

4 PRELIMINARY GEOTECHNICAL ASSESSMENT

4.1 PROPOSED FOUNDATION SYSTEM

The selection of the proposed foundation system will depend on the detailed findings of the forthcoming site-specific ground investigation, which will determine the geotechnical characteristics of the underlying strata. Other factors such as structural loading, settlement tolerances, and the type of proposed buildings will also influence the final foundation design.

Based on the anticipated ground conditions, it is expected that deep foundations, such as piles or piled raft, will be the most optimal solution for the Shared Housing Block tower. The Affordable Housing is anticipated to have a similar optimal solution although a raft only solution should not be ruled out.

Table 10 discusses the suitability of typical foundation solutions.

A detailed geotechnical investigation and design review are recommended to confirm the most appropriate foundation solution for the site. Options may be raised following the findings.

Table 10: Foundation Options Appraisal

Foundation Solution	Proposed Structure		
	General	Shared Housing Block	Affordable Housing Block
Shallow foundations (pads/strips)	Efficient and cost-effective for low-moderate loads where competent bearing strata are shallow and settlements are acceptable.	Very unlikely to be feasible due to high loads. Settlement and differential settlement likely to govern.	
Raft foundation	Can reduce differential settlement relative to pads/strips due to raft stiffness, but typically more material-intensive and requires more detailed analysis.	Unlikely to be feasible due to high loads; settlement likely to govern.	Possible but uncertain; would require detailed settlement assessment. Highly dependent on the undrained shear strength and elasticity parameters of Made Ground.
Piled raft foundation	Raft with piles to reduce settlement and/or control differential settlement. Requires soil-structure interaction assessment and load sharing between raft and piles.	Feasible and potentially optimal, allowing settlement control and potential reduction in pile numbers vs a pile-only solution (subject to analysis).	Feasible and likely optimal, providing settlement control. Highly dependent on the undrained shear strength and elasticity parameters of Made Ground.
Piled foundations (pile-only)	Well-established solution for high loads. Settlement should be assessed using pile group analysis and interaction effects where relevant.	Feasible, but may be less efficient than a piled raft if raft contribution is significant. Pile type and length to be confirmed; high loads may require larger diameter and/or longer piles.	Feasible; CFA piles may be suitable depending on loads and required pile length (to be confirmed).

4.2 PRELIMINARY GROUND MODEL

A preliminary ground model has been developed based on available British Geological Survey (BGS) borehole records located in the vicinity of the site. It should be noted that the majority of these boreholes are situated outside the site boundary and contain at most only descriptions of encountered geology. Therefore, the model provides only an indicative representation of the expected geological sequence at the site. A site-specific ground investigation will be required to confirm the actual ground conditions and verify the accuracy of this model.

According to the BGS records, the ground profile in the surrounding area typically comprises Made Ground overlying Enfield Silts and Kempton Park Gravels which are underlain by London Clay Formation, the Lambeth Group and Thanet Sands at depth. For 3 of the Borehole Logs, their levels were not recorded, thus, Google Earth elevations were used to estimate the ground levels where not recorded.

The stratum parameters were conservatively assumed considering the limited available information. Parameter values were adopted from *R.F. Craig’s ‘Soil Mechanics’*, *Tomlinson’s ‘Foundation Design and Construction’* and inferred from soil descriptions recorded in the borehole logs.

4.3 GEOTECHNICAL RISK ASSESSMENTSS

A geotechnical risk assessment has been produced for the development of the site at Ashley House, Tottenham Hale to identify and quantify potential hazards, the probability of the hazard occurring, impact and risk rating. The risk rating matrix is provided in Table 11. This risk assessment reflects the current level of understanding of the geotechnical and geoenvironmental aspects of the scheme and is subject to revisions and updates as the design progresses. Table 13 presents the preliminary geotechnical risk register.

Risk rating (R) = Probability (P) x Impact (I)

Geotechnical and geoenvironmental aspects of the scheme are subject to revisions and updates as the design progresses.

Table 11: Risk Matrix for Geotechnical Risk Assessment

			Impact			
			Severe	Medium	Mild	Minor
			4	3	2	1
Probability	High	4	Very High Risk	High Risk	Moderate Risk	Moderate Risk
	Likely	3	High Risk	Moderate Risk	Low Risk	Low Risk
	Low	2	Moderate Risk	Low Risk	Low Risk	Very Low Risk
	Unlikely	1	Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table 12: Preliminary Ground Model for the Proposed Development, using BGS boreholes.

Strata	Depth to Top Level (mbgl)	Thickness (m)	Unit Weight (kN/m³)	Strength Parameters		Note
				Undrained Strength, Cu (kPa)	Friction Angle Φ (°)	
Made Ground	0.00	0.50	16	N/A	N/A	Variable depth/material; not relied upon for bearing or stiffness.
Enfield Silts	0.50	0.80 – 1.00	14	N/A	N/A	Variable depth/material; not relied upon for bearing or stiffness.
Kempton Park Gravel	1.30 – 1.50	3.20 – 3.50	15	N/A	N/A	Variable depth/material; not relied upon for bearing or stiffness.
Weathered London Clay ¹	4.50 – 6.00	2.50	20	40 + 14z	N/A (undrained)	cu taken as 40 kPa at top of layer, increasing linearly with depth; z = depth below top of London Clay ¹ (m).
London Clay ²	8.50	12.50	20	75	N/A (undrained)	Constant cu assumed for preliminary assessment.
Lambeth Group – Cohesive	21.00	9.00	20	75	N/A (undrained)	Constant cu assumed for preliminary assessment.
Lambeth Group – Granular	30.00	7.00	20	N/A	32	φ' assumed based on engineering judgement and local experience (confirm by GI/testing).
Thanet Sands	37.00	6.70	20	N/A	33	φ' assumed based on engineering judgement and local experience (confirm by GI/testing).
Chalk	43.70	N/A	20	N/A	27	φ' assumed based on typical values (e.g., Tomlinson, Foundation Design and Construction).

Table 13: Preliminary Geotechnical Risk Assessment for the Proposed Development

Hazard	Cause	Consequence(s)	Pre-Control Risk				Proposed Mitigation
			P	I	R	Classification	
Unforeseen ground conditions	Limited site-specific intrusive data; variable Made Ground/superficial deposits; potential soft/weak zones, shrink/swell, tree influence due to proximity to Down Lanes Park, drift filled hollows.	Design changes, programme delay, increased cost (remedial works / redesign), construction risk	3	4	12	High	Undertake targeted GI (geotechnical + geoenvironmental) to confirm stratigraphy/variability; derive design parameters; update ground model and risk register; adopt observational method/hold points where uncertainty remains.
Impact on TfL/LUL infrastructure	Ground movement/vibration from basement excavation, retaining walls, piling; potential effects from temporary dewatering	Settlement/distortion of tunnels, safety/approval risk, programme delay	2	4	8	Moderate	Early engagement with TfL/LUL Asset Protection; confirm tunnel line/level; define assessment scope (movement assessment/FE checks as required); agree construction controls and monitoring (trigger levels); select low-vibration methods where practicable; manage dewatering impacts.
Excessive settlement of building foundations	Weak compressive ground Poor subgrade Soft/hard spots at formation level Increased soil surcharge following construction. Shallow foundation on soft ground	Excessive/ differential settlement across structures Potential cost of remedial work Delay on construction. Paving damage.	3	4	12	High	Appropriate and adequate risk assessment. Adopt appropriate geotechnical parameters for design. Appropriate foundation design such as CFA piles
Damage to buried utilities /third-party assets	Utilities within/adjacent to roads and footways; incomplete records; excavation and ground movement	Service strikes, outages, H&S risk, programme delay, claims	3	3	9	Moderate	Obtain utility records and undertake PAS128 survey (GPR/EML) and trial pits; establish exclusion zones; permit-to-dig; scan before excavation; hand-dig in sensitive areas; agree requirements with utility owners (incl. Thames Water).
Interface with existing / retained structures	Excavation adjacent to existing foundations/retained façades; vibration; changes in support conditions	Structural damage/cracking; differential settlement; heritage impact; delay/claims	3	3	9	Moderate	Condition surveys; confirm existing foundations/basements by records and trial pits; movement assessment and monitoring plan; design temporary works to limit ground movements (stiff retaining system, sequencing); protection measures for retained structures; establish trigger/action levels.
Unexploded ordnance (UXO)	Potential legacy UXO from WWII	H&S risk to personnel/public; programme disruption; cost	2	4	8	Moderate	Commission specialist UXO desk study and risk assessment; implement UXO management plan; consider supervised intrusive works / clearance where required; include UXO procedures in RAMS.
Pollution of Environment	Unsuitable handling and storage of potentially contaminated sub-surface material during construction. Failure of remediation strategies. Surface run-off sediment loaded water following flooding of construction works.	Potential cost of additional disposal Health risks to construction workers and end users. Mobilisation of contaminants in bust blow, leachate etc. Migration to adjacent land. Legal liability for nuisance or damages etc. Migration to principal aquifer below.	3	4	12	High	Appropriate ground investigation coverage with contamination risk assessment. Detailed and adequate design of remediation strategy. Removal of unsuitable materials. Suitable handling and storage methodologies. Removal and disposal to off-site licensed landfill. Use of appropriate construction/piling methods to minimise risk of developing migration pathway for contaminants. Control surface water run-off during and after construction. Early consultation with Contaminated Land Officer.

