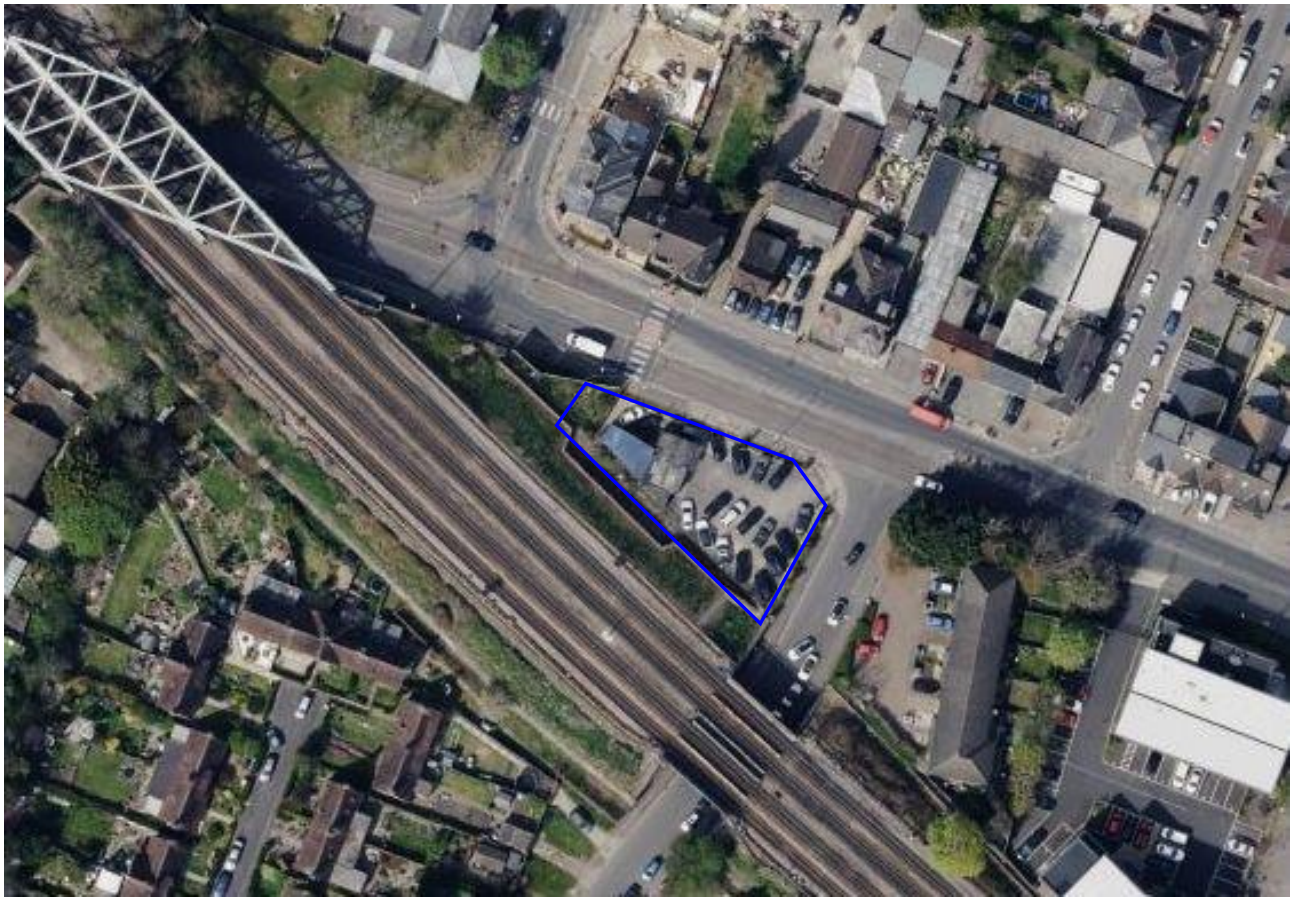
Pinner Road, Northwood	SUBADRA Environmental - Geotechnical - Laboratory - Foundations 13 Triangle Business Park, Stoke Mandeville, HP22 5BL Tel: 01296 739400 Email: consultants@subadra.com

PHASE ONE ENVIRONMENTAL ASSESSMENT REPORT (PRELIMINARY RISK ASSESSMENT)



Report Prepared By:	Report Reviewed By:
Greg Ross	Steven Partridge

Client: Polaris Property Developments Limited	Subadra Consulting Ltd. Registered in England No. 4586038 Registered Office 13 Triangle Business Park, Stoke Mandeville, HP22 5BL	Report	IN22732 CL 001
		Date	April 2022
		Page	1

Phase I Environmental Assessment – Summary

Site Sensitivity

Geology and Hydrogeology	London Clay (where present)	Unproductive Stratum	
	Lambeth Group	Secondary Aquifer (Class A)	
	Upper Chalk Formation	Principal Aquifer	
Source Protection Zone	Yes - SPZ Outer Zone (2)	Nearest Surface Water	80m west
Surrounding Land Use	Predominantly residential (north / east), with some mixed use. A railway line is present to the south and west, followed by more residential properties.		
Environmental Sensitivity	Low to moderate		

Conclusions

The results of our assessment indicate the following:

- Geology maps indicate that shallow geology underlying the site is likely to comprise Lambeth Group, comprising firm to stiff clays grading to dense sand with clay layers with pebbles, to at least 15m. London Clay may also be present, overlying the Lambeth clays, across the eastern half/end of the site. Groundwater is likely to be present within the underlying chalk, potentially at depths exceeding 30m. The the site is located within a Source Protection Zone, with a groundwater abstraction borehole ~1.1km to the south west. These are both associated with deep chalk aquifer and not considered at risk of impact due to the presence of the shallow low permeability clay soils, which will impede lateral/vertical migration of any mobile contaminants that may be present at shallow depths.
- The site was first developed as a garage between 1936 and 1952, prior to this the site was undeveloped farmland. The garage was redeveloped in the early 1980s with a new sales building, canopy and pumps. The Petroleum Officer's records indicate there was a fuel leak at the site, identified in 1987. Hydrocarbon product was removed from remediation wells over a number of years and then the petrol station closed and decommissioned. As part of the decommissioning process six below ground tanks were removed and ~120m^3 of impacted soils were removed. Records indicate the occurrence of a fuel within a nearby stream, but we understand this was never definitely proven to originate from the petrol station. The current site use as a car sales yard is not likely to be a source of significant contamination.
- The current site use as a car sales yard is not likely to be a source of significant contamination.

In conclusion, based on our desk-top review we consider the potential for significant contamination to be present in shallow soils to be low. However, given the site's extended use as a retail filling station and records that indicate the occurrence of a fuel leak, albeit with relatively extensive remedial works having been carried out, we cannot discount the possibility that residual hydrocarbon impact will be present.

Recommendations

We recommend that a Phase II environmental investigation is undertaken to allow an assessment of the underlying ground conditions to determine if potentially complete pollution linkages are present, specifically the risk due to historical use as a filling station.

We have also identified several geotechnical risk factors and uncertainties associated with the site. We therefore recommend that geotechnical testing is carried out as part of the environmental site investigation in order to provide information regarding soil properties and ground conditions.

Your attention is drawn to the Notice to Interested Parties included as Attachment One

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

Contents

List of Attachments

13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

1 Introduction

1.1 The Purpose of This Assessment

The site is located on the corner of Pinner Road and Chestnut Avenue in Northwood and comprises a second hand car dealership with offices. We understand that Polaris Property Developments Limited (Polaris) proposes to redevelop the site with a mixed commercial and residential scheme.

We have been commissioned by Polaris to undertake a Phase One Environmental Report (also known as a Preliminary Risk Assessment), which is to be submitted to the Local Authority in support of a planning application for the proposed development.

The purpose of this assessment was to develop an initial conceptual site model of the site and establish whether or not there are potentially unacceptable risks to sensitive receptors from potential contaminants that may be present in the soil and/or groundwater under the site. We have not carried out any intrusive investigation of the site and have made no measurements of actual contamination levels that may be present.

As part of this assessment we have also undertaken a desk based review of how various geotechnical considerations may impact upon the site redevelopment.

Our environmental assessment was undertaken in accordance with the guidelines presented in the Environment Agency (2020) 'Land contamination risk management (LCRM)' documents and Environment Agency (2010) Guiding principles for land contamination (GPLC).

All the activities comprising this assessment were carried out in accordance with the procedures set out in our Quality Manual. Your attention is drawn to the Notice to Interested Parties included as Attachment One.

1.2 The Scope of This Assessment

Our assessment included:

- A review of geological, hydrogeological and hydrological information to establish environmental sensitivities at the site and in its vicinity;
- A review of environmental data from previous environmental works;
- A review of available historical information to determine the historical use of the site and its immediate surroundings;
- Compilation of a Conceptual Site Model and completion of a Qualitative Risk Assessment;
- A preliminary assessment of potential geotechnical engineering considerations;
- Preparation of this report, presenting our findings and conclusions, and any recommendations for further work that we consider appropriate.

The findings and opinions in this review are based upon information obtained from the sources outlined above. Information obtained from third parties has been accepted at face value however we do not guarantee its authenticity. Where practicable the information provided was confirmed from a secondary source such as the review of available municipal records.

We have not completed a site walkover inspection as part of this initial assessment, as we do not consider this would add to our conceptual understanding of the site at this time.

1.3 Previous Reports Relating to the Site

As part of our environmental assessment we have reviewed the reports listed in the following table.

Our Ref.	Report Title	Prepared By	Prepared on Behalf of	Date of Issue	Report Reference
Ref.1	Soil Gas Survey Report	Delft Geotechnics UK Ltd	Shell UK Ltd	March 1994	C146/ CT137
Ref.2	Soil testing during tank and flowline removal report	DG environmental Ltd		February 1995	C230.68

Our detailed review of these documents is provided in Table Two below and we have used information from these documents, where relevant, in other sections of this report.

Table One: Previous Environmental Reports Relating to the Site

Our Ref.	Summary of Results and Conclusions of Previous Works
Ref.1	This report presents the findings of a desk top review of the site and results of a soil gas survey (for hydrocarbon vapours) carried out in 1994, when the site was an operation petrol station. The report identified the site as being is underlain by London Clay followed by Reading Beds (clays and sand) and then the Upper chalk. There are three licensed water abstractions within a 2km radius, this includes two public water supply boreholes, and another abstraction for use by the Ministry of Defence. The report includes a review of the site's history as a petrol station, sourced from the Petroleum Officer. In 1987, product was identified in a stream close to the site. Integrity testing of the fuel tanks and lines identified no detectable leaks and no details on the volume of fuel lost were made available. Intrusive investigation works at the petrol station, carried out in response to the fuel in the stream, identified hydrocarbon product in shallow soils and a fuel recovery pump was installed and operated for three years, at which point fuel was no longer accumulating in remedial wells. The vapour survey comprised 45 soil gas probes (drilled at ~20mm diameter probe to ~900mm depth) and then screened using a Photo-ionisation Detection (PID) at 600mm and 900mm depths. VOC readings above 20ppm were recorded at ten locations, and exceeded 100ppm in a location between the the tanks and pump island. Six soil samples were also collected and analysed for TPH. All six of the soil samples returned concentrations of TPH between 50 and 100mg/kg. The factual report does not provide any recommendations for further work.
Ref.2	This report presents the findings of soil testing carried out following tank and fuel line removal at the site in 1995. The report confirms six underground storage tanks were removed. These comprised 3No. 3,000 gallon and 3No. 8,000 gallon tanks (all split into compartments of 5,000 and 3,000 gallons. Eighteen soil samples were collected during the excavation works and tested using semi-quantitative methods. Analysis results showed seven samples recorded TPH concentrations <25mg/kg, six of the samples contained concentrations above 400mg/kg. The maximum concentration recorded was 1,000mg/kg. The report records that ~120m^3 of hydrocarbon impacted soil was removed from beneath the central forecourt (fuel lines) and the area between the central forecourt and sales building.

Table Two: Review of Previous Environmental Works at the Site

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

1.4 Proposed Development Plans

Proposed Developments	We understand that Polaris proposes to redevelop the site with a mixed commercial and residential building. The commercial units and parking will form ground level with the upper two levels populated with nine flats. There will be a communal landscaped area within the development. A site plan showing the proposed development plan is provided below.
Notes	We understand that this report is to be submitted in support of a planning application for the site's redevelopment, as detailed above. Whilst our assessment has not been compiled to directly satisfy any specific planning conditions the information contained in this report may assist in satisfying any such requirements (although further works may be required).

