two days while the UXB was made safe by an EOD team from the Royal Navy. It was removed and destroyed in a controlled explosion off Shoeburyness on the 14th February 2018.</p> <p>On the 26th February 2018, an EOD team destroyed numerous items of ordnance including shells and 20mm ammunition which had been exposed by storms on Selsey Beach.</p> <p>On the 31st March 2018, 2No. 870lb British PMs were found in waters off Guernsey. They were destroyed in controlled explosions.</p>	

On the 20th May 2018, a 1,000kg German sea mine washed ashore at Elmer beach near Bognor Regis, West Sussex. A 1 mile exclusion zone was enforced before an EOD team towed the device out to sea for a controlled explosion.

On the 24th May 2018, numerous ordnance-related items were found on a proposed residential development in Burntwood, Staffordshire.

On the 10th July 2018, a suspected 1,000kg German UXB was found by scuba divers near Teignmouth Pier in Devon. The UXB was towed out into open sea by a RN EOD team for a controlled explosion.

On the 15th July 2018, a suspected WWI-era bomb was found on farmland near Dolwyddelan in Conwy, North Wales. It was destroyed in a controlled explosion by an EOD team.

On the 20th August 2018, an EOD team undertook a controlled explosion on Berrow beach, Somerset, after a cache of munitions – including shells, bullets, grenades and incendiary devices – was found by residents digging up a tree stump in their garden in Burnham-on-Sea.

On the 30th August 2018, a 2,000lb German PM was trawled up by a fishing vessel off Mersea in Essex. The PM was moved to an area of open sea where it was destroyed in a controlled explosion by a RN EOD team.

On the 20th November 2018, a British bomb was found on Medmerry Beach at Selsey, West Sussex. It was safely removed by an EOD team.

On the 29th November 2018 a large naval projectile was found at Wembury Point, Plymouth. It was destroyed in a controlled explosion.

Overseas

There is a long list of incidents during construction work in Germany that in some cases have led to the deaths of workers.

In June 2010, 3No. members of a bomb disposal team were killed, and 6No. others injured, whilst attempting to defuze an unexploded WWII bomb in Goettingen, Central Germany.

The bomb, the second found in Goettingen in the space of a few days, was unearthed at a depth of 7.5m during excavations for a sports stadium.

In September 2008, 17No. people were injured and considerable damage occurred to adjacent buildings when a bomb exploded on a construction site in Hattingen, Germany.

In October 2006 during road works on a motorway near Aschaffenburg in Bavaria, southern Germany, a bomb was struck by a machine and detonated. The plant driver was killed and 5No. others injured, including passing motorists.

Further details of similar finds can be found at <http://zeticauxo.com/news/>.

The effects of a partial or full detonation of ordnance are usually shock, blast, heat and shrapnel damage. A 50kg buried bomb can damage brick / concrete structures up to a distance of approximately 16m away. Unprotected personnel on the surface up to 70m away from the blast could also be seriously injured. Larger ordnance would obviously be more destructive.

Explosives rarely lose effectiveness with age, although over time mechanisms such as fuzes and gaines can become more sensitive and therefore more prone to detonation, regardless of whether the device has been submersed in water or embedded in silt, clay or similar materials.

The effects of a detonation of explosive ordnance are usually extremely fast, often catastrophic and invariably traumatic to any personnel involved.

Appendix 3 Abbreviations	
AA	Anti-Aircraft
AAF	Auxiliary Air Force
ACPO	Association of Chief Police Officers
ALARP	As Low As Reasonably Practicable
ARP	Air Raid Precaution
AXO	Abandoned Explosive Ordnance
BD	Bomb Disposal
BDS	Bomb Disposal Squad
BDO	Bomb Disposal Officer
BDU	Bomb Disposal Unit
CBRN	Chemical, Biological, Radiological and Nuclear
CMD	Conventional Munitions Disposal
DAB	Delayed Action Bomb
DCLG	Department of Communities and Local Government
EO	Explosive Ordnance
EOC	Explosive Ordnance Clearance
EOR	Explosive Ordnance Reconnaissance
ERW	Explosive Remnants of War
ESA	Explosive Substances and Articles
FFE	Free From Explosives
HAA	Heavy Anti-Aircraft
HE	High Explosive
HMEF	His Majesty's Explosive Factory
HSE	Health and Safety Executive

JSEODOC	Joint Services EOD Operations Centre
IB	Incendiary Bomb
IED	Improvised Explosive Device
IEDD	Improvised Explosive Device Disposal
LAA	Light Anti-Aircraft
LMSR	London Midland & Scottish Railway
MoD	Ministry of Defence
OB	Oil Bomb
PM	Parachute Mine
PUCA	Pick Up and Carry Away
RAF	Royal Air Force
RFC	Royal Flying Corps
SAA	Small Arms Ammunition
SIP	Self-Igniting Phosphorous
TEP	Time Expired Pyrotechnics
UP	Unrotated Projectile
USAAF	United States Army Air Forces
UXB	Unexploded Bomb
UXPM	Unexploded Parachute Mine
UXO	Unexploded Ordnance
UXUP	Unexploded Unrotated Projectile