5 RECOMMENDED FURTHER WORKS AND INFORMATION REQUIRED

The following actions are recommended to reduce uncertainty and progress the design:

- **Ground investigation (Geotechnical)**
 - Undertake a targeted intrusive ground investigation to confirm stratigraphy and variability of Made Ground and superficial deposits (including the potential for localised drift-filled hollows/soft infill).
 - To provide parameters for foundation design.
 - Install and monitor groundwater standpipes as required to confirm seasonal groundwater levels and inform temporary works and waterproofing strategy.
- **Geoenvironmental investigation and risk assessment**
 - Undertake geoenvironmental sampling and laboratory testing of Made Ground and relevant natural strata, followed by CSM update and risk assessment (GQRA/DQRA as required) to confirm mitigation measures for the proposed end use and controlled waters.
- **Utilities / drainage / sewers**
 - Confirm the location, depth and condition of existing sewers and drainage runs (surface and foul), including utility record searches and survey (e.g., GPR/EML) and CCTV/condition survey where diversion/protection may be required.
 - Confirm sewer constraints (easements/exclusion zones, manhole locations, invert levels) and coordinate with the civil/drainage strategy.
- **Flood risk and drainage strategy**
 - Obtain and review the project Flood Risk Assessment (FRA) and outline drainage strategy. Confirm any constraints relevant to basement construction and temporary works (including surface water management and discharge requirements).
- **Statutory/environmental constraints**
 - Review and summarise key statutory constraints from the Envirocheck dataset (e.g., SPZ status, abstractions, discharge consents, recorded contamination entries and landfill/industrial sites) and confirm whether any regulator engagement is required (EA/Local Authority).
- **Enabling works, asbestos and hazardous materials**
 - As the previous development has been demolished in 2024, ensure appropriate asbestos surveys (R&D where required) have been completed prior to demolition and intrusive works via request of demolition completion records, asbestos clearance certificates, waste transfer notes, and any records of removed tanks/hotspots where available.
- **Buried obstructions / existing foundations**
 - Undertake targeted trial pits (and/or enabling works surveys) to confirm the presence/extent of buried obstructions such as existing foundations, slabs, tanks, and hardstanding that could affect excavation, piling and programme.
- **Third-party assets (LUL and adjacent structures)**
 - Continue engagement with London Underground Limited (LUL) to confirm tunnel geometry and agree requirements for asset protection, including assessment scope, monitoring and construction controls.
- **Information to be Confirmed**
 - Latest layout, formation levels, proposed levels, structural/column loads, drainage strategy, landscaping/tree information, utilities strategy, and construction sequence.

6 SUMMARY

The proposed Ashley House redevelopment comprises refurbishment of the brownfield site into a high-quality mixed-use development which intends to provide approximately 540 shared-living units, 87 affordable social rented homes, commercial and employment spaces, and new community space. The redevelopment proposals include retained elements of the existing Rosa Luxemburg Apartments and Ashley Road West Site (including potential façade retentions).

The Site is located in a dense urban area within the London Borough of Haringey and is surrounded by commercial, residential and institutional uses. Key constraints for the redevelopment include the proximity of London Underground Limited (LUL) Victoria Line spur tunnels beneath Ashley House East Site, the presence of Thames Water assets (including sewers and water mains) along/near site boundaries, UKPN substations, and the general logistical constraints associated with deep excavation in a confined urban environment.

The anticipated geological profile comprises Made Ground overlying Enfield Silts and Kempton Park Gravels, with London Clay and deeper strata including the Lambeth Group, Thanet Sands and White Chalks. The current understanding is based on historical borehole records and regional datasets rather than site-specific investigation; therefore, the ground model remains preliminary. A targeted site-specific ground investigation is recommended to confirm stratigraphy, groundwater conditions and parameters for basement and foundation design.

From a geoenvironmental perspective, potential sources of contamination include Made Ground and operational/historic land uses associated with factories and the wider urban setting. Potential contaminants may include hydrocarbons, metals, PAHs, asbestos-containing materials, and VOCs, with localised risks associated with plant areas (e.g., substations/switch rooms) where oils may be present. Ground gas generation is also possible in Made Ground and should be confirmed through targeted monitoring where required.

Given the proximity to LUL assets, early engagement with LUL is required to confirm tunnel geometry (line and level) and agree asset protection requirements. This is expected to inform the need for a ground movement assessment, construction controls, and a monitoring strategy to manage the effects of excavation, retaining wall installation, piling and any dewatering.

Geotechnically, the Site is considered suitable for redevelopment in principle, subject to confirmation by investigation. Deep foundations (e.g., piles or piled rafts) are likely to be required for the taller towers and heavily loaded elements, while shallower solutions may be feasible for the lower-rise Affordable Block subject to settlement performance with the aid of GI findings, structural loads, settlement criteria, and LUL asset protection requirements. Where piling is adopted, pile load testing may be beneficial to confirm performance and optimise design (potentially reducing pile numbers and/or sizes).

Construction will take place within a sensitive urban environment. Appropriate management measures will be required to control noise, dust and vibration, maintain safe access to adjacent buildings and footways, and minimise disruption. Early coordination with the wider project team and adjacent occupiers/stakeholders will be important throughout the construction phase.

7 CONCLUSION

This Phase 1 Geotechnical and Geoenvironmental Desk Study has not identified any constraints that are expected to preclude redevelopment of the Site. However, as no site-specific intrusive ground investigation data were available at the time of writing, the ground model and associated findings remain preliminary. Further investigation and specialist assessments are therefore required to confirm ground conditions, refine the Conceptual Site Model (CSM), and inform safe and sustainable design and construction.

Based on the information reviewed to date, the following actions are recommended:

- **Site-specific ground investigation:** Undertake a detailed ground investigation to confirm stratigraphy, variability of Made Ground and superficial deposits, groundwater conditions, and to derive parameters for retaining structures and foundation design.
- **Foundation strategy (preliminary):** The Social Housing and Affordable Housing buildings are likely to require deep foundations (e.g. piles or piled raft) due to higher structural loads and the proposed basement arrangement. The Co-living block may be feasible with shallower foundations subject to confirmation of bearing capacity and settlement performance.
- **Geoenvironmental assessment and monitoring:** Given the presence of Made Ground and the historic/institutional land use, undertake appropriate geoenvironmental sampling and testing (including screening against relevant Generic Assessment Criteria) and baseline ground gas monitoring to assess potential methane/carbon dioxide risk and confirm the requirement for any protection measures.
- **Unexploded ordnance (UXO):** Appoint a specialist UXO consultant to undertake a UXO desk study and risk assessment prior to intrusive works, and to define any required mitigation measures.
- **Archaeology:** The Site lies within a Tier 2 Archaeological Priority Area; an archaeological consultant should be appointed to confirm the requirements for further assessment, mitigation and any enabling works constraints.
- **London Underground Limited (LUL):** The proposed deep basements and piling works in proximity to London Underground assets will require early engagement with LUL to confirm tunnel line and level and agree asset protection requirements. This is expected to inform the need for ground movement assessment, monitoring, and construction controls to manage the potential effects of excavation, retaining wall installation and any dewatering adjacent to the Northern Line tunnels.

8 REFERENCES

- Ashley Park, Tottenham Hale, second pre-application document by dla.
- National Library of Scotland OS Map Finder: (<https://maps.nls.uk/view/101919699>)
- PALM 128 Utility Map
- Definition of Waste Code of Practice (CL: AIRE, March 2011)
- Contaminated Land Statutory Guidance (DEFRA 2012, EPA 1990 – Part 2A)
- Potential Contaminants for the Assessment of Land (DEFRA 2002)
- Landmark Envirocheck Report, Envirocheck, 2025 (Appendix A)
- British Geological Survey (BGS) Onshore GeoIndex (accessed on 08/10/25)
- Nicholas Barton – The Lost Rivers of London
- Google Maps and Google Earth (accessed on 09/10/25)
- Historic England Map Viewer (<https://historicengland.org.uk/listing/the-list/map-search>)
- Flood Risk Information Portal (<https://flood-map-for-planning.service.gov.uk/>)
- Mining Remediation Authority Map Viewer (<https://datamine-cauk.hub.arcgis.com/>)
- UK Radon Interactive Map, UK Health Security Agency (<https://www.ukradon.org/information/ukmaps>)
- Transport for London, Property Asset Register Public Web Map (https://experience.arcgis.com/experience/9d59736aafc44ec2878900f5cb929362#zoom_to_selection=true)
- World Health Organization (WHO) (*Health-care waste*)
- Map of watercourses in Haringey (https://www.whatdotheyknow.com/request/map_of_drains_and_sewers/response/2701948/attach/4/Haringey%20Rivers%20Watercourses.pdf)
- Department for Environment, Flood and Rural Affairs water body map (<https://environment.data.gov.uk/catchment-planning/WaterBody/GB106038027920>)
- LCRM (*Land contamination risk management (LCRM) - GOV.UK*)
- British Standards Codes of Practice (BS 8004, BS 5930, BS 10175)
- Eurocodes for Geotechnical Design (BS EN 1997-1, BS EN 1997-2)
- Unexploded ordnance guide for the construction industry (CIRIA C681)
- Concrete in aggressive ground (BRE SD1)