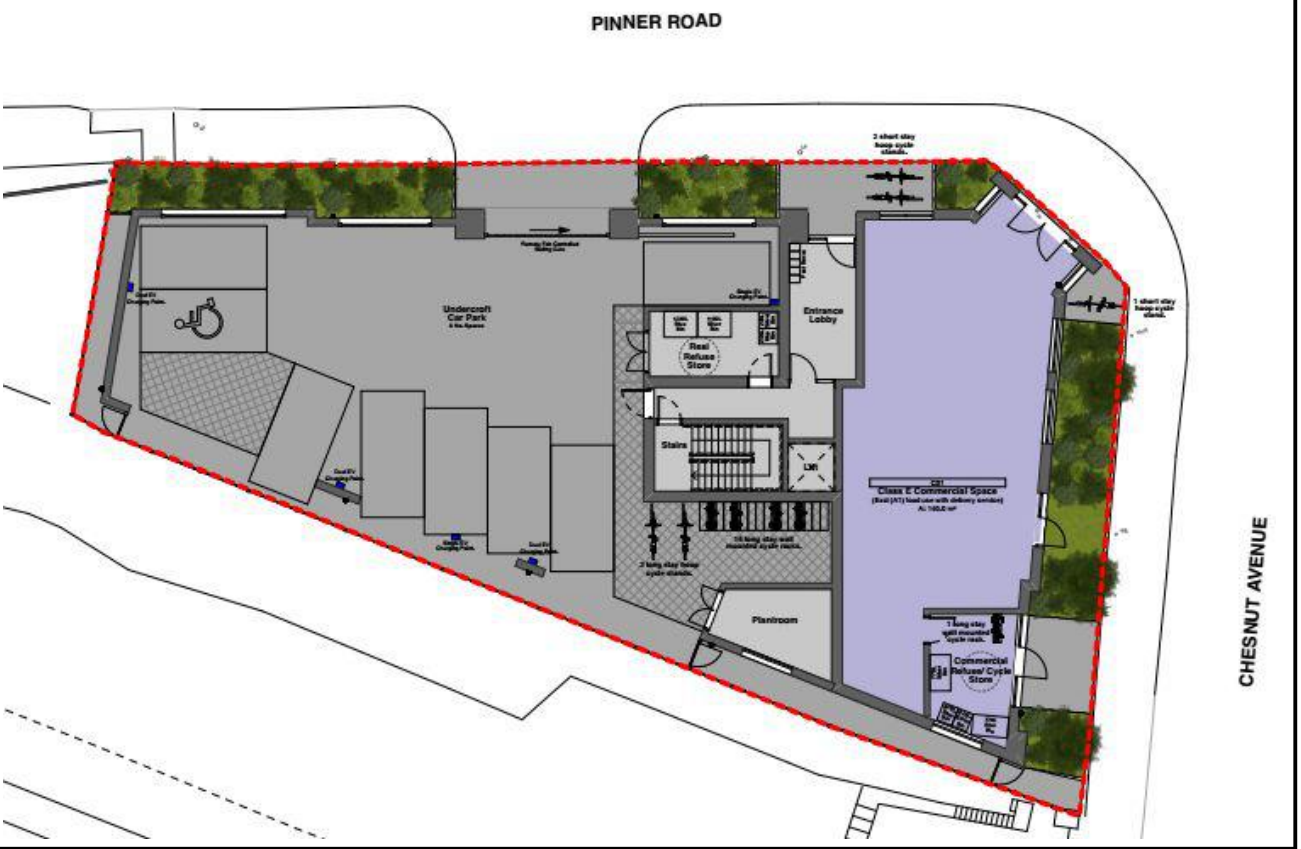


Figure One: Proposed Development Plans (Ground Floor)

2 Desk Study Information

2.1 Site Description, Location and Setting

Site Description	The site comprises a second hand car dealership with a small office building. The majority of the site is predominantly paved with hard standing, with some minor landscaping along Pinner Road. The office building is a small brick structure on the west of the site. The site is surrounded by a palisade metal fence security fence, there is a railway embankment to the south of the site, with the railway line ~6m above site levels, partly retained by a sheet piled wall and banked soil.		
Grid Reference	509700 190710	Location	Corner of Pinner Road and Chestnut Avenue, Northwood. Approximately 23km north west of London City.
Elevation (approx)	80m AOD		
Size (approx)	0.05ha		

Table Three: Site Location and Setting

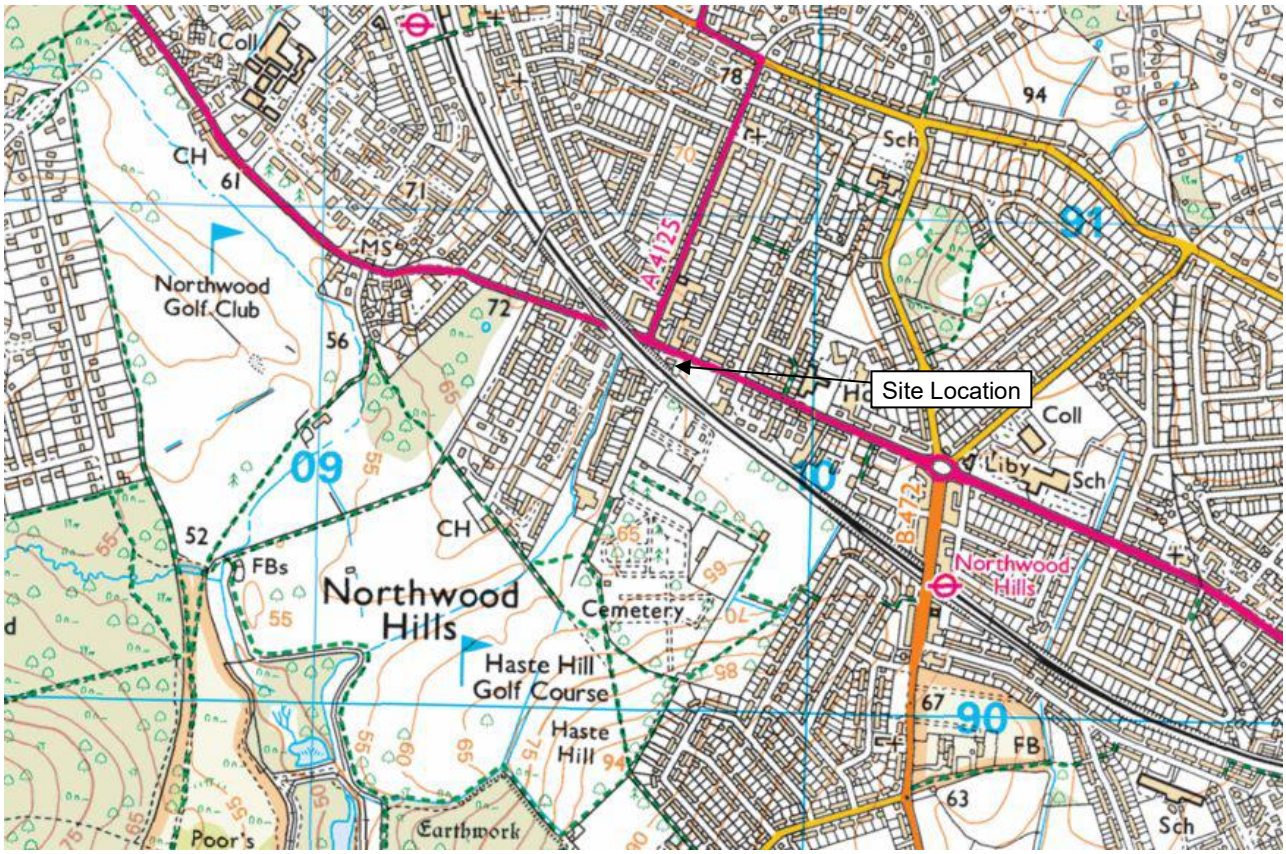


Figure One: Site Location Map

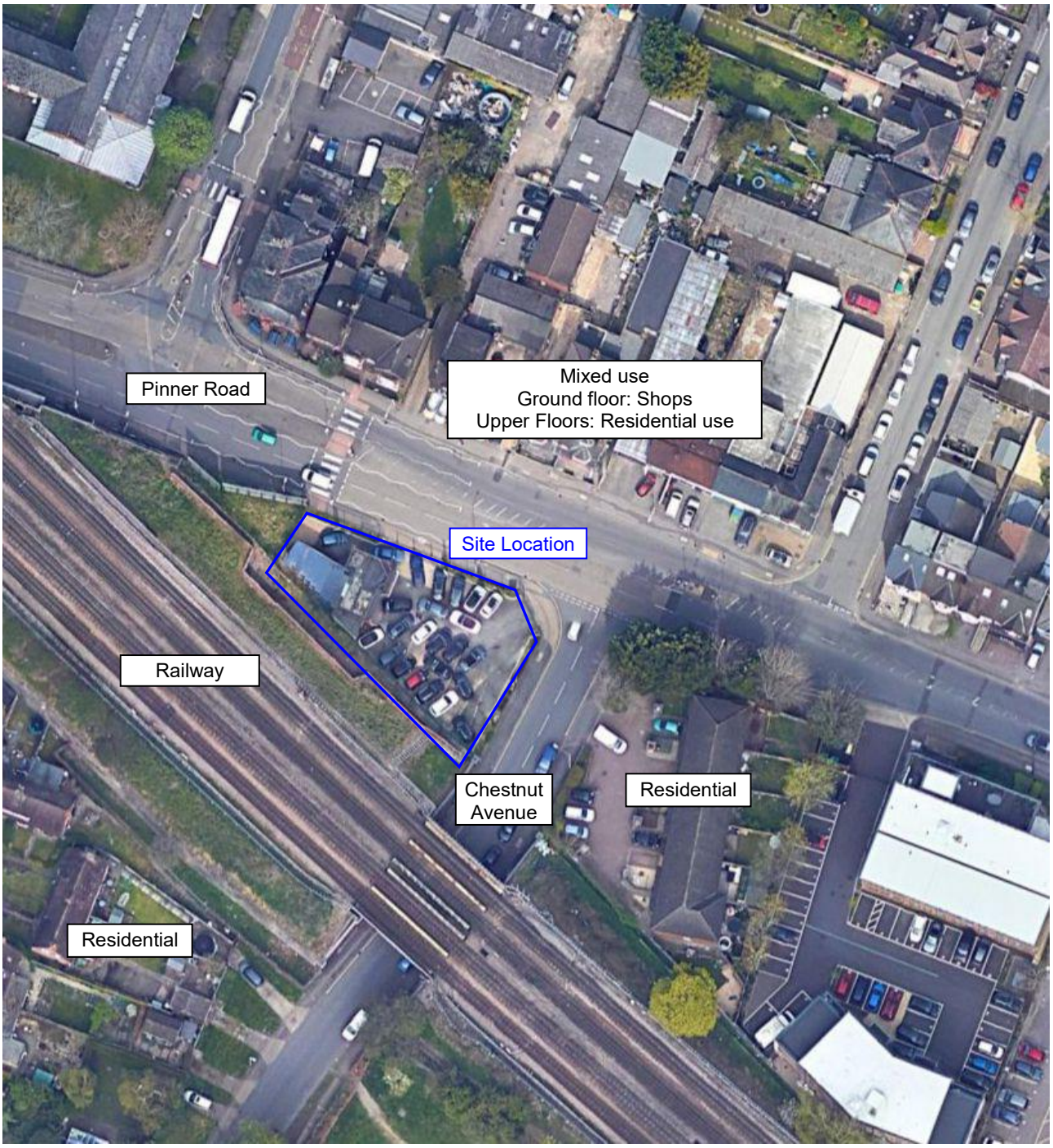


Figure Two: Aerial Photograph Showing Site and Surrounding Area

Direction	Details
North	Pinner Road, followed by mixed use building (ground floor retail with upper floor residential), car sales business and cafe directly to the north (~20m), with residential properties beyond.
East	Chestnut Avenue, followed by residential properties (~40m) beyond.
South and West	Railway embankment and railway line (10m), with residential properties beyond (~40m).