Appendix 4 Glossary & Definitions	
Abandoned Explosive Ordnance (AXO)	Abandoned Explosive Ordnance is explosive ordnance that has not been used during an armed conflict, that has been left behind or disposed of by a party to an armed conflict, and which is no longer under control of that party. Abandoned explosive ordnance may or may not have been primed, fuzed, armed or otherwise prepared for use.
Camouflet	The type of cavity produced when a charge explodes underground without breaking the surface of the earth to form a crater.
Demil	Derived from the term 'Demilitarisation', it refers to the break down and the recycling or disposal of ordnance components.
Detonation	The high-speed chemical breakdown of an energetic material producing heat, pressure, flame and a shock wave.
Device	This term is used for any component, sub-assembly or completed ordnance, which may or may not have an explosive risk. It can apply to detonators, primers, gaines, fuzes, shells or bombs.
Explosive	The term explosive refers to compounds forming energetic materials that under certain conditions chemically react, rapidly producing gas, heat and pressure. Obviously, these are extremely dangerous and should only be handled by qualified professionals.
Explosive Ordnance (EO)	Explosive Ordnance is all munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents. This includes bombs and warheads, guided and ballistic missiles, artillery, mortar, rocket, small arms ammunition, mines, torpedoes, depth charges, pyrotechnics, cluster bombs & dispensers, cartridge & propellant actuated devices, electro-explosive devices, clandestine & improvised explosive devices, and all similar or related items or components explosive in nature.
Explosive Ordnance Clearance (EOC)	Explosive Ordnance Clearance is a term used to describe the operation of ordnance detection, investigation, identification and removal, with EOD being a separate operation.
Explosive Ordnance Disposal (EOD)	Explosive Ordnance Disposal is the detection, identification, on-site evaluation, rendering safe, recovery and final disposal of unexploded explosive ordnance.
Explosive Ordnance Reconnaissance (EOR)	Explosive Ordnance Reconnaissance is the detection, identification and on-site evaluation of unexploded explosive ordnance before Explosive Ordnance Disposal.
Explosive Remnants of War (ERW)	Explosive Remnants of War are Unexploded Ordnance (UXO) and Abandoned Explosive Ordnance (AXO), excluding landmines.

Explosive Substances and Articles (ESA)	<p>Explosive substances are solid or liquid substances (or a mixture of substances), which is either:</p> <ul style="list-style-type: none"> capable by chemical reaction in itself of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. designed to produce an effect by heat, light, sound, gas or smoke, or a combination of these as a result of a non-detonative, self-sustaining, exothermic reaction. <p>Explosive article is an article containing one or more explosive substances.</p>
Fuze	<p>A fuze is the part of an explosive device that initiates the main explosive charge to function. In common usage, the word fuze is used indiscriminately, but when being specific (and in particular in a military context), fuze is used to mean a more complicated device, such as a device within military ordnance.</p>
Gaine	<p>Small explosive charge that is sometimes placed between the detonator and the main charge to ensure ignition.</p>
High Explosive	<p>Secondary explosives (commonly known as High Explosives (HE)) make up the main charge or filling of an ordnance device. They are usually less sensitive than primary explosives. Examples of secondary explosives are: Nitro glycerine (NG), Trinitrotoluene (TNT), AMATOL (Ammonia nitrate + TNT), Gunpowder (GP), and Cyclotrimethylenetrinitramine (RDX).</p>
Munition	<p>Munition is the complete device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological or chemical material for use in military operations, including demolitions. This includes those munitions that have been suitably modified for use in training, ceremonial or non-operational purposes. These fall into three distinct categories:-</p> <ul style="list-style-type: none"> inert - contain no explosives whatsoever. live - contain explosives and have not been fired. blind - have fired but failed to function as intended.
Primary Explosive	<p>Primary explosives are usually extremely sensitive to friction, heat, and pressure. These are used to initiate less sensitive explosives. Examples of primary explosives are: Lead Azide, Lead Styphnate, and Mercury Fulminate. Primary explosive are commonly found in detonators.</p>
Propellants	<p>Propellants provide ordnance with the ability to travel in a controlled manner and deliver the ordnance to a predetermined target. Propellants burn rapidly producing gas, pressure and flame. Although usually in solid form they can be produced in liquid form. Examples of propellants are: Ballistite often found in a flake form and Cordite used in small arms ammunition.</p>
Pyrotechnic	<p>A pyrotechnic is an explosive article or substance designed to produce an effect by heat, light, sound, gas or smoke, or a combination of any of these, as a result of non-detonative, self-sustaining, exothermic chemical reactions.</p>

Small Arms Ammunition (SAA)	SAA includes projectiles around 12mm or less in calibre and no longer than approximately 100mm. They are fired from a variety of weapons, including rifles, pistols, shotguns and machine guns.
Unexploded Anti-Aircraft (UXAA) Shell	UXAA shells are army ordnance commonly containing HE, though they can also contain pyrotechnic compounds that produce smoke. Most commonly, these were 3.7" and 4.5" HE shells, although they ranged from 2" to 5.25" calibre.
Unexploded Bomb (UXB)	UXB is a common term for unexploded air-dropped munitions.
Unexploded Ordnance (UXO)	UXO is explosive ordnance that has been either primed, fuzed, armed or prepared for use and has been subsequently fired, dropped, launched, projected or placed in such a manner as to present a hazard to operations, persons or objects and remains unexploded either by malfunction or design.
V1	The Vergeltungswaffe-1, V-1, also designated Fieseler Fi 103/FZG-76, known colloquially in English as the Flying Bomb, Buzz Bomb or Doodlebug, was the first guided missile used in WWII and the forerunner of today's cruise missile.
V2	The Vergeltungswaffe 2 (V-2) ('Reprisal Weapon 2') was the first ballistic missile. It was used by the German Army primarily against Belgian and British targets during the later stages of WWII. The V-2 was the first manmade object launched into space, during test flights that reached an altitude of 189km (117 miles) in 1944.

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