APPENDIX A – LANDMARK ENVIROCHECK REPORT

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand And Peat	Not Supplied - Holocene
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	ESI	Enfield Silt Member	Clay and Silt	Not Supplied - Devensian
	KPGR	KEMPTON PARK GRAVEL MEMBER	Sand and Gravel	Not Supplied - Devensian
	LASI	Langley Silt Member	Clay and Silt	Not Supplied - Devensian
	TPGR	TAPLOW GRAVEL MEMBER	Sand and Gravel	Not Supplied - Wolstonian
	BHT	Boyn Hill Gravel Member	Sand and Gravel	Not Supplied - Hoxnian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian

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Geology 1:50,000 Maps

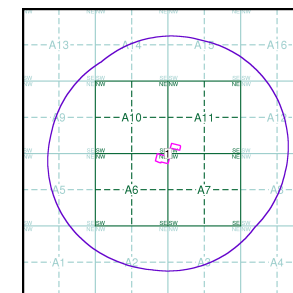
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	256
Map Name:	North London
Map Date:	2006
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



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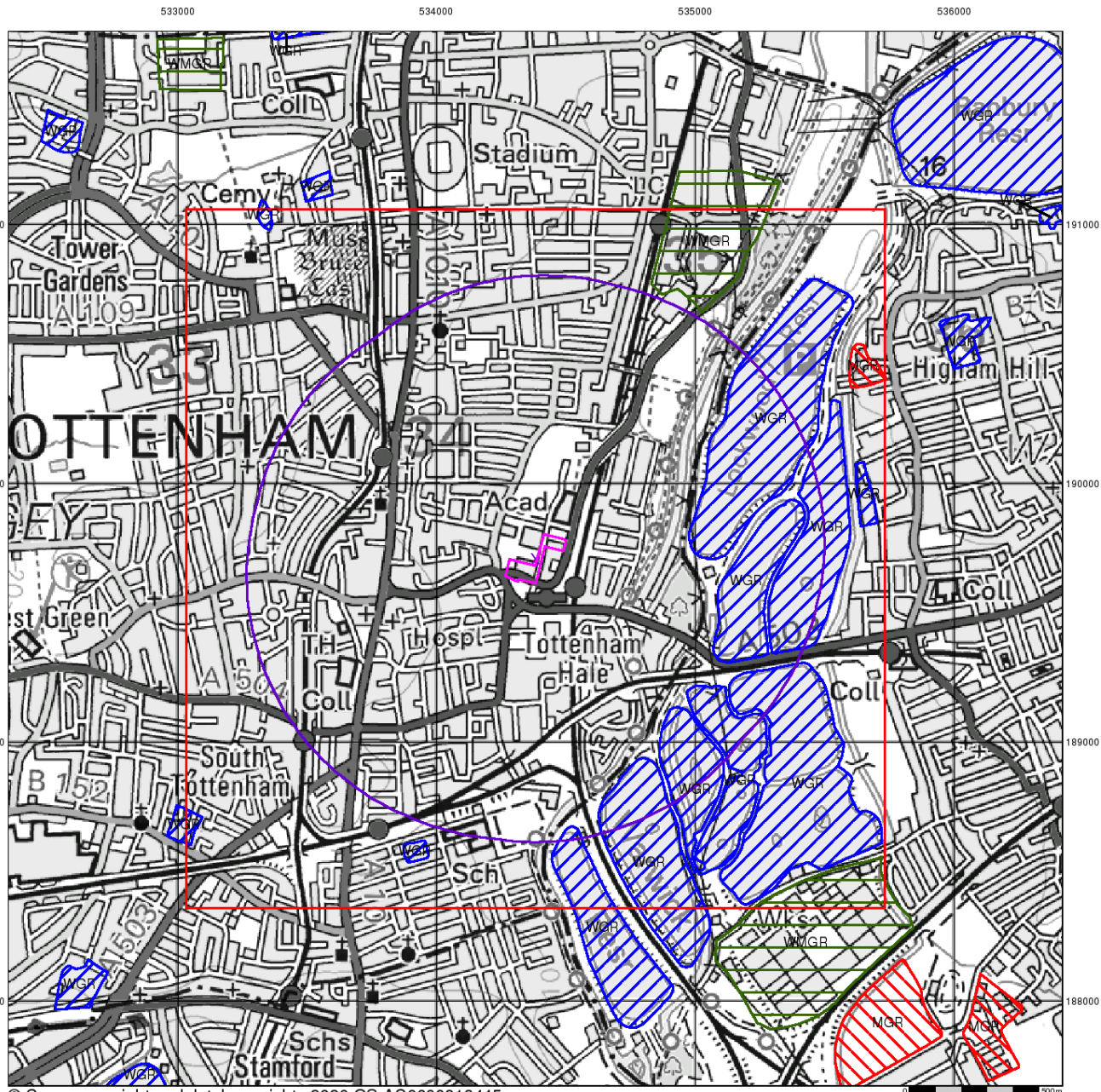
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Site Area (Ha):	1.35
Search Buffer (m):	1000

Site Details:

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Artificial Ground and Landslip