Table Four: Surrounding Land Use

2.2 Geology, Hydrogeology and Hydrology

	Geological Unit	Description	Estimated Thickness	Data Source
Drift Geology	None recorded at site's location			British Geological Survey (BGS)
Solid Geology	London Clay [mapped across eastern half of site only)	Blue-grey or grey-brown silty clay.	Up to 15m	
	Lambeth Group (likely to extend across entire site)	Sequences mainly of clay, some silty or sandy, with some sands and gravels,	30m	
	Upper Chalk	Chalk with flints.	>90m	
Existing Investigation Data	The BGS hold records for several boreholes constructed at the site. Borehole ref. TQ09SE359 records geology Made Ground to 2.1m over the Lambeth Group, comprising firm to stiff greenish grey mottled orange clay to 4.8m over blueish green grey very clayey sand to borehole termination depth of 4.9m (refusal on hard ground). A second borehole constructed ~100m to the north-west (ref. TQ09SE1) records brow mottled clay to 2.3m over brown and green sand to >9.5m, with flint peddles from ~9m, and then chalk to a termination depth of 11.2m.			
	Previous investigation reports following the removal of underground infrastructure described the underlying geology as Made Ground to a maximum depth of ~0.5m consisting of orange brown sandy clay with flints with brick and cobbles. The Made Ground was underlain by firm to stiff greenish clay which became orange brown below ~1.0m.			Ref. 2

Table Five: Regional Geology

	Geological Unit	Aquifer Classification	Groundwater Vulnerability	Data Source
Drift Geology	None recorded at site's location			Environment Agency
Solid Geology	London Clay (where present)	Unproductive Stratum	Low	
	Lambeth Group	Secondary Aquifer (Class A)	Medium	
	Upper Chalk Formation	Principal Aquifer	High	
Existing Investigation Data	No groundwater was recorded in either of the BGS boreholes referenced above. However, a borehole located ~400m to the south-east (ref.TQ19SW40), records groundwater strike at 40m within the underlying chalk, rising to 27m.			BGS
	Groundwater was not recorded as being present within either of the previous investigation reports.			Ref. 2

Table Six: Regional Hydrogeology

	Description	Distance	Direction	Data Source
Surface Water Features	Land drain, flowing south-west into Ruislip Lido (~1km) (in the absence of alternatives, we assume this was the land drain identified in Ref.1 as having contained product).	55m	West	Ordnance Survey

Table Seven: Regional Hydrology

Abstraction	Surface Water			Groundwater		
	Distance	Direction	Purpose	Distance	Direction	Purpose
Nearest Public Water Supply	None within 2km of the site			1.1km	South west	Potable water supply
Source Protection Zone	The site lies within an SPZ Zone 2 - Outer Protection Zone. This abstraction will draw groundwater from the deep chalk units, which will be protected from impact by the shallow low permeability Lambeth / London Clay formation.					
Site located in an Environment Agency defined 'Drinking Water Safeguard Zone'				Surface Water		Yes
				Groundwater		No
Data sourced from Environment Agency						

Table Eight: Nearest Surface and Groundwater Abstractions

2.3 Site History

2.3.1 Historical Maps

Date	Review of Map – Description of Land Use at Site and in the Immediate Surrounding Area	Potentially Contaminative Land-use	
		On-site	Off-site
1868 / 1883	The site is undeveloped with three farms visible in the surrounding area. Pinner Road forms the northern site boundary and is orientated east-west.	None identified	None
1896 / 1987	The site remains undeveloped. There is a railway line forms the south western boundary (in the same location as the present day railway line. There are residential properties located 25m to the north and 75m to the north west.		Railway land
1913 / 1916	The site remains undeveloped. There are additional properties located to the north of the site, along the opposite side of Pinner Road, Including a Public House.		
1923 /1932	The site remains unused. The surrounding area has been substantially developed, primarily with residential properties but also with nurseries, a mortuary, tennis courts and council yard, which are all present within 125m of the site. There is a laundry ~150m to the north east.		Railway line and laundry
1959 - 1965	The site has been redeveloped and is identified as a garage. There is a large central building (likely including a canopy over the forecourt) with a large entrance at the front of the site. No significant changes to the surrounding area.	Garage (assumed retail filling station)	
1970-79	The site is still identified as a garage, but building has been relocated to the south east corner, along the site boundary with the neighbouring railway line. To the east of the site, the formerly vacant plot of land has been designated as a car park. The former laundry is no longer present. .		Railway line
1978-1988/ 1992/ 1993	The site has undergone further changes. There are now two buildings, one near the western boundary (assumed shop currently used as an office) and a larger structure (assumed forecourt canopy) in the centre of the site. The site layout reflects the maps included in previous reports (Ref. 1 and 2). No significant changes to the surrounding area.		
Copies of representative historical maps are included as Attachment Two			

Table Nine: Historical Maps Review

2.3.2 *Planning Records*

Hillingdon Borough Council have the following historical planning applications on their internet based planning portal which pertain to the site.

Date	Application Number	Local Planning Authority – Planning Records (from local planning authority website)	Evidence of Development
March 1976	10430/T3/1703	Erection of forecourt canopy with new pump island and widening of the pavement corridor at Northwood service station	Approved - unknown if implemented, no visible signs of filling station remain.
January 1982	10430/F/82/0090	Redevelopment of the existing petrol filling station to provide self service facilities at Northwood Service Station	
June 1982	10430/G/82/0810	Redevelopment of existing petrol station, with the erection of a new sales building, pumps and canopy	
September 1982	10430/H/82/1198	Details in compliance with 10430/82/0810(P)	
April 1985	5098/E/85/0687	Change of use of existing hard standing to car display area	
January 1995	10430/J/95/0144	Change of use from petrol filling station to sale of used commercial vehicles, erection of 1.8m high perimeter fencing and landscaping	

Table Ten: Summary of Online Planning Records

2.3.3 *Petroleum Officer Search*

As part of our assessment we have contacted the site's Petroleum Officer in order to obtain details relating to the site's petroleum installation. The petroleum officer has reported that they do not have any information on file for the site.

2.3.4 *Review of Permits and Regulatory Actions*

Date	Licence Number	Details	Issuing Authority
No identified records of active or past permits or licenses associated with the site			District Council

Table Eleven: Current or Past Permits or Licences

Date	Details	Data Source
March 1993	Pollution incident to controlled waters. Unknown sewage created a Minor Incident [category 3] (Incident Ref. N1930076). Located ~115m south west of the site	Environment Agency
April 1993	Pollution incident to controlled waters. Miscellaneousness pollutants caused a Minor Incident [category 3] (Incident Ref. N1930144). Located ~230m south west of site	
August 1995	Pollution incident to controlled waters. Unknown sewage created a Significant Incident [category 2] (Incident Ref. N1960501). Located ~80m south west of the site	
August 1995	Pollution incident to controlled waters. Unknown sewage created a Minor Incident [category 3] (Incident Ref. N1950416). Located ~80m south west of the site	
February 1996	Pollution incident to controlled waters. Oils created a Minor Incident [category 3] (Incident Ref. N1960051). Located ~230m south west of site	
September 1996	Pollution incident to controlled waters. Unknown sewage created a Minor Incident [category 3] (Incident Ref. N1960501). Located ~150m south west of the site	
October 1996	Pollution incident to controlled waters. Unknown sewage created a Minor Incident [category 3] (Incident Ref. N1960558). Located ~180m west of the site	
January 1997	Pollution incident to controlled waters. Storm sewage created a Minor Incident [category 3] (Incident Ref. THN11997030862). Located ~230m south west of the site	
January 1997	Pollution incident to controlled waters. Storm sewage created a Minor Incident [category 3] (Incident Ref. THN11997030957). Located ~180m west of the site	
Notes	We have not identified any registered pollution incidents or regulatory actions specifically associated with the site, including any records (outside of those contained in historic reports) relating to the fuels identified in a nearby stream in 1987.	

Table Twelve: Registered Pollution Incidents and Regulatory Actions

2.3.5 *Anecdotal Information / Other Historical Information*

Historical Reports	Two historical reports (Ref. 1 and Ref. 2) describe the site as an operational filling station with underground storage tanks (at least 6 tank vessels), and three pump islands. The historical reports describe the site as being closed in December 1994, which correlates with the planning application for a change of use to vehicle sales in January 1995.

Table Thirteen: Additional Information

2.4 Additional Information

Flood Risk Zone	Flood Risk	Data Source
Zone 1	The site lies within Flood Zone 1. Land and property within a Flood Zone 1 are defined as having a low probability of flooding. On this basis, and as the site is smaller than 1 hectare, a flood risk assessment is not likely to be required as part of future planning applications.	Environment Agency

Table Fourteen: Preliminary Flood Risk Assessment

Risk	Description	Data Source
Radon Risk	The radon 'Affected Area' maps that have been produced from radon measurements in homes by Public Health England can be used to indicate whether or not radon is likely to be a hazard in typical workplaces and can be used to inform risk assessment and need for radon measurements. The site is located in an area where the National Radiological Protection Board have determined that <1% houses exceed the recommended Action Level for radon for existing homes in the UK of 200Bqm^{-3} (averaged over a year). The site is therefore in an area of low radon risk and no radon protective measures are necessary in the construction of new structures.	Public Health England
Nearest Landfill	The Environment Agency records show that there are no current or past landfill sites within 250m of the site.	Environment Agency
Degradable material within Made Ground	Historical reports indicated there is up to 0.5m of Made Ground at the site, generally characterised by gravel and brick. This is now likely higher given tanks were removed and excavations in filled (assumed with inert material). No description or evidence of any degradable material present.	Ref. 1 and Ref. 2
Peat and organic matter within alluvial deposits	No source identified. No superficial deposits shown to be present beneath site or immediate surrounding area.	BGS
Degradation of spilled or leaked petroleum hydrocarbons	The site was redeveloped as a petrol station between the 1930s and the 1950s, and ceased operations in 1994. Hydrocarbon impacted shallow soils were identified beneath the site and 120m^3 of impacted materials were excavated and removed from site during its decommissioning. Residual hydrocarbon impact of soils remaining on site is possible.	Ref. 1 and Ref. 2
Natural deposits (e.g. coal measure strata).	Near surface geology comprises clay soils (Lambeth Group / London Clay). This unit is not commonly associated with the generation of elevated concentrations of hazardous ground gases.	BGS

Continued on the following page

Continued from the previous page

Organic rich silt formed in water bodies (e.g. Ponds, docks and rivers).	No significant source identified.	OS maps
Conclusions	We have not identified any significant potential sources of hazardous ground gases associated with the site.	

Table Fifteen: Hazardous Ground Gas Risk

Risk	Description	Data Source
Risk of Coal Mining	The site is not located in an area considered to be at potential risk from coal mining.	Coal Authority
Solution Feature Risk	The site's location has been classified as No Hazard. Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.	BGS
Shrinking or Swelling Clay	The sites site's location has been classified as Moderate Risk. Shallow soils are likely to comprise clays with a high plasticity.	
Compressible Deposits	The site's location has been classified as No Hazard. No indicators for compressible deposits have been identified. No special actions required to avoid problems due to compressible deposits.	
Running Sands	The sites site's location has been classified as very low risk. We consider there to be a very low potential for running sand problems.	
Landslides	The sites site's location has been classified as very low risk. Slope instability problems are unlikely to be present on site, although the stability of the wall retaining the railway embankment must be investigated.	
Potential for Unexploded Ordnance	London bombing density classified as 'Low', indicating the risk of encountering unexploded ordnance at the site location is considered low.	Zetica Ltd

Table Sixteen: Other Geological Hazards

Receptor	Description	Data Source
Other Sensitive Sites	None identified	Environment Agency

Table Seventeen: Other Environmental Receptors

3 Preliminary Risk Assessment

3.1 Conceptual Site Model

We have used the information presented in the previous sections of this report to create an outline Conceptual Site Model for the site. We have reviewed potential contaminants and their receptors together with any possible pathways that may link them. The resulting pollutant linkages are summarised below.

Contaminant	Pathway	Receptor	Viable Pollutant Linkage
Our historical review indicates that the site was first developed as a filling station between 1932 and 1956, prior to this it was farmland. The site appears to have been redeveloped at least once in the early 1980s. The filling station ceased operations in 1994 with six below ground tanks and associated pipework removed. Historic reports identified historic contamination of soils on site, albeit 120m^3 of hydrocarbon impacted soils were removed during the decommissioning works. No groundwater identified in previous works.	Ingestion and dermal contact	Future site users	Possible - Although risk limited to landscaped areas and risk can be easily mitigated through engineering controls.
	Permeation of volatile contaminants into drinking water supply service pipes	Future site users	Possible - subject to concentrations of any volatile contaminants in shallow soil. However, the risk is considered relatively low given the fuel infrastructure was removed and the site was remediated when it ceased trading as a petrol station (over 25 years ago). Any residual hydrocarbon compounds are likely to have continued to degrade through natural processes.
	Volatilisation of hydrocarbons to indoor/outdoor air (either direct from soils or dissolved in groundwater)	Future site users	
	Off-site migration of hydrocarbons: volatilisation to indoor/outdoor air (vapours from on-site soils or via lateral migration of dissolved compounds)	Commercial and residential properties within ~20m.	
	Downward migration of contaminants to groundwater	London Clay Formation (Unproductive Strata)	No - No viable receptor identified.
		Underlying Secondary and Principle Aquifers	Unlikely - Low permeability London Clay will impede vertical/lateral migration of mobile contaminants and afford protection to underlying more sensitive aquifers and other environmental receptors.
	Off-site migration of contaminants dissolved in groundwater leading to direct impact of environmental receptors	Land Drain ~80m west	
		Potable water supply borehole ~1.1km south west	
		Site located in SPZ Zone 2	
Hazardous Ground Gases	Accumulation in shallow soils beneath followed by migration into site buildings	Future site users	Unlikely, no significant sources of hazardous ground gases identified (subject to the concentration of hydrocarbons in shallow soil).

Table Eighteen: Conceptual Site Model

4 Conclusions and Recommendations

4.1 Environmental Conclusions

Site Details	The site is currently used as a second hand car dealership with some offices on the western side of the site. The majority of the site is covered in hard standing tarmac, with the exception of flower beds around the site boundary. The site is surrounded by a palisade metal fence security fence. We understand that Polaris intend to redevelop the site with a mixed commercial and residential building. The commercial units and parking will form ground level with the upper two levels populated with nine flats. There will be a small communal landscaped area within the development.
Review of Environmental Site Sensitivity	The site is located in an area of low to moderate environmental sensitivity. Geology maps indicate that shallow geology underlying the site is likely to comprise Lambeth Group, comprising firm to stiff clays grading to dense sand with clay layers with pebbles, to at least 15m. London Clay may also be present, overlying the Lambeth clays, across the eastern half/end of the site. Groundwater is likely to be present within the underlying chalk, potentially at depths exceeding 30m. The the site is located within a Source Protection Zone, with a groundwater abstraction borehole ~1.1km to the south west. These are both associated with deep chalk aquifer and not considered at risk of impact due to the presence of the shallow low permeability clay soils, which will impede lateral/vertical migration of any mobile contaminants that may be present at shallow depths.
Review of Site History and Potential Contaminant Sources	The site was first developed as a garage between 1936 and 1952, prior to this the site was undeveloped farmland. The garage was redeveloped at least once in the early 1980s with a new sales building, canopy and pumps. The Petroleum Officer's records indicate there was a fuel leak at the site, identified in 1987. Hydrocarbon product was removed from remediation wells over a number of years and then the petrol station closed and decommissioned. As part of the decommissioning process six below ground tanks were removed and ~ 120m^3 of impacted soils were removed. Records indicate the occurrence of a fuel within a nearby stream, but we understand this was never definitely proven to originate from the petrol station. We have not identified any significant potential sources of hazardous ground gases associated with the site. The current site use as a car sales yard is not likely to be a source of significant contamination.
Conclusions	Based on our desk-top review we consider the potential for significant contamination to be present in shallow soils to be low. However, given the site's extended use as a retail filling station and records that indicate the occurrence of a fuel leak, albeit with relatively extensive remedial works having been carried out, we cannot discount the possibility that residual hydrocarbon impact will be present in shallow soils.

Table Nineteen: Environmental Conclusions

4.2 Geotechnical Considerations

Anticipated Geology and Hydrogeology	Based on previous investigation data, shallow soils are likely to comprise firm to stiff clay over dense sand from shallow depths. An intrusive geotechnical investigation would be required to confirm the nature of the geology beneath the subject site, and allow an assessment of soil strength profile and engineering properties, to assist with the design of appropriate foundations and highlight potential development constraints.
Presence of Buried Obstructions and Services	The site has undergone redevelopments on more than one occasion. As a result, there is the potential for buried obstructions (i.e. Former foundation, services, previously unknown fuel storage tanks) to be present beneath the site. The site is likely to have connections to all primary utilities, including electricity, gas, water, sewerage.
Use of Soakaways	The Lambeth Group (and London Clay) deposits are likely to comprise cohesive soils of low permeability, the use of soakaways is unlikely to be suitable to receive surface water run-off from the site buildings.
High Plasticity Soils	Cohesive (clay) soils, and in particular those with a high plasticity, can experience significant volume change (i.e. Shrink and/or swelling) in response to changes in water contents, commonly as a direct result of interaction with vegetation. We have identified juvenile or semi-mature trees at the site, located on the boundary. Given the likely high plasticity of the underlying clay, these trees are likely to influence the foundation design. More detailed information about the trees should be sought from specialist arboriculturist, including their height, species and maturity. This information, along with plasticity the data from any future ground investigation works, must be taken into consideration when determining final foundation design.
Areas of Made Ground and/or Soft Ground	Areas of the site where former petroleum infrastructure had been located (ie. Tank Farm, Interceptor) and historic soil excavations are likely to have been backfilled following removal of the infrastructure. We recommend that should areas of Made Ground and/or any soft regions of clay be replaced with suitably compacted inert granular fill material in the vicinity of proposed foundations to ensure a suitable bearing capacity for its intended purpose.
Waste Classification	We recommend that waste classification analysis be carried out to assist in the classification of any waste soils that are to be produced as part of the proposed redevelopment. Classification should be carried out using the characterisation assessment and analysis described within the Environment Agency's technical guidance 'Waste Classification (WM3, 1st edition 2015). All waste soils and fill materials must be disposed of at an appropriately licensed disposal site. A registered waste haulage contractor must transport all waste soils. It is the responsibility of the site owner to ensure that wastes are safely transported and disposed of correctly.

Continued on the following page

Continued from the previous page

Slopes / Slope Stability and Retaining Walls	Surface levels are relatively level. However, there is a railway embankment to the south west of the site, currently supported by sheet piles and banked soils. Information on the design of this embankment should be sought from the railway operator and be fed into the design of the foundations for the proposed building. The foundations of the new building must be designed to not detrimentally impact on the stability of the railway embankment. We note that managing this aspect of the design process should be done in consultation with the railway operator.
UXO	The site is classified by Zetica interactive mapping as being located in a low risk area with respect to potential unexploded ordnance. No further action is recommended.
Excavations and Ground Water	Groundwater is anticipated to lie >10m. However, seasonal/temporary fluctuations in groundwater level due to extended periods of heavy rain may lead to surface water ponding in excavations and/or groundwater being present at shallower depths than stated above. We therefore recommend that provision be made for limited dewatering of excavations be made.
Services	Due to the historical usage, it is likely that buried services are present beneath the redevelopment area. A below ground utility survey, completed as part of pre-enabling works, would enable the location of these services to be established and assist with determining how they may impact upon the proposed development. This may include examples such as decommission underground tanks or liners.

Table Twenty: Geotechnical Considerations

4.3 Recommendations

We make the following recommendations relating to the proposed development:

Environmental Investigation	We recommend that a Phase II environmental investigation is undertaken to allow an assessment of the underlying ground conditions to determine if potentially complete pollution linkages are present, specifically the risk associated with the sites historical use as a filling station.
Geotechnical investigation	We have identified several geotechnical risk factors and uncertainties associated with the site. We therefore recommend that geotechnical testing is carried out as part of the environmental site investigation in order to provide information regarding soil properties and ground conditions.
Regulator Consultation	We recommend that this report is submitted to the Local Authority in support of the planning application to redevelop the site.
Your attention is drawn to the Notice to Interested Parties included as Attachment One.	

Table Twenty-one: Recommendations

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

ATTACHMENT ONE:
NOTICE TO INTERESTED PARTIES

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

NOTICE TO INTERESTED PARTIES

The purpose of our work Is to provide general information on the environmental And/Or geotechnical conditions existing at the site And related to soil And/Or groundwater. The Client Or others specified the scope of the investigation And the validity of our conclusions Is limited by the scope of work specified. We are Not responsible for any such limitations Or omissions.

Where stated in this report, we have used information supplied by third parties. While we have evaluated As far As possible the validity Of this information, we cannot guarantee its accuracy In any way whatsoever.

No investigation technique Is capable Of completely identifying all Of the contaminants that might be present In the soil Or groundwater under a site. Where specified In our report, we have examined the ground by constructing a number Of boreholes And/Or trial pits. We recovered samples Of soil And/Or groundwater from available exposures.

The depth And spacing Of our Sampling locations were selected To ensure With a reasonable probability that they would be representative Of the actual conditions across the whole site. However, safety considerations relating To existing site infrastructure may have restricted our ability To investigate all potential contaminant sources. Specifically, we were unable To investigate the soil And groundwater condition immediately adjacent To the underground structures And/Or buried services. These limitations must be borne In mind When considering the conclusions reached In this report.

Soil Is intrinsically variable And the spread Of contaminants within the soil Is therefore subject To a degree Of non-uniformity. For these reasons no sampling technique can completely eliminate the possibility Of obtaining samples that are Not representative Of the actual conditions. Our sampling techniques are intended To reduce the possibility To an acceptable level, within the limits imposed by the scope of the investigation.

Groundwater levels And soil vapour levels that we report were accurate at the time of the investigation. Groundwater And soil vapour levels are variable. Long term monitoring may be required to ensure that the levels recorded during our investigation are representative of long term And possible 'worst case' conditions. In accepting our recommendations and/or conclusions the Client acknowledges that further, more detailed investigation would allow a more accurate assessment of site conditions to be made and that this would reduce any consequential risk to the Client.

Our investigation was carried out to assess the significance of contamination resulting from use of the site as identified in this report. Unless we have indicated otherwise, no assessment of the potential impact of any other previous uses has been made. No investigation was carried out to determine whether or not any deleterious or hazardous materials (such as asbestos) have been used in the construction of the buildings present on the site. Unless otherwise stated no investigation or assessment has been made of the presence or otherwise of invasive plant species including but not limited to Japanese Knotweed.

Unless specifically stated otherwise, we have not assessed the effect of any proposed future construction activities on existing structures on or near to the site. Nor, unless stated otherwise, have we assessed the likely effect of trees on existing or proposed structures on or near the site.

We do not accept any responsibility for the cost of remedial works or other costs incurred in whatever way whatsoever as a result of any omissions, errors or other shortcomings in this report unless we have been given reasonable opportunity to verify ourselves that such faults exist and we have been given a reasonable opportunity to carry out works to remedy such faults ourselves using the most practicable means available to us. We do not accept liability for any consequential losses incurred by you while either we or others carry out any remedial works we deem necessary.

This report has been prepared for the Client, as specified on the cover page of this report. In accepting our recommendations and/or conclusions the Client accepts that the terms of our appointment were as detailed in the Proposal, or Proposals, that we provided to the Client before being appointed and that these terms supersede any other terms and/or conditions set out in any contracts agreed between ourselves and the Client, regardless of when such terms and/or conditions were agreed to by us and/or signed by us.

Use of, and reliance on, this report by other third parties will be at such third parties own risk, and we do not accept any liability or responsibility to them.

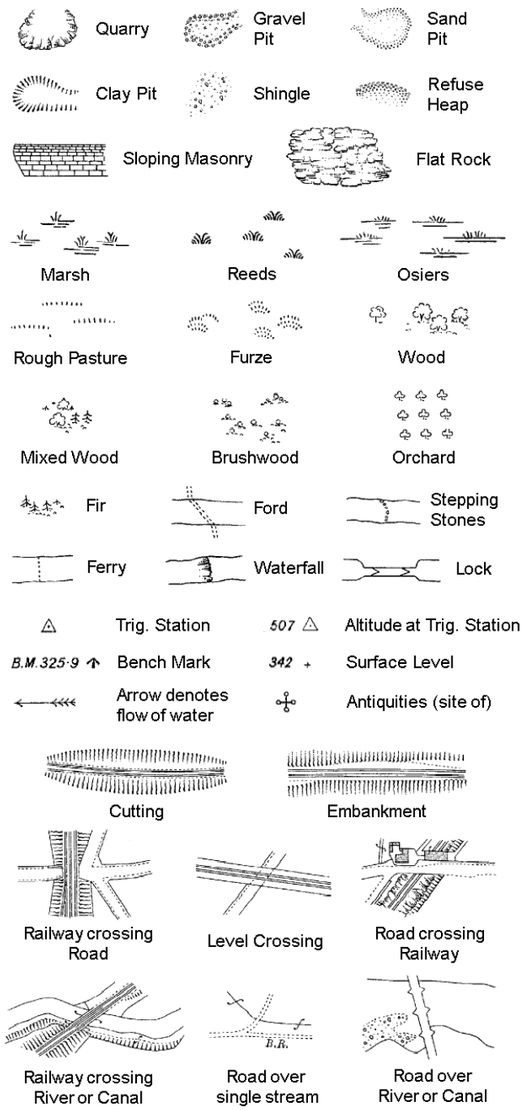
Neither the whole nor any part of this report, or any reference to it, may be included in any published document circular or statement or published in any way without our prior written approval.