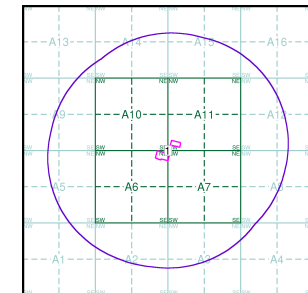
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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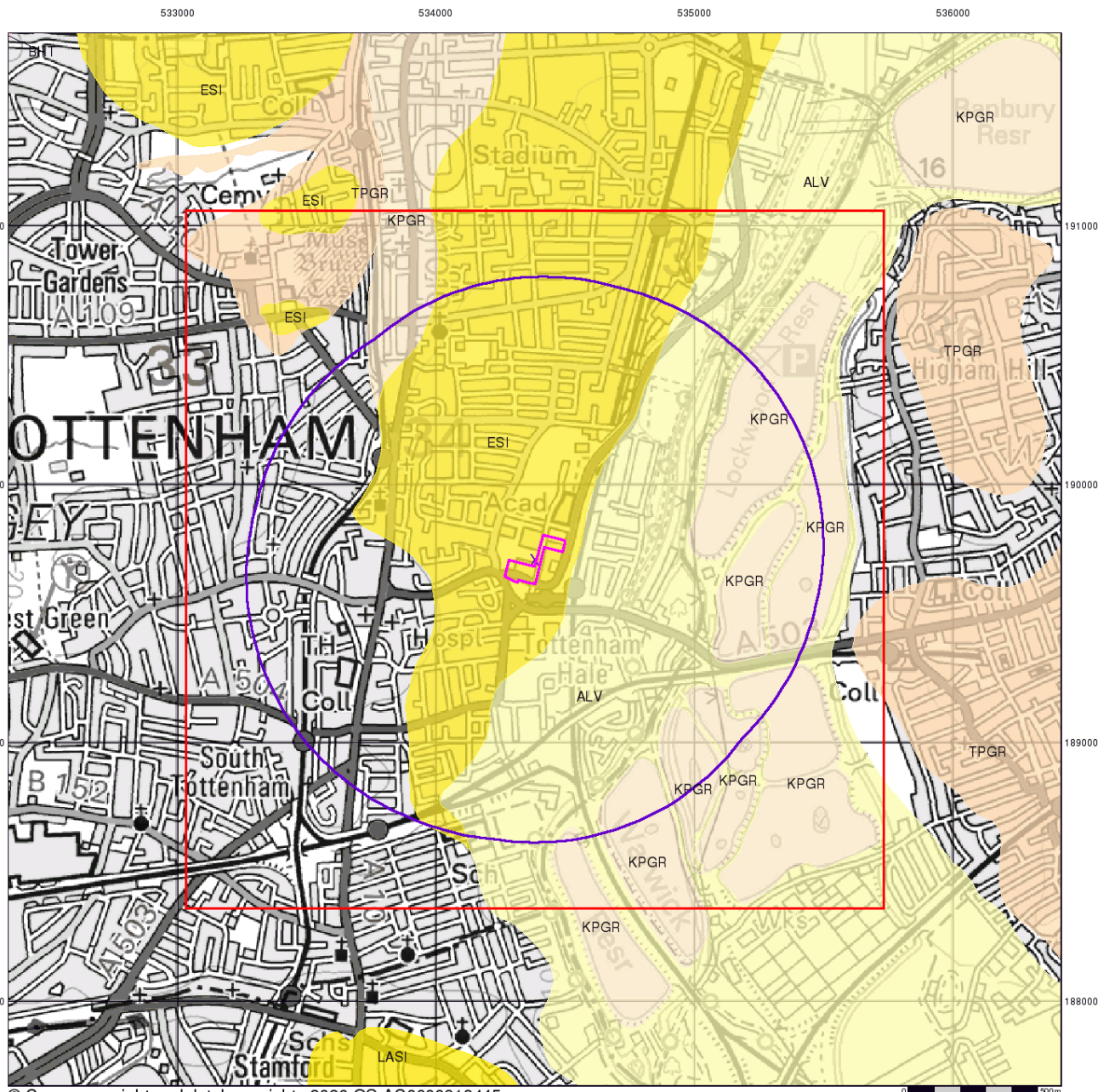
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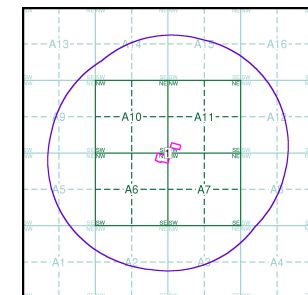
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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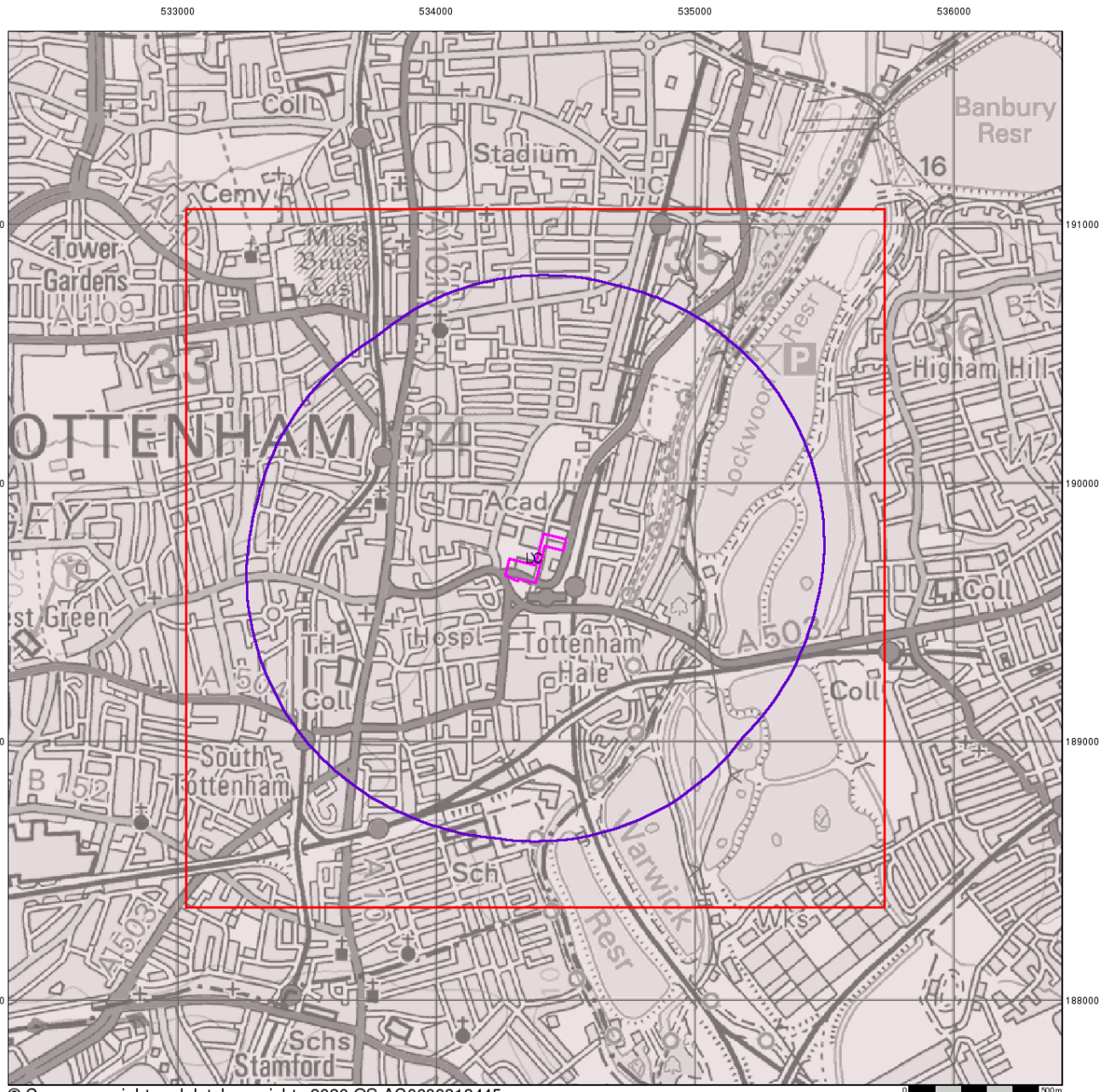
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Bedrock and Faults

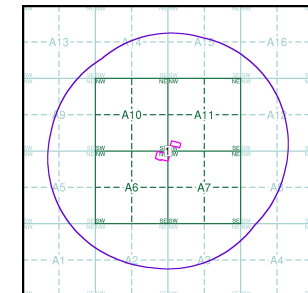
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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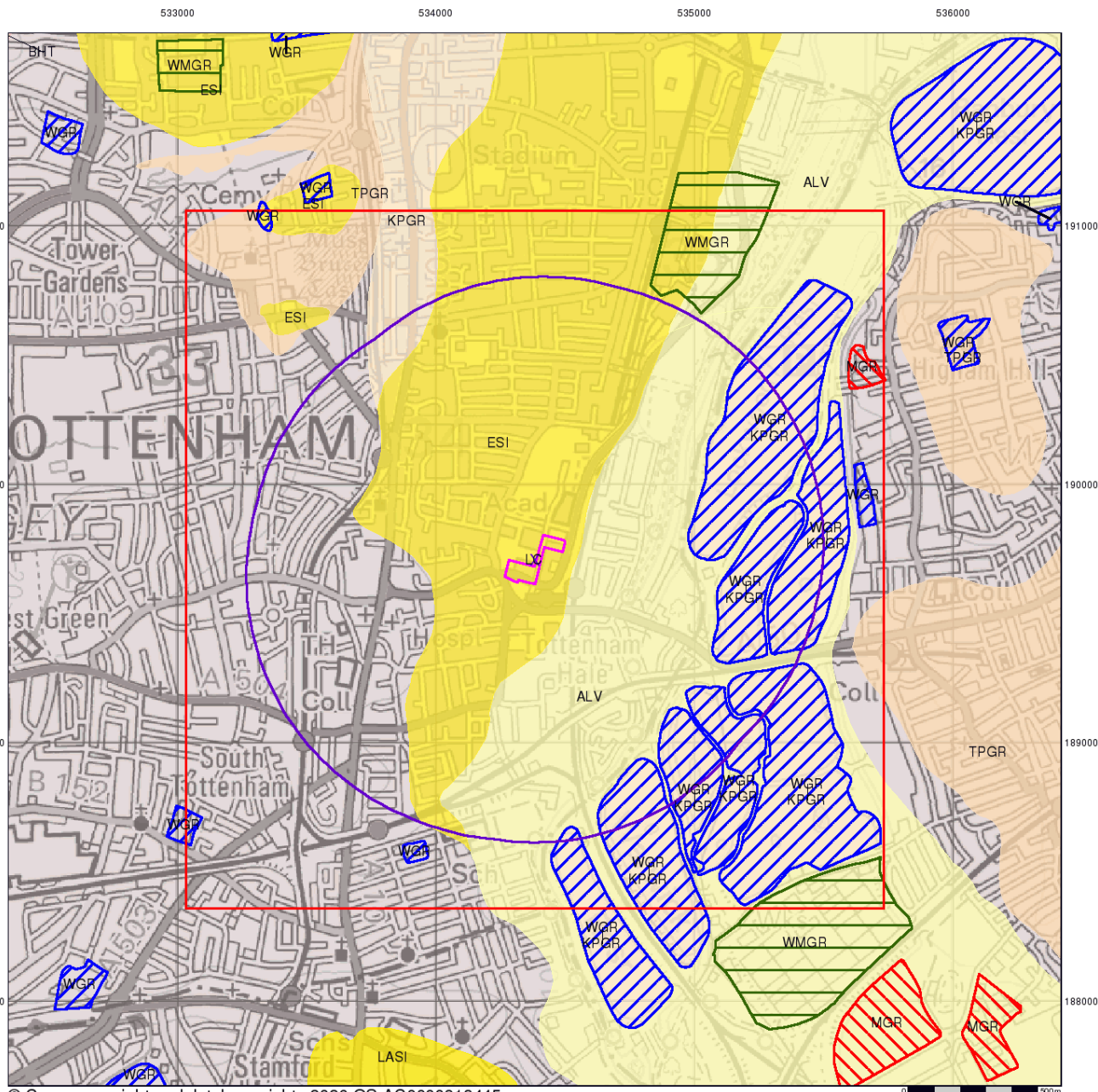
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

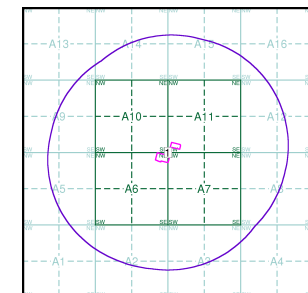
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

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NG12 5GG
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Fax: 0115 936 3276
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website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		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		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		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
	Mean high water (springs)		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