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

ATTACHMENT TWO: HISTORICAL MAPS

Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

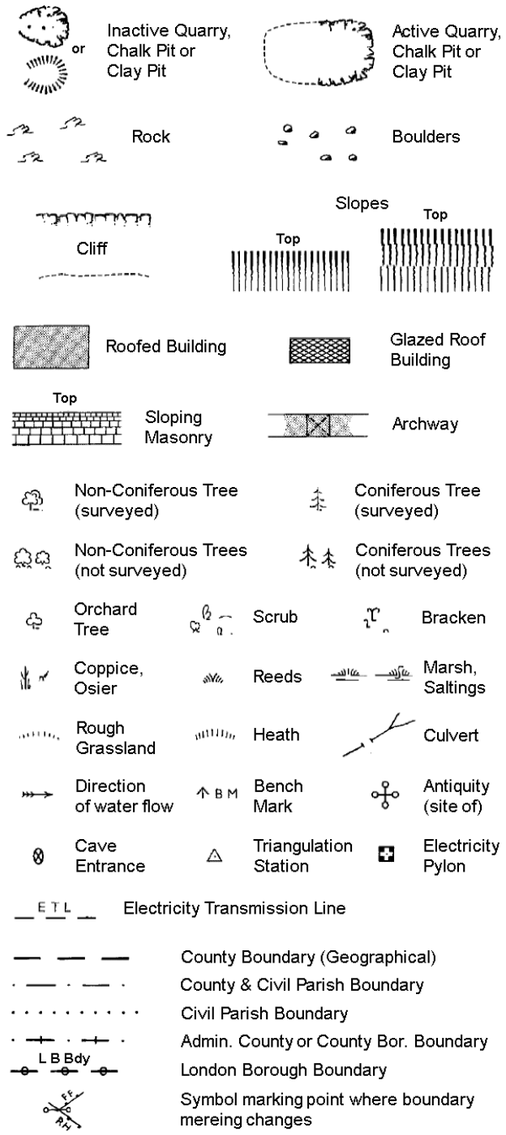
Administrative County & Civil Parish Boundary

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

Co. Burgh Bdy. County Burgh Boundary (Scotland)

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

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



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

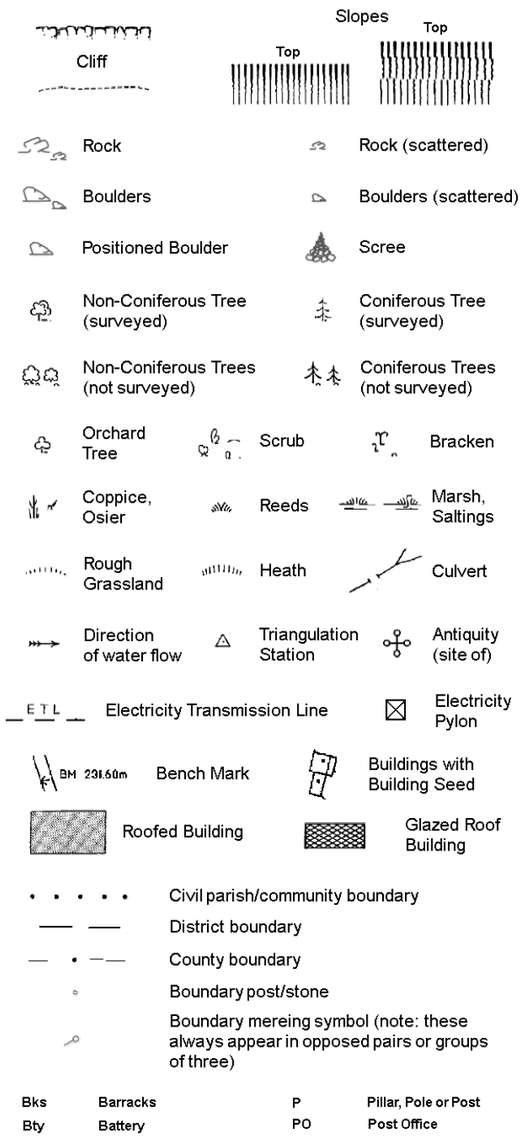
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

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

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



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

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

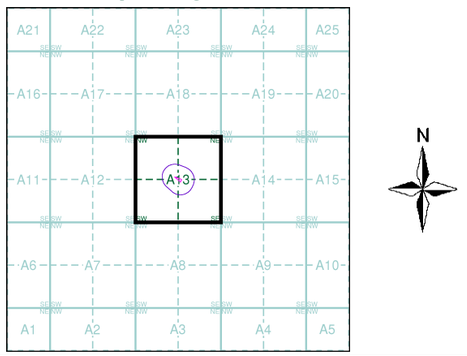
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Historical Map - Segment A13



Order Details

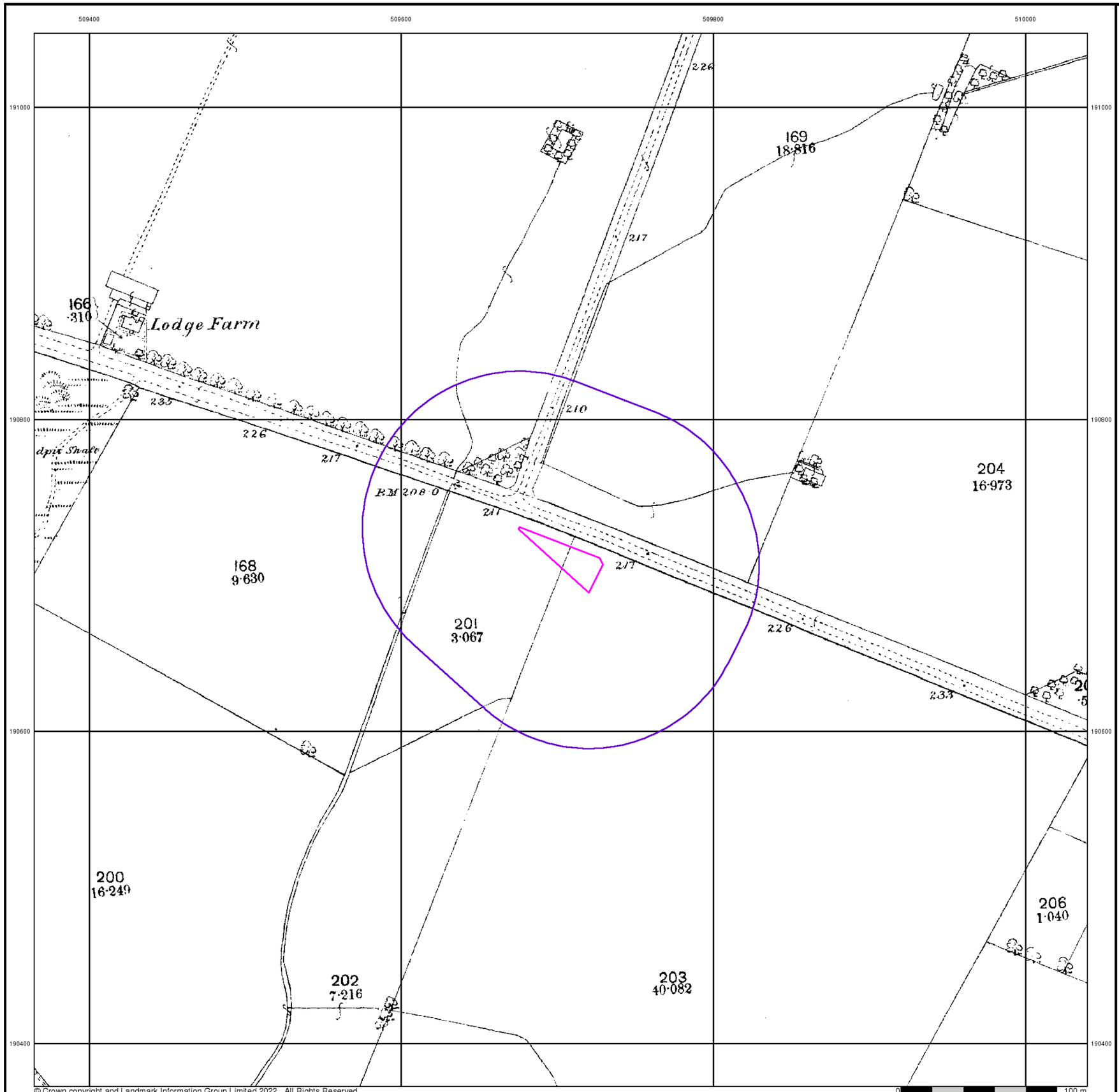
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

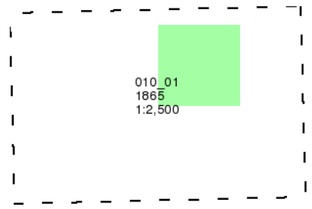
Middlesex

Published 1865

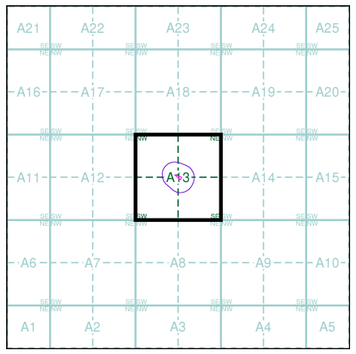
Source map scale - 1:2,500

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

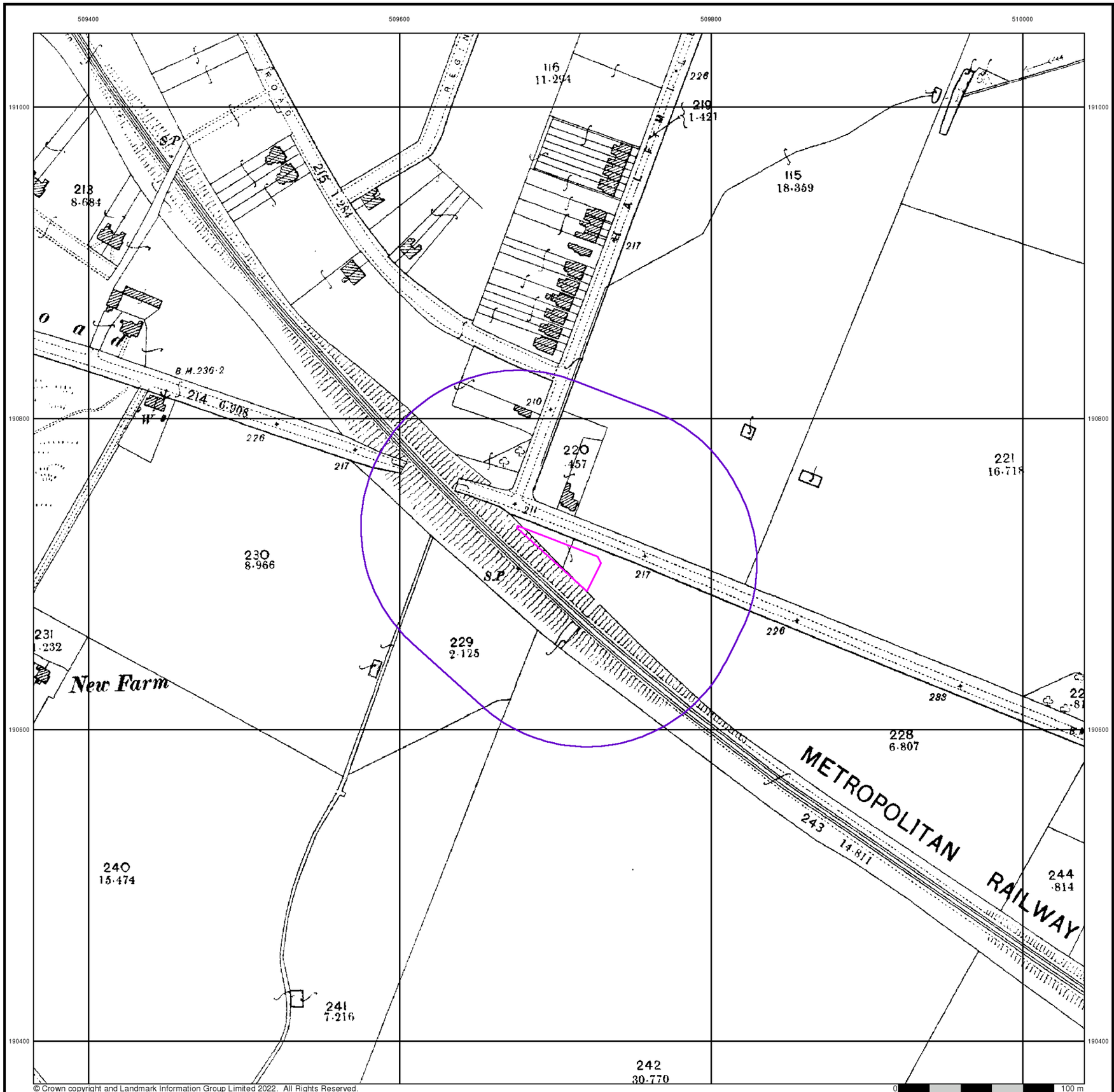
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

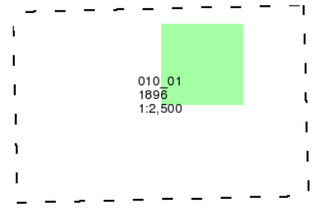
Middlesex

Published 1896

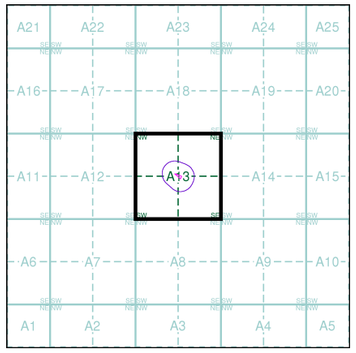
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

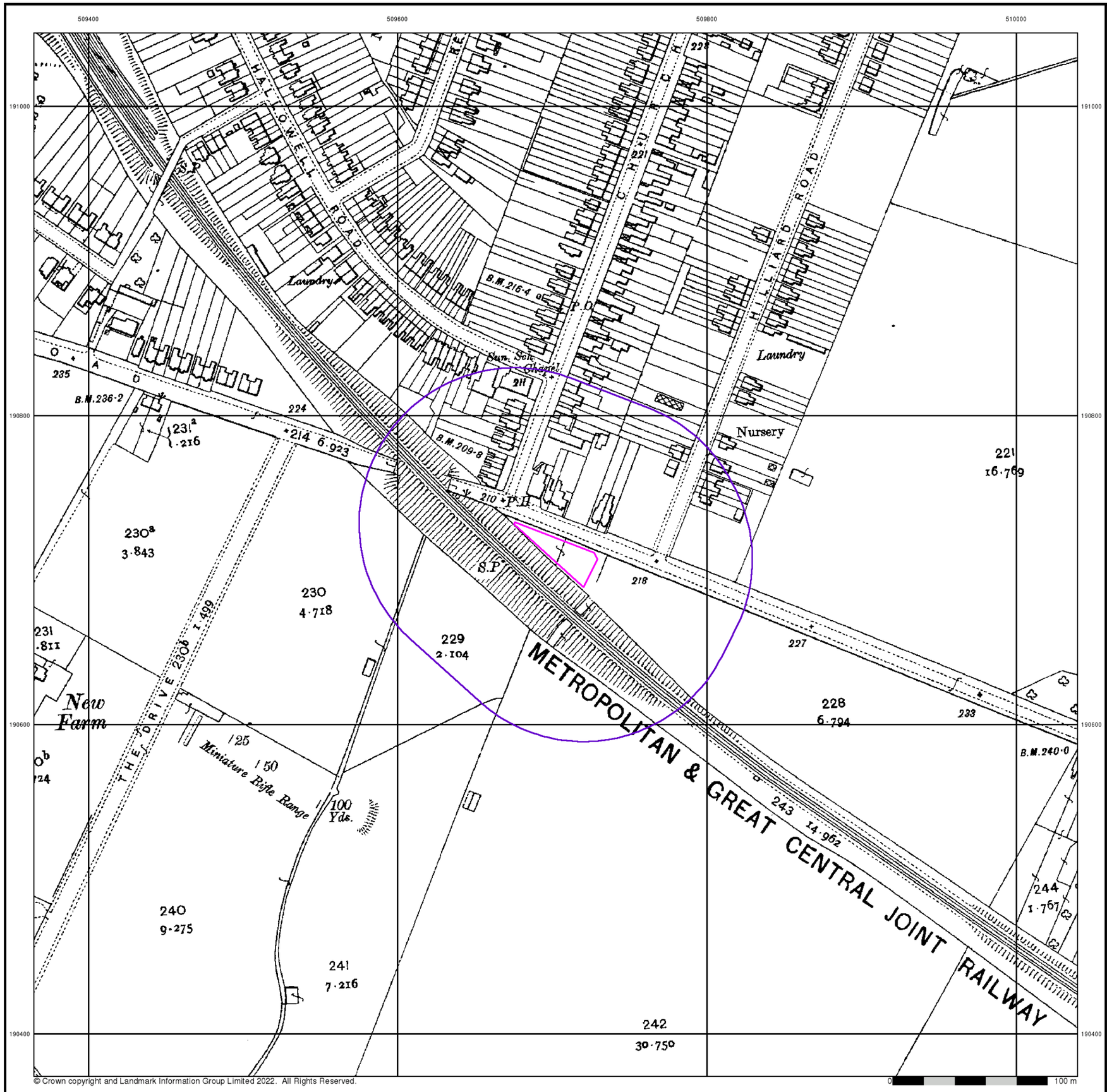
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

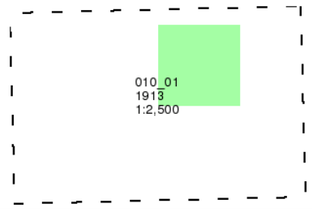
Middlesex

Published 1913

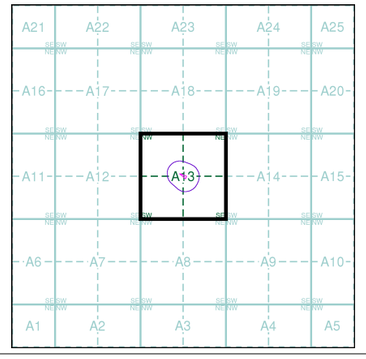
Source map scale - 1:2,500

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

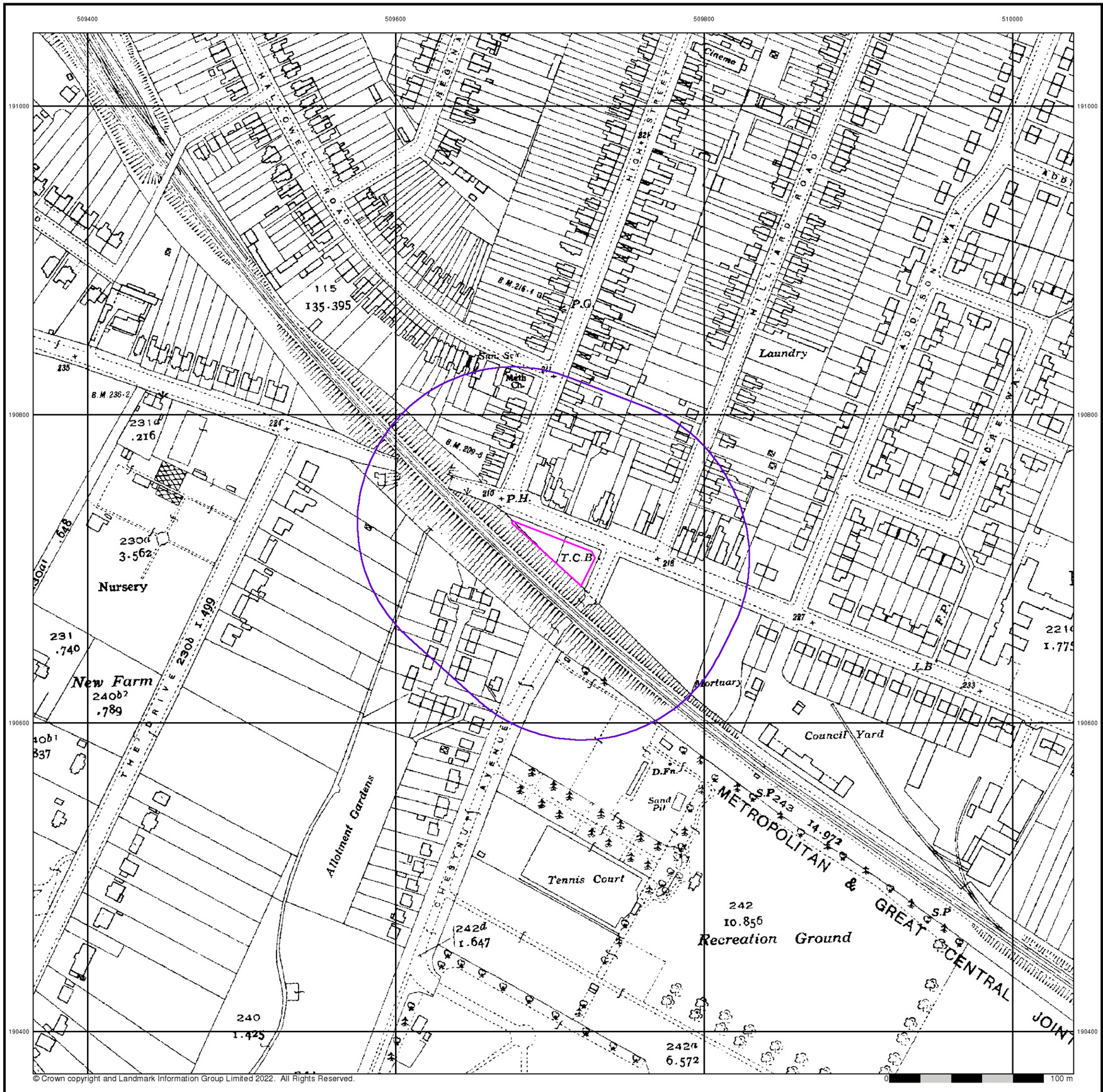
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

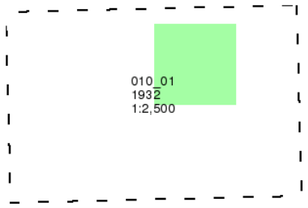
Middlesex

Published 1932

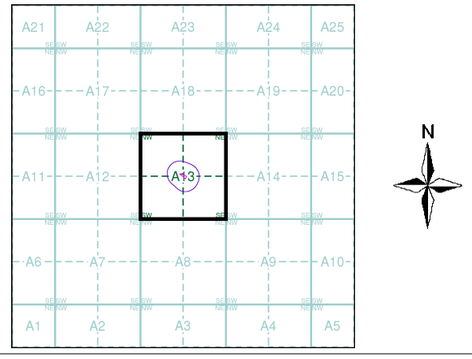
Source map scale - 1:2,500

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

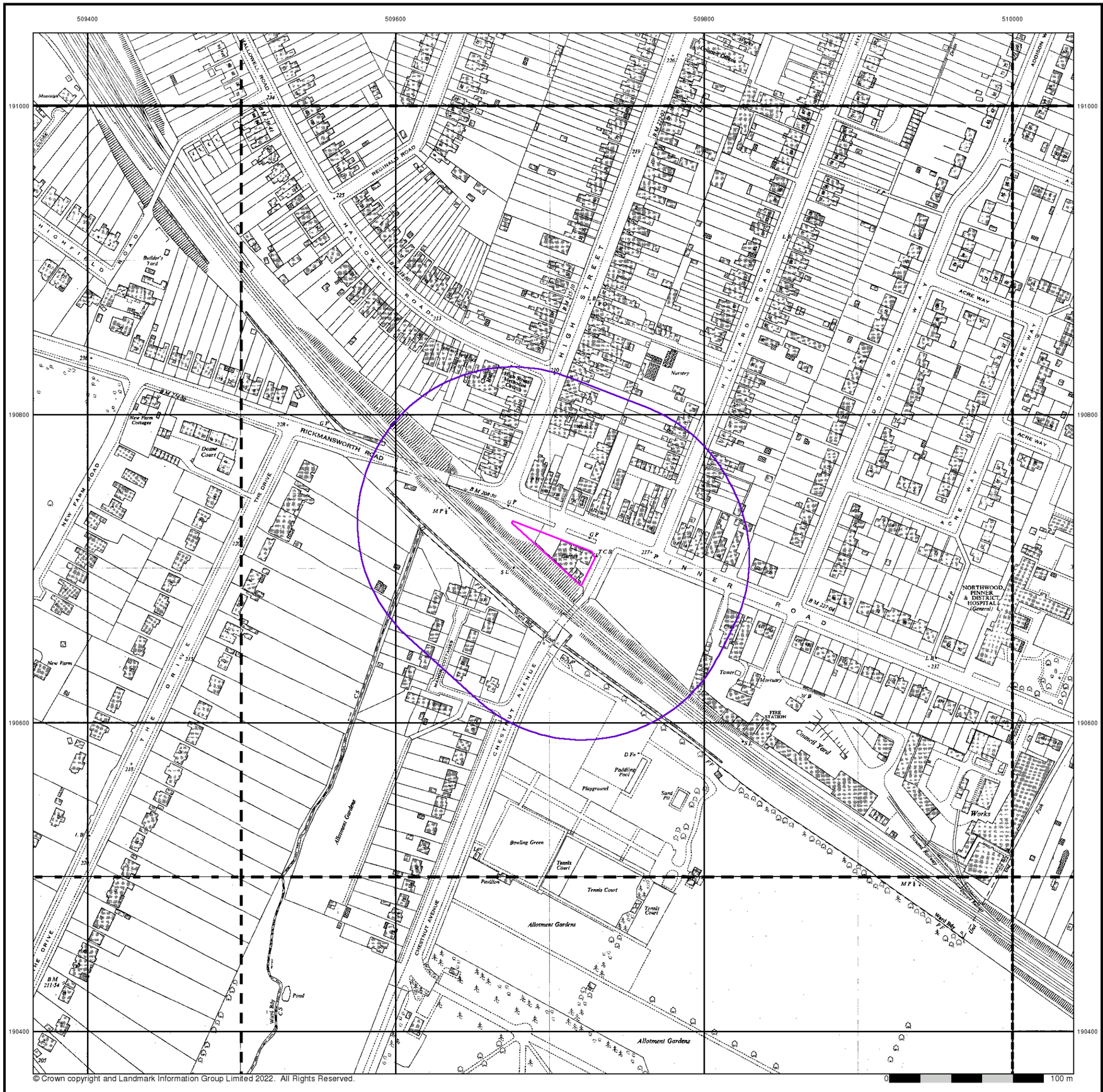
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