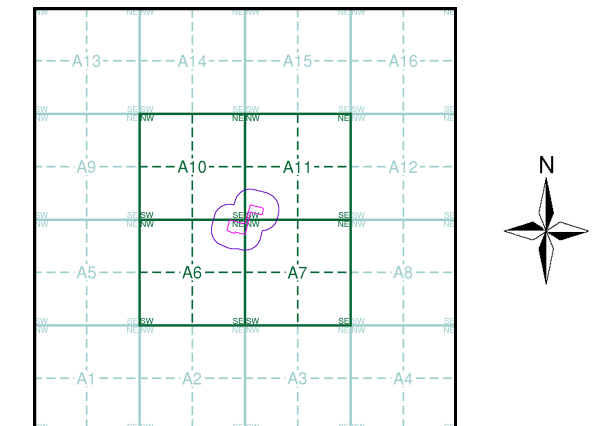
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1873	3
Essex	1:10,560	1876	4
Middlesex	1:10,560	1879	5
London	1:10,560	1896	6
Essex	1:10,560	1898	7
Essex	1:10,560	1920	8
Essex	1:10,560	1938	9
Historical Aerial Photography	1:10,560	1945 - 1950	10
Ordnance Survey Plan	1:10,000	1952	11
Ordnance Survey Plan	1:10,000	1962 - 1968	12
Ordnance Survey Plan	1:10,000	1967 - 1968	13
Ordnance Survey Plan	1:10,000	1975 - 1977	14
Ordnance Survey Plan	1:10,000	1983 - 1988	15
London	1:25,000	1985	16
Ordnance Survey Plan	1:10,000	1990 - 1995	17
10K Raster Mapping	1:10,000	1999	18
10K Raster Mapping	1:10,000	2006	19
VectorMap Local	1:10,000	2026	20

Historical Map - Slice A



Order Details

Order Number: 404335009_1_1
Customer Ref: P452287
National Grid Reference: 534380, 189710
Slice: A
Site Area (Ha): 1.35
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 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

Telegraph/Telephone Lines

Main Highway

Highway under Construction

Improved Dirt Road (former truck road)

Double-track Railroad with First Class Station

Railroad Under Construction

Shore Embankment

River or Ditch with Embankment

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

TQ38_London

No.	Description
167	Factory (Rubber Technical Goods)

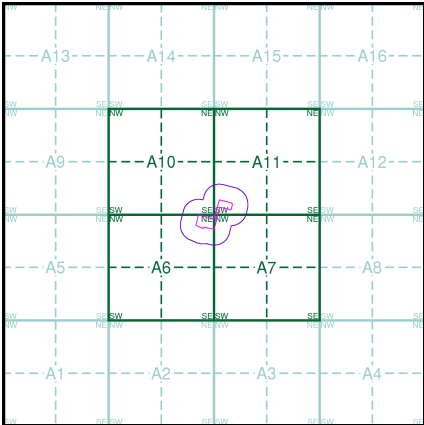
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1873	3
Essex	1:10,560	1876	4
Middlesex	1:10,560	1879	5
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Essex	1:10,560	1898	7
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Historical Aerial Photography	1:10,560	1945 - 1950	10
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Ordnance Survey Plan	1:10,000	1962 - 1968	12
Ordnance Survey Plan	1:10,000	1967 - 1968	13
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Ordnance Survey Plan	1:10,000	1990 - 1995	17
10K Raster Mapping	1:10,000	1999	18
10K Raster Mapping	1:10,000	2006	19
VectorMap Local	1:10,000	2026	20

Russian Map - Slice A



Order Details

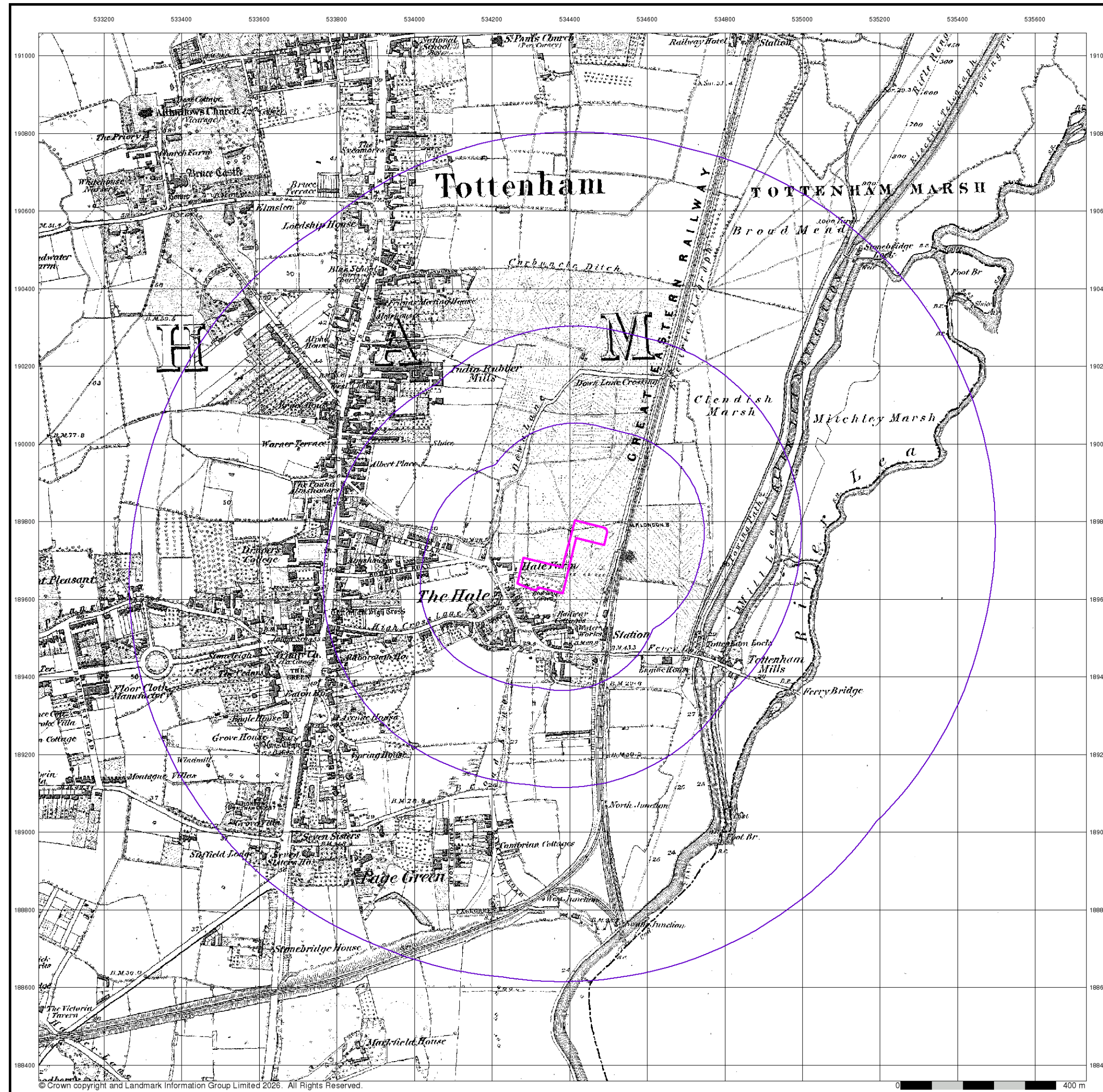
Order Number: 404335009_1_1
Customer Ref: P452287
National Grid Reference: 534380, 189710
Slice: A
Site Area (Ha): 1.35
Search Buffer (m): 1000

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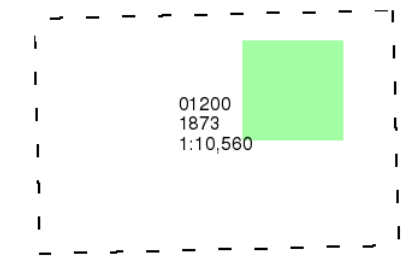
Middlesex