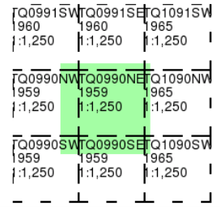
Ordnance Survey Plan

Published 1959 - 1965

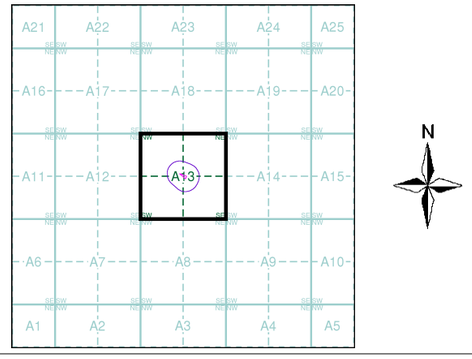
Source map scale - 1:1,250

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:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark INFORMATION GROUP

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

Envirocheck®

LANDMARK INFORMATION GROUP®

Ordnance Survey Plan

Published 1960 - 1966

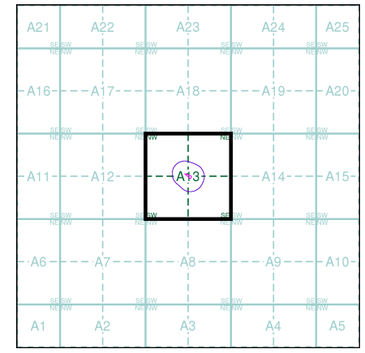
Source map scale - 1:2,500

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)

TQ0991 1960 1:2,500	TQ1091 1966 1:2,500
TQ0990 1960 1:2,500	TQ1090 1966 1:2,500

Historical Map - Segment A13



Order Details

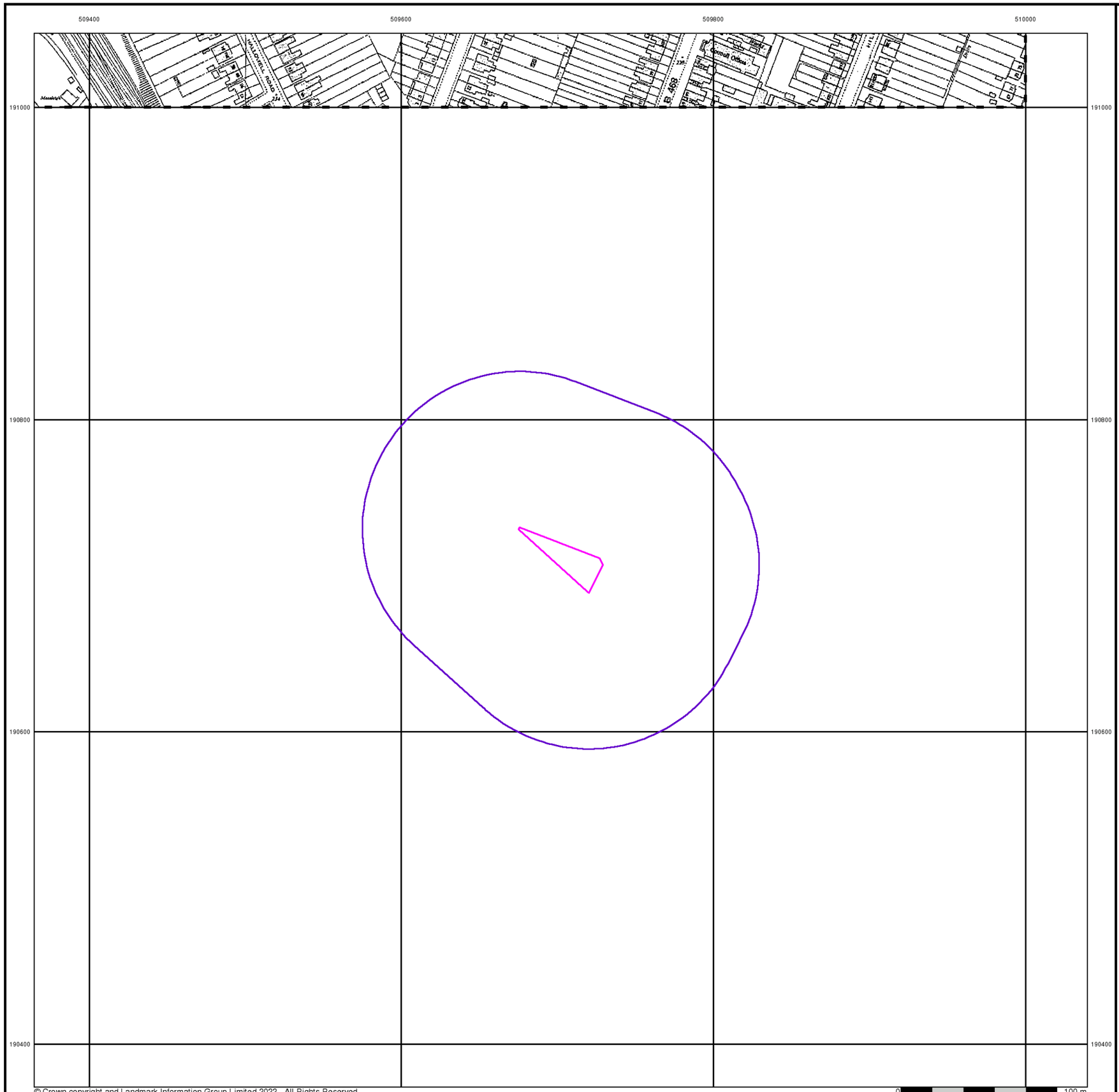
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

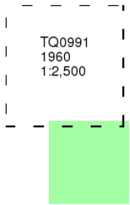
Additional SIMs

Published 1960

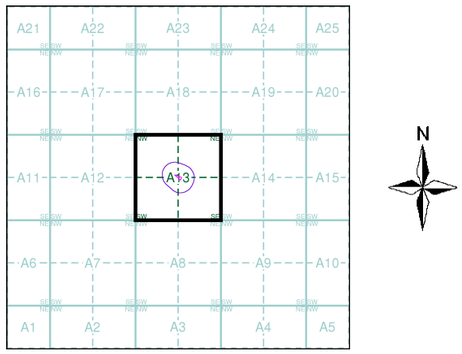
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

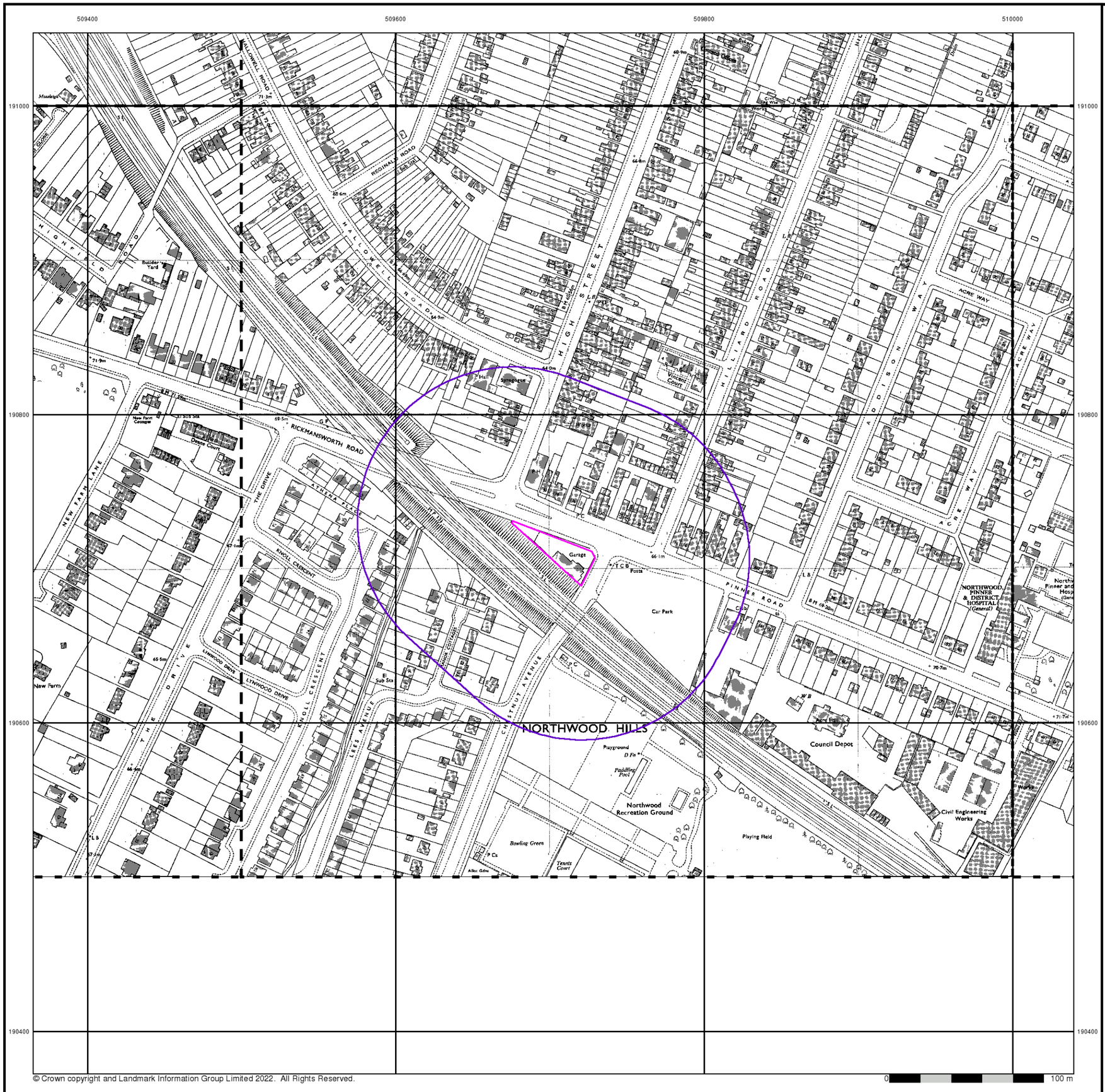
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

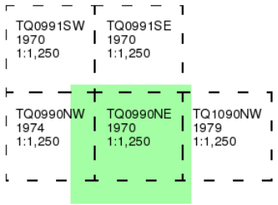
Ordnance Survey Plan

Published 1970 - 1979

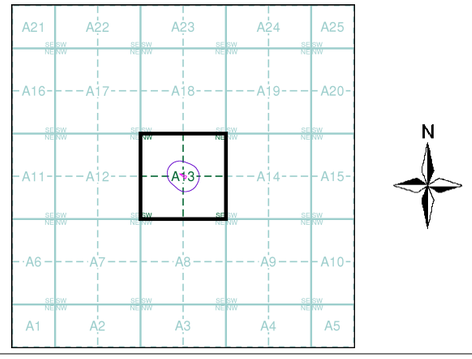
Source map scale - 1:1,250

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

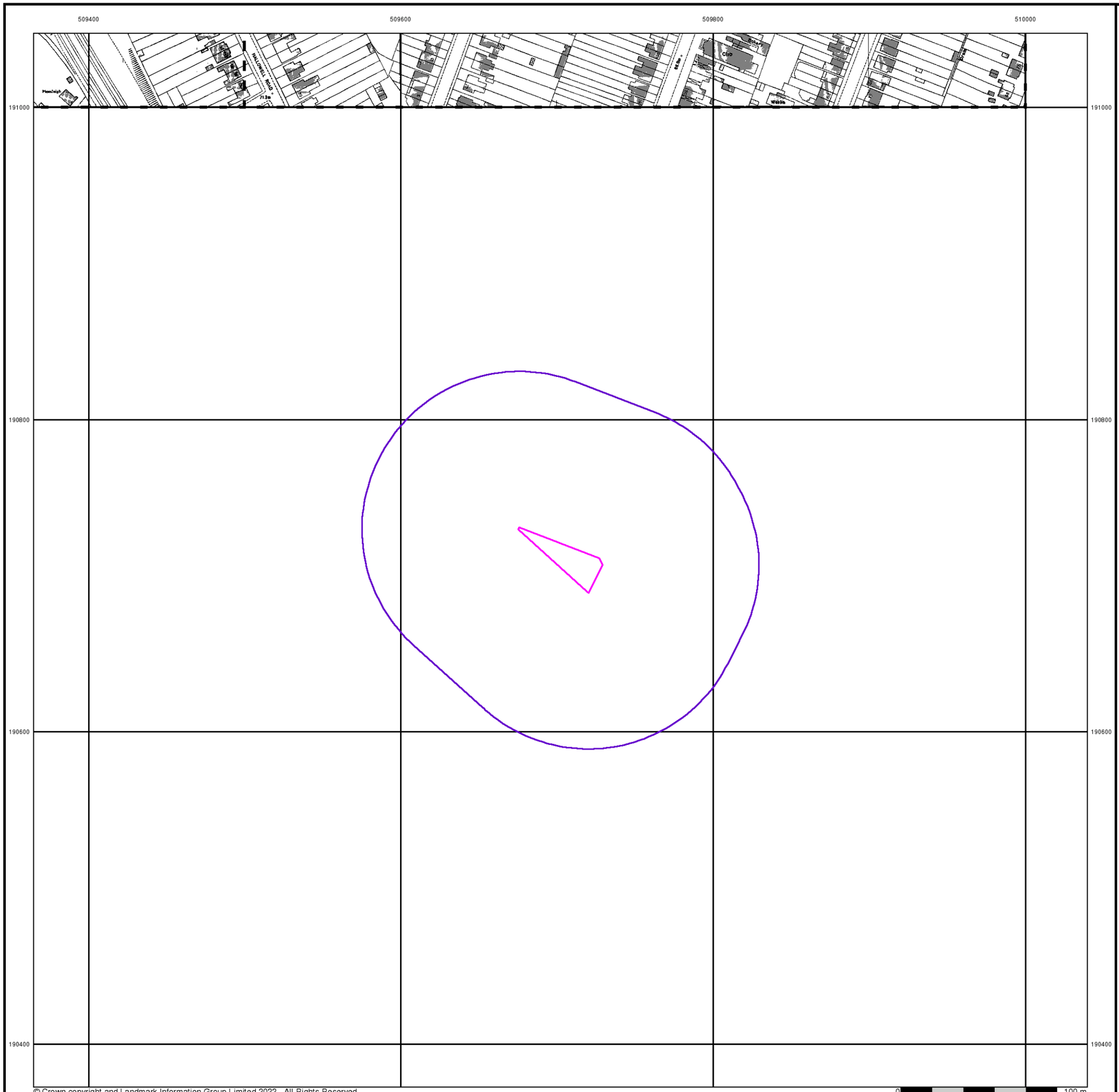
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