Published 1873

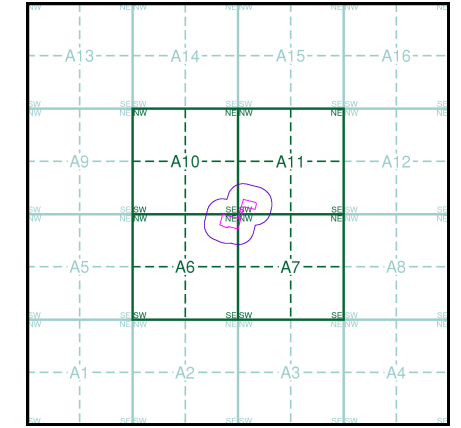
Source map scale - 1:10,560

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

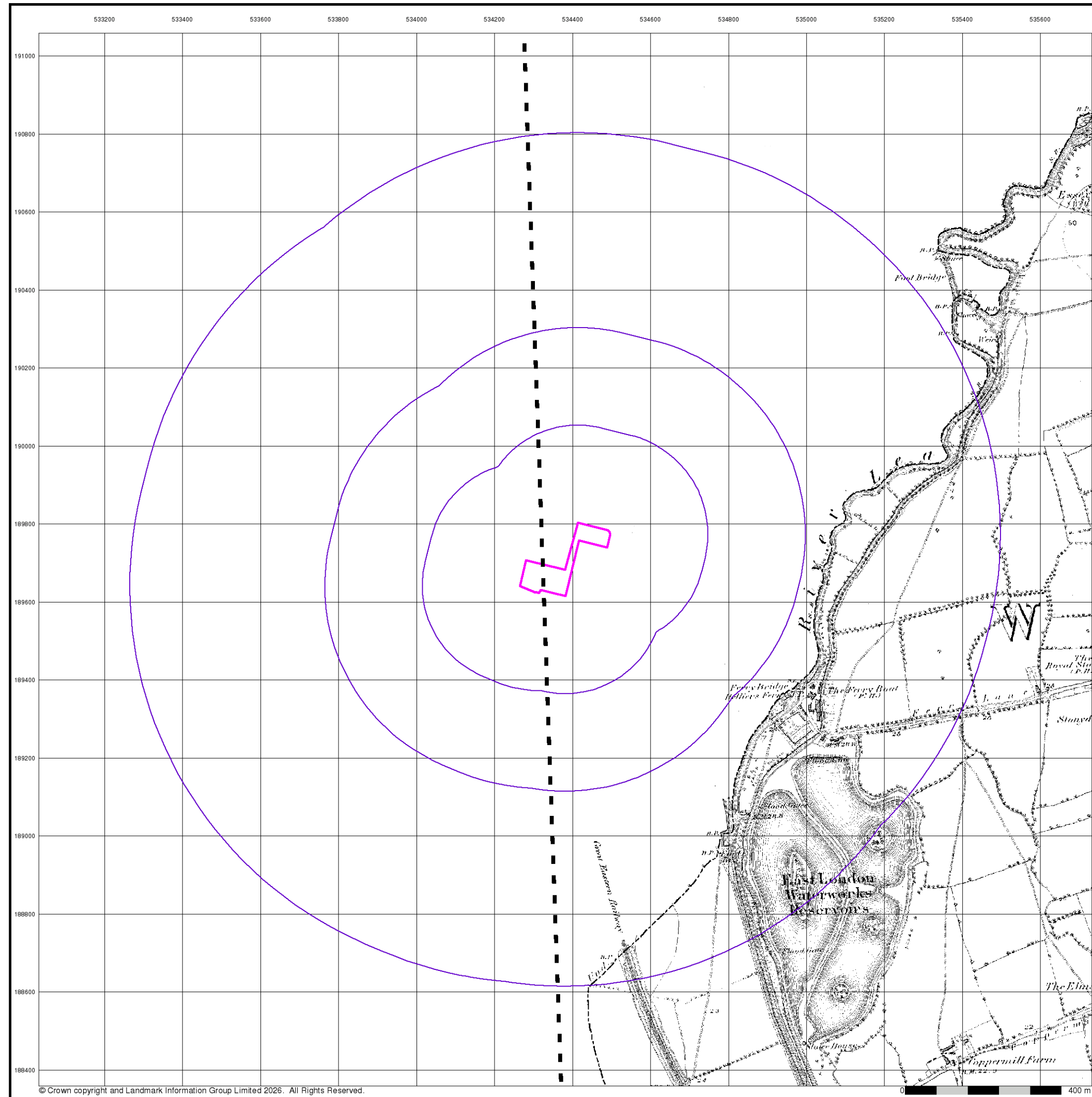
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Customer Ref: P452287
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Slice: A
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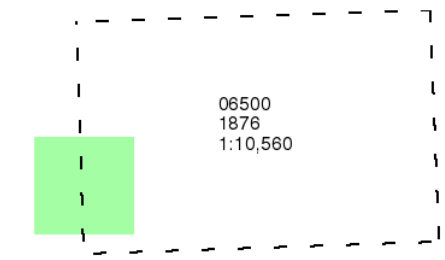
Essex

Published 1876

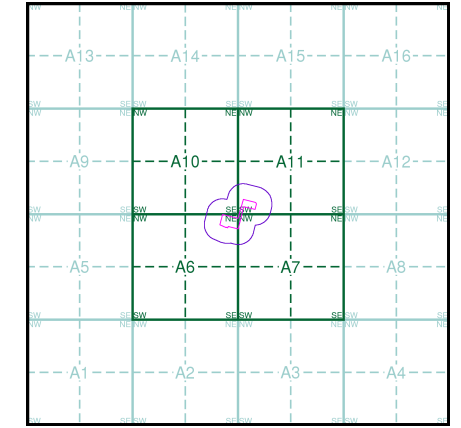
Source map scale - 1:10,560

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

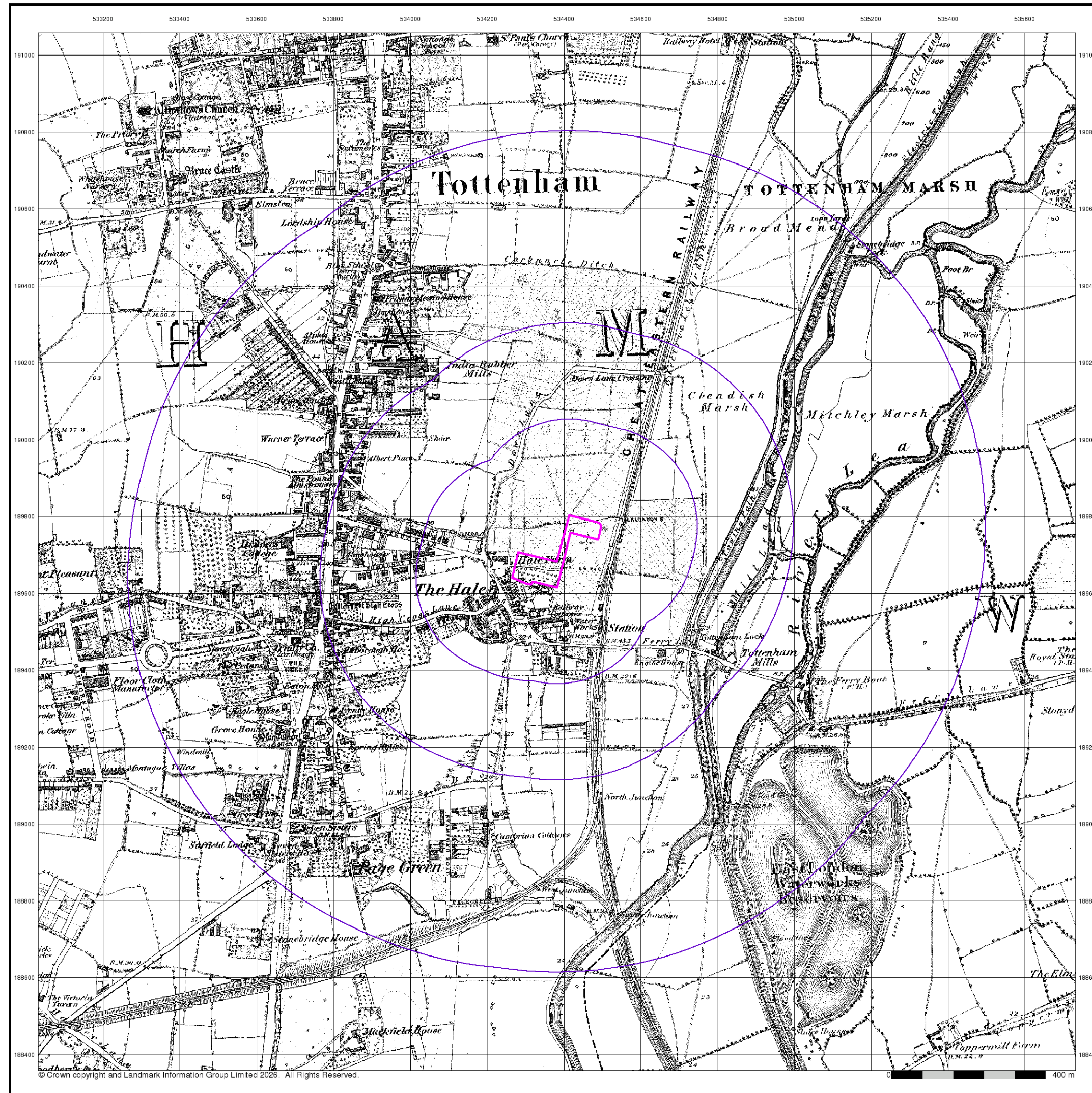


Order Details

Order Number: 404335009_1_1
Customer Ref: P452287
National Grid Reference: 534380, 189710
Slice: A
Site Area (Ha): 1.35
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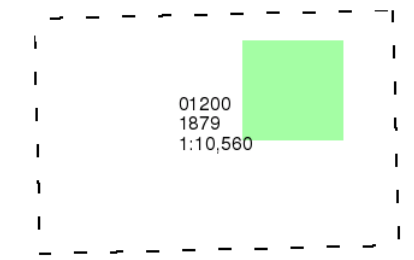
Middlesex

Published 1879

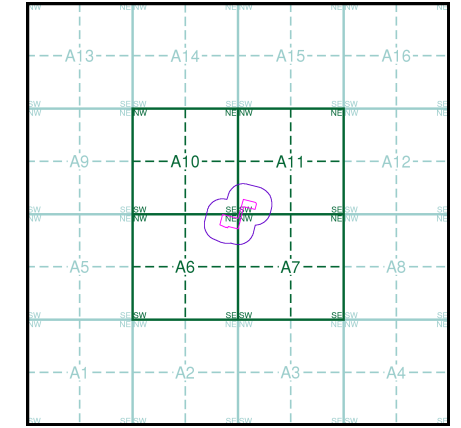
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. 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

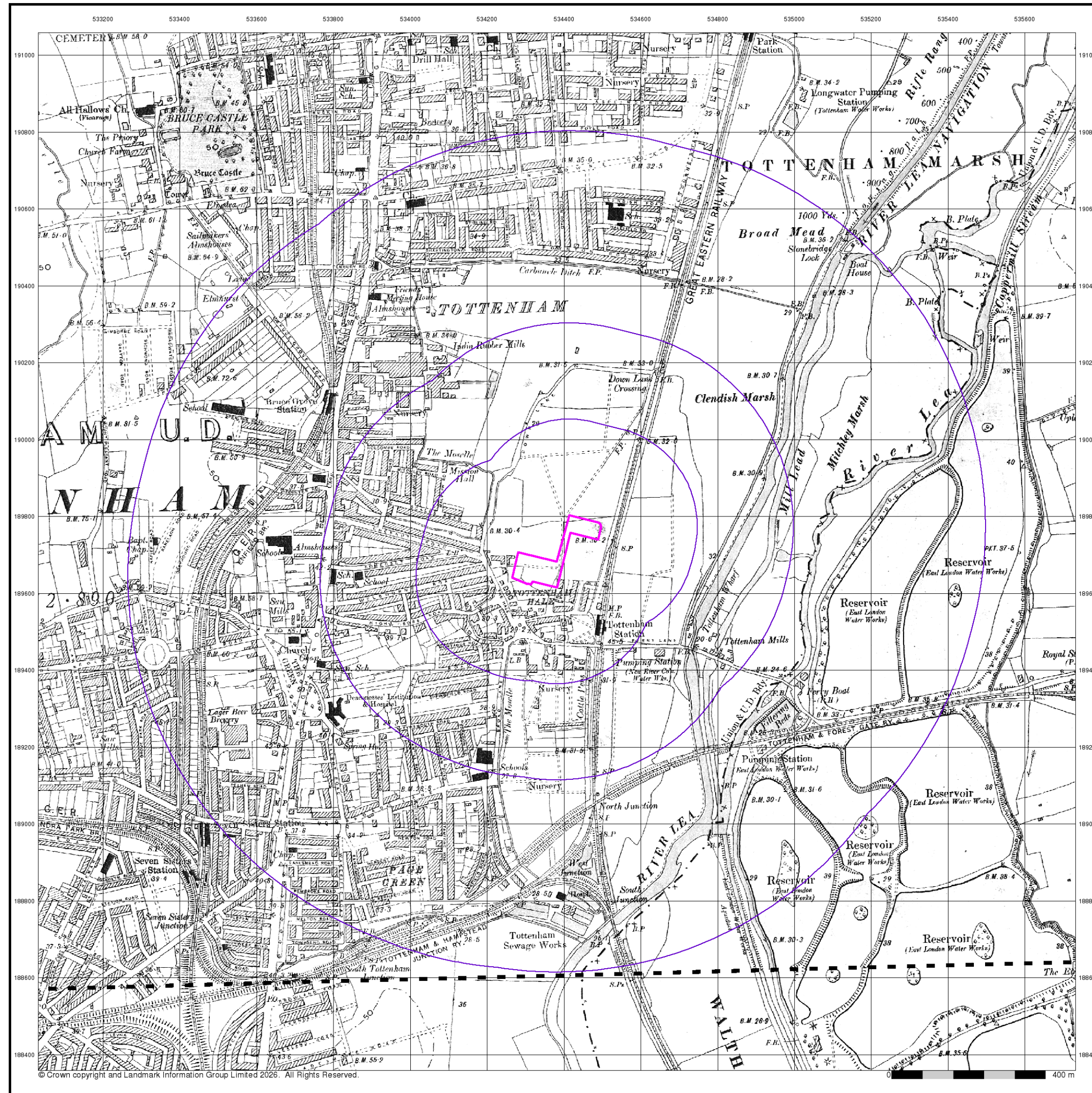
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National Grid Reference: 534380, 189710
Slice: A
Site Area (Ha): 1.35
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London

Published 1896

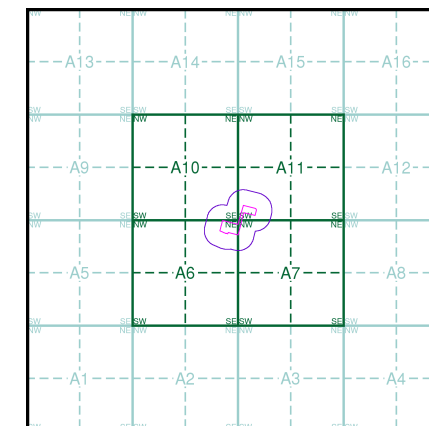
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

003NE 1896 1:10,560
003SE 1896 1:10,560

Historical Map - Slice A



Order Details

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Customer Ref: P452287
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Essex

Published 1898

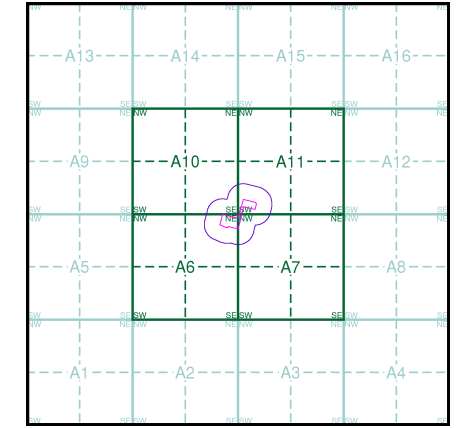
Source map scale - 1:10,560

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Map Name(s) and Date(s)

065NW	1898	1:10,560
065SW	1898	1:10,560

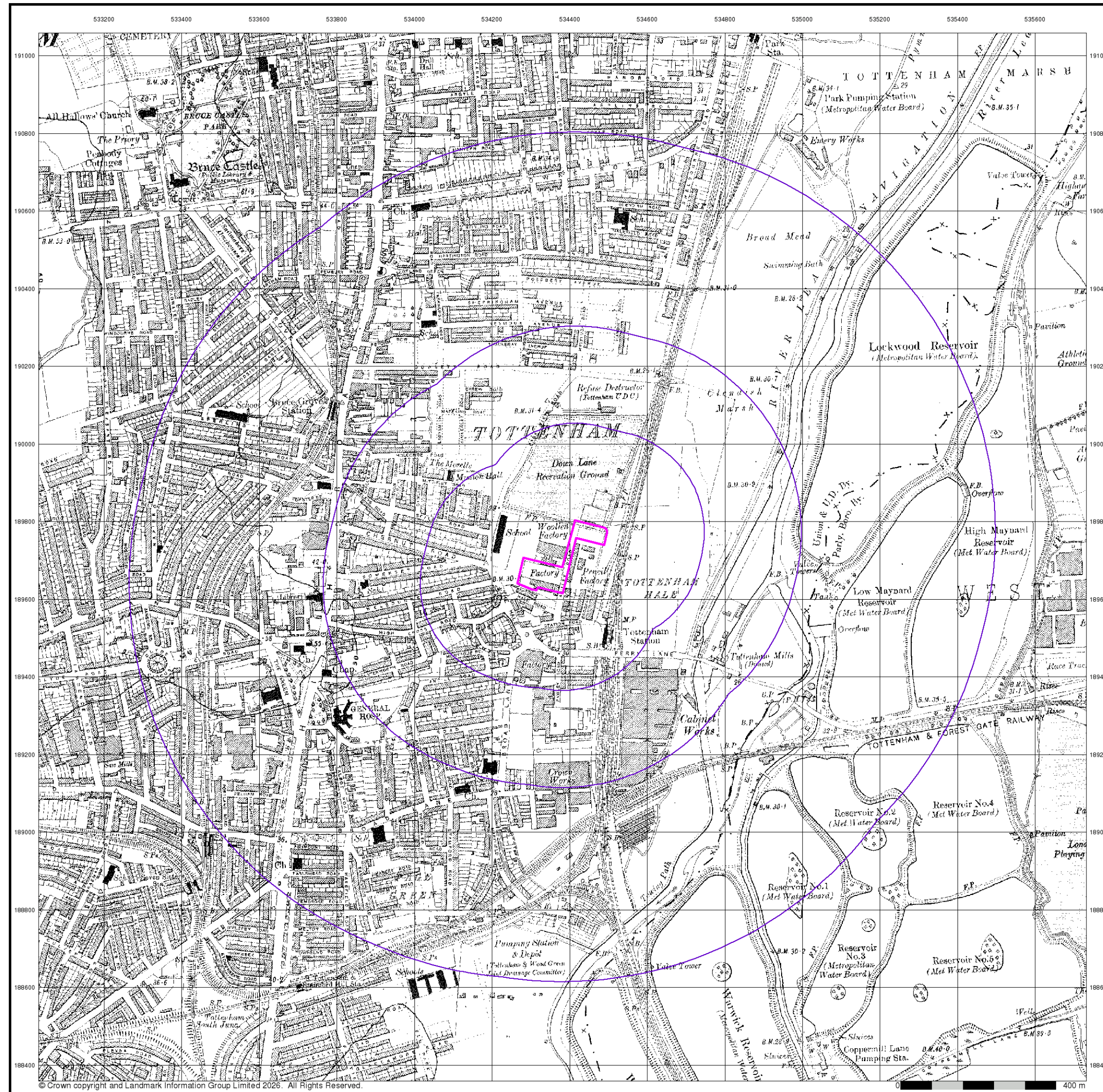
Historical Map - Slice A



Order Details	
Order Number:	404335009_1_1
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Slice:	A
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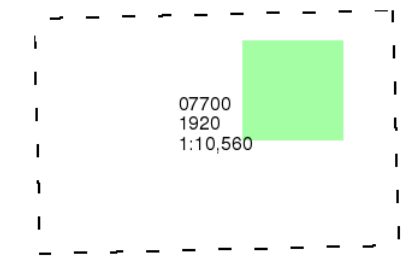
Essex