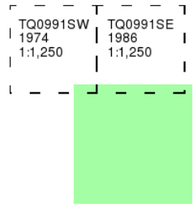
Ordnance Survey Plan

Published 1974 - 1986

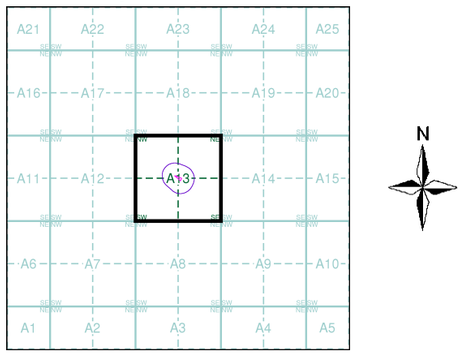
Source map scale - 1:1,250

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:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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

Envirocheck®

LANDMARK INFORMATION GROUP®

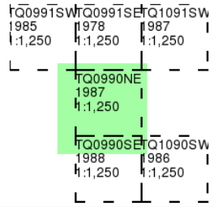
Additional SIMs

Published 1978 - 1988

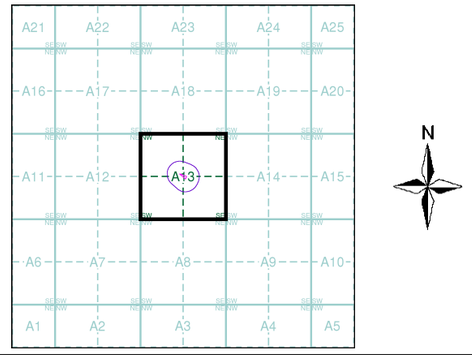
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

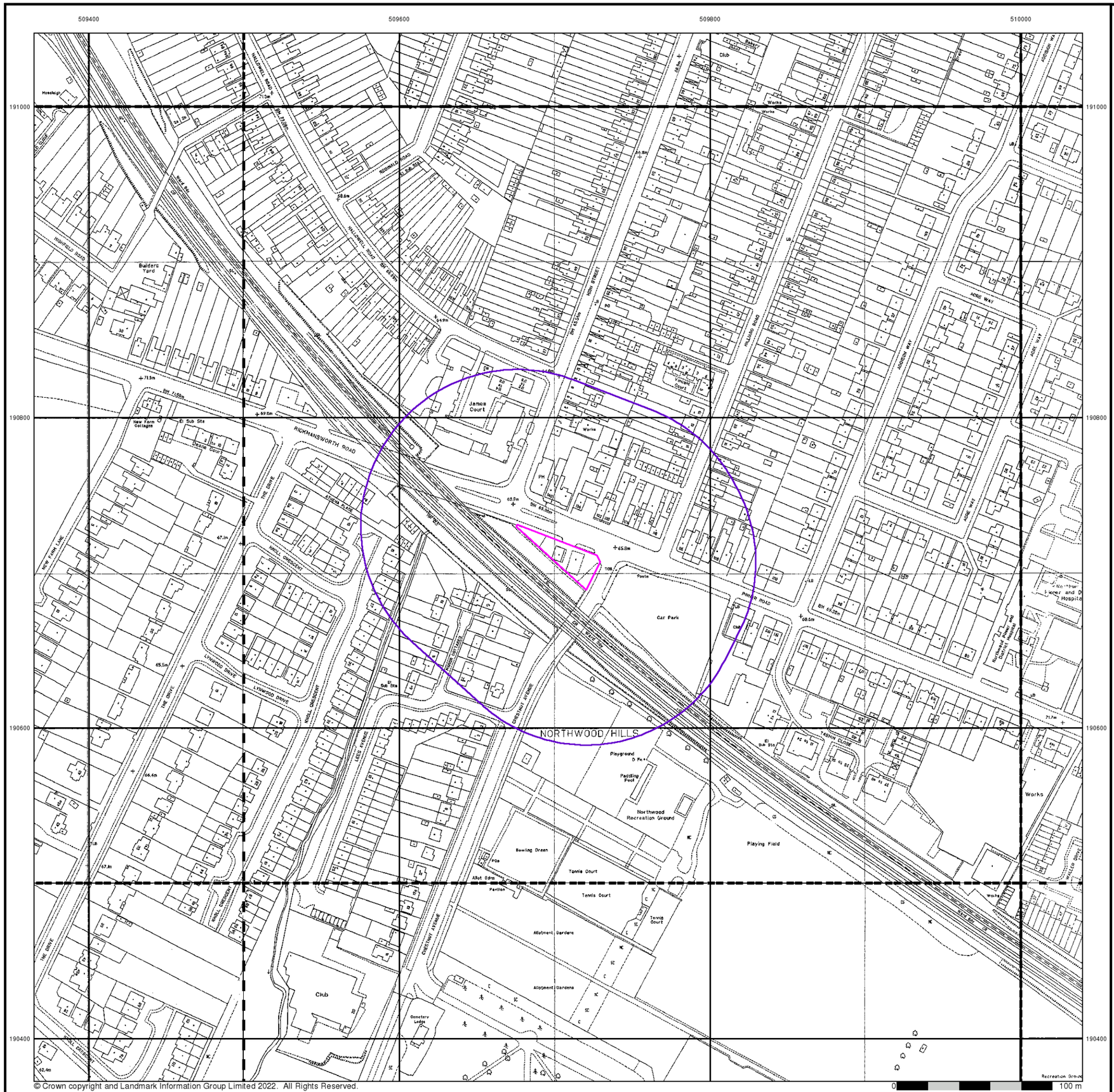
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

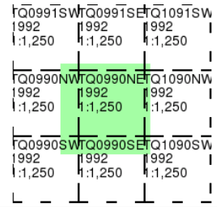
Large-Scale National Grid Data

Published 1992

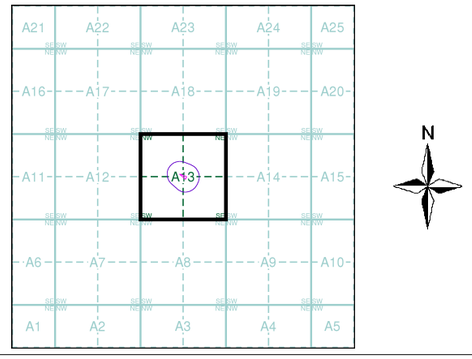
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

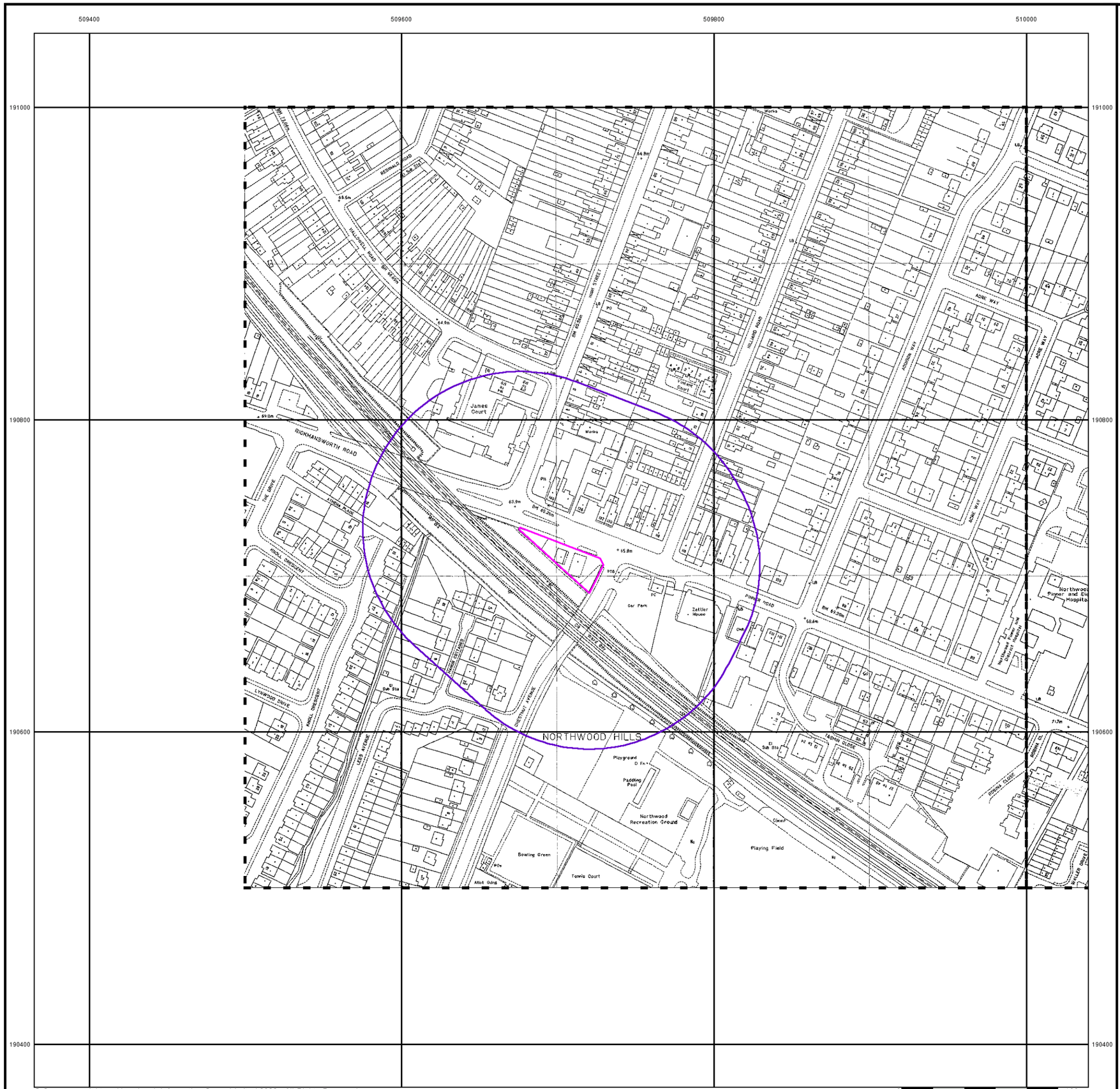
Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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



Envirocheck®

LANDMARK INFORMATION GROUP®

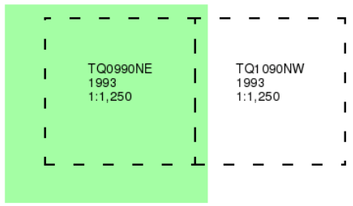
Large-Scale National Grid Data

Published 1993

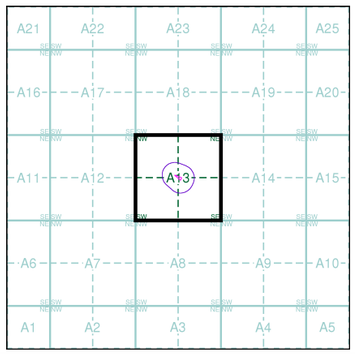
Source map scale - 1:1,250

'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)



Historical Map - Segment A13



Order Details

Order Number:	292864116_1_1
Customer Ref:	IN22732
National Grid Reference:	509700, 190710
Slice:	A
Site Area (Ha):	0.08
Search Buffer (m):	100

Site Details

105-107, Pinner Road, NORTHWOOD, HA6 1BP

Landmark® INFORMATION GROUP

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