Published 1920

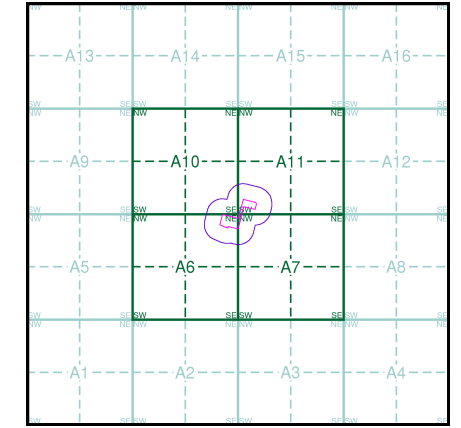
Source map scale - 1:10,560

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

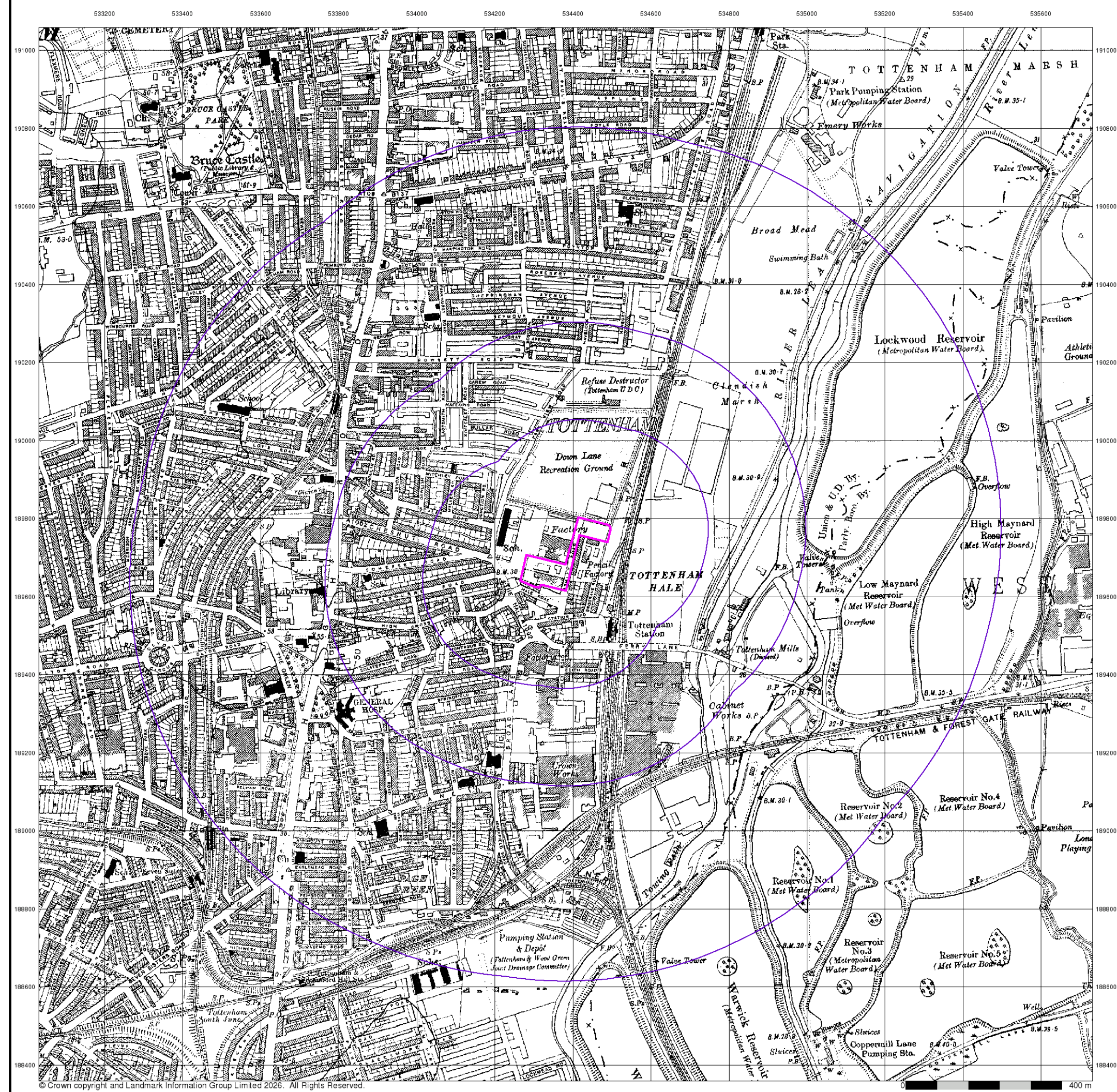
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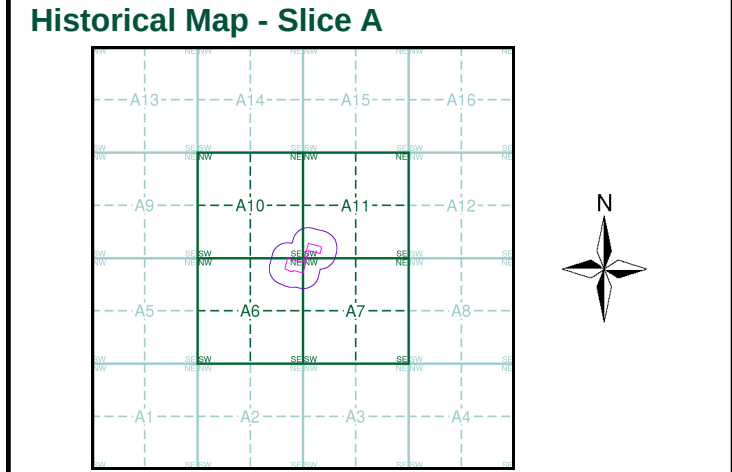
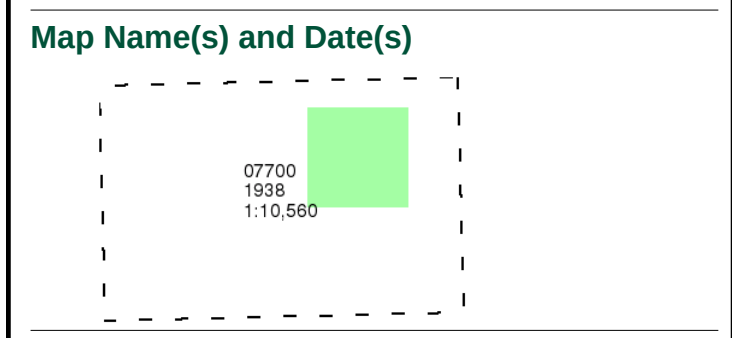


Essex

Published 1938

Source map scale - 1:10,560

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



Order Details

Order Number:

404335009_1_1

Customer Ref:

P452287

National Grid Reference:

534380, 189710

Slice:

A

Site Area (Ha):

1.35

Search Buffer (m):

1000

Site Details

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Historical Aerial Photography

Published 1945 - 1950

Source map scale - 1:10,560

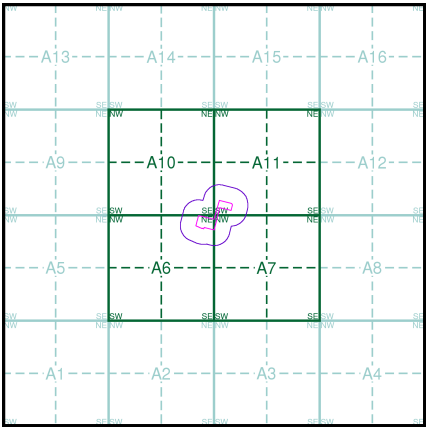
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the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

TQ39SW 1945 1:10,560	TQ39SE 1950 1:10,560
TQ38NW 1950 1:10,560	TQ38NE 1949 1:10,560

Historical Aerial Photography - Slice A



LIBRARY
HSILIRB

Order Details

Order Number: 404335009_1_1
Customer Ref: P452287
National Grid Reference: 534380, 189710
Slice: A
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Search Buffer (m): 1000

Site Details

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