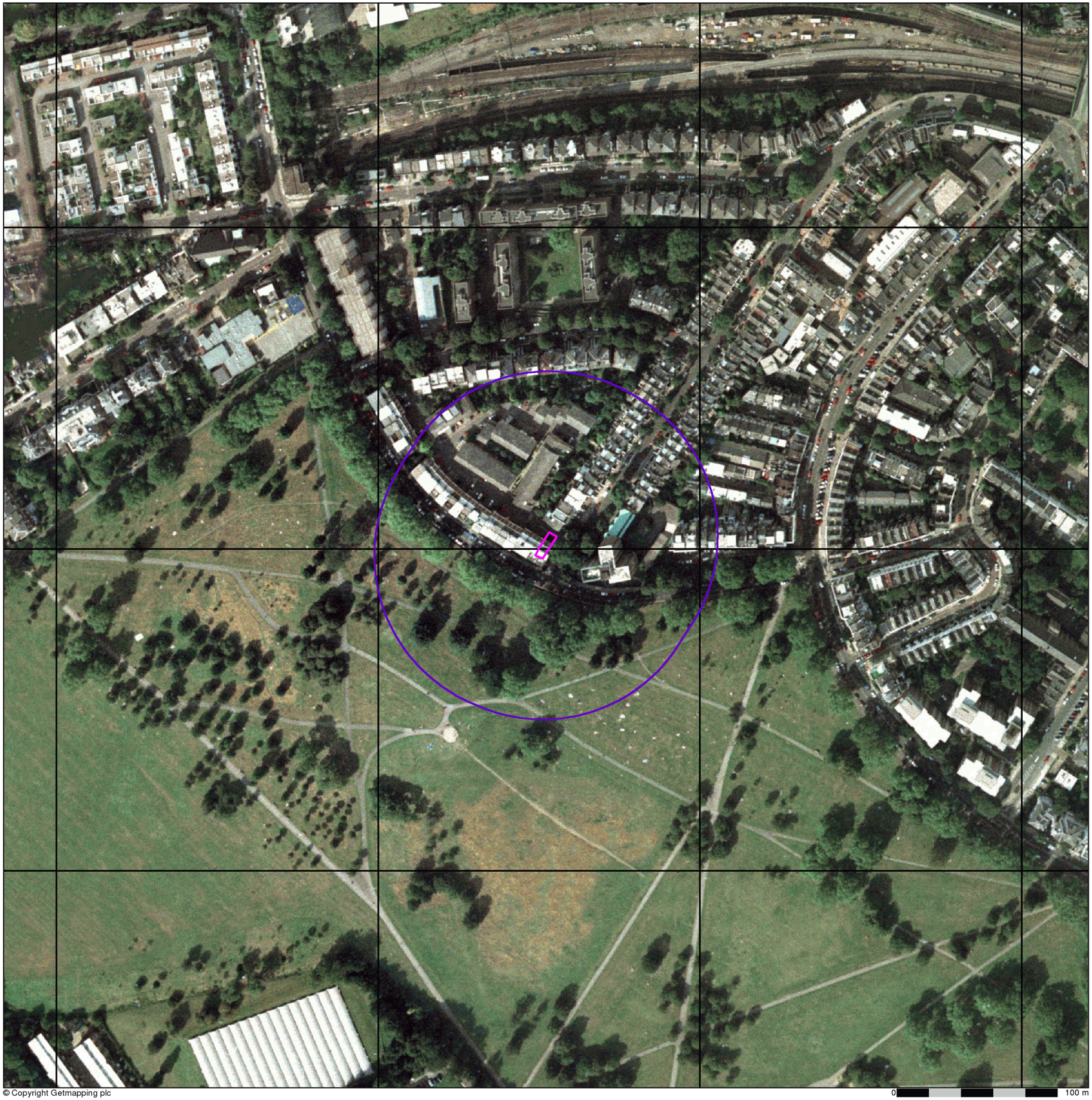
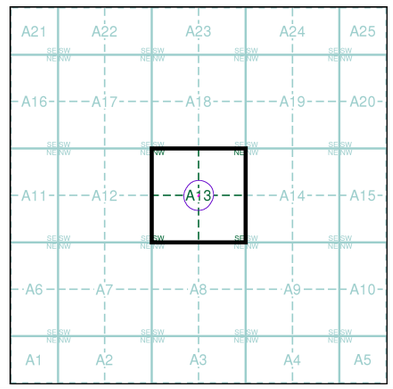


Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



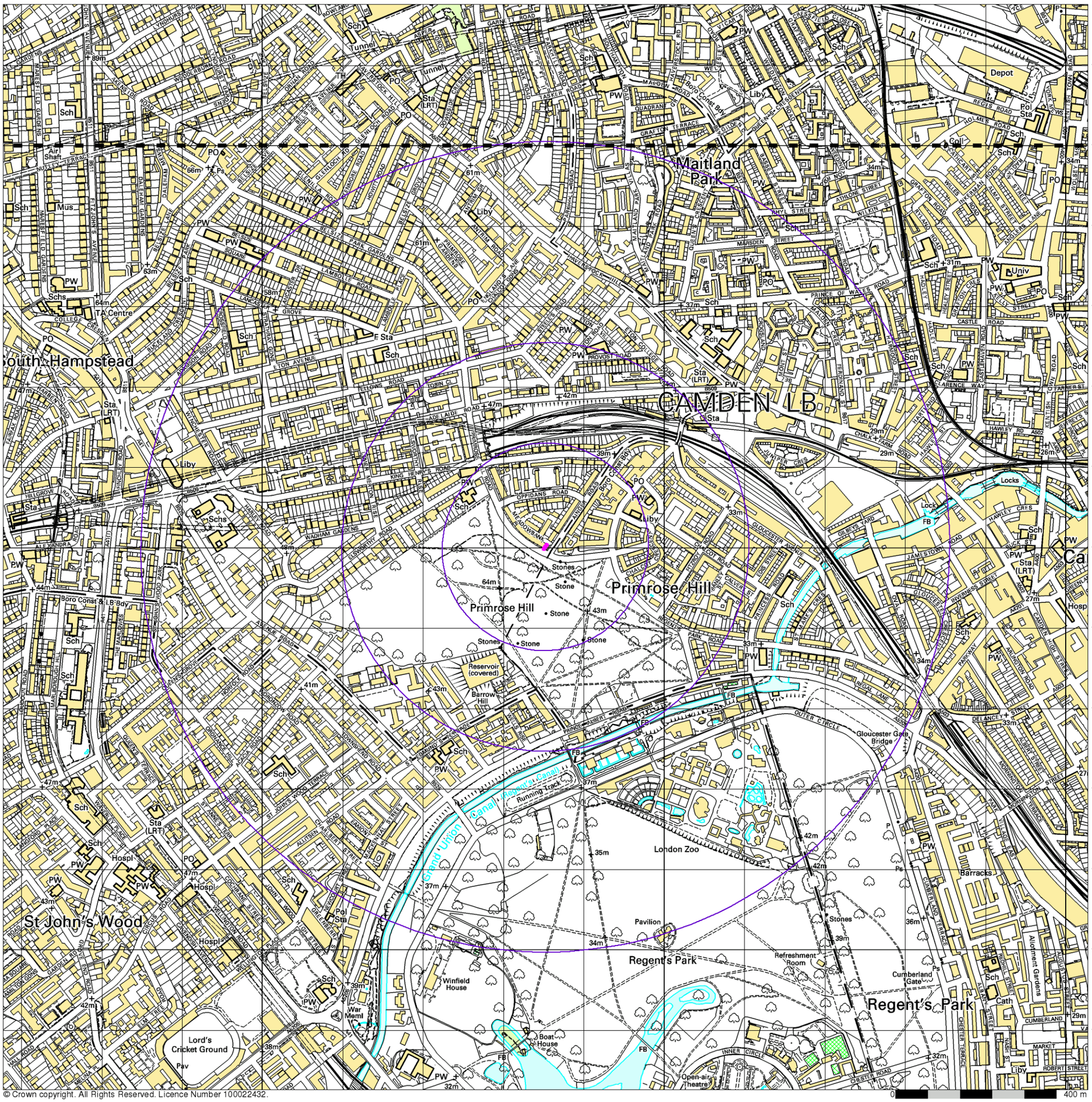
Order Details

Order Number:	204573665_1_1
Customer Ref:	J19141
National Grid Reference:	527700, 184000
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

25 Meadowbank, London, NW3 3AY

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



GEA

10k Raster Mapping

Published 1999

Source map scale - 1:10,000

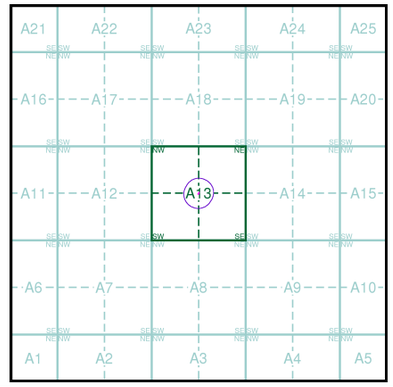
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks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

Map Name(s) and Date(s)

TQ28NE 1999 1:10,000

TQ28SE 1999 1:10,000

Historical Map - Slice A



Order Details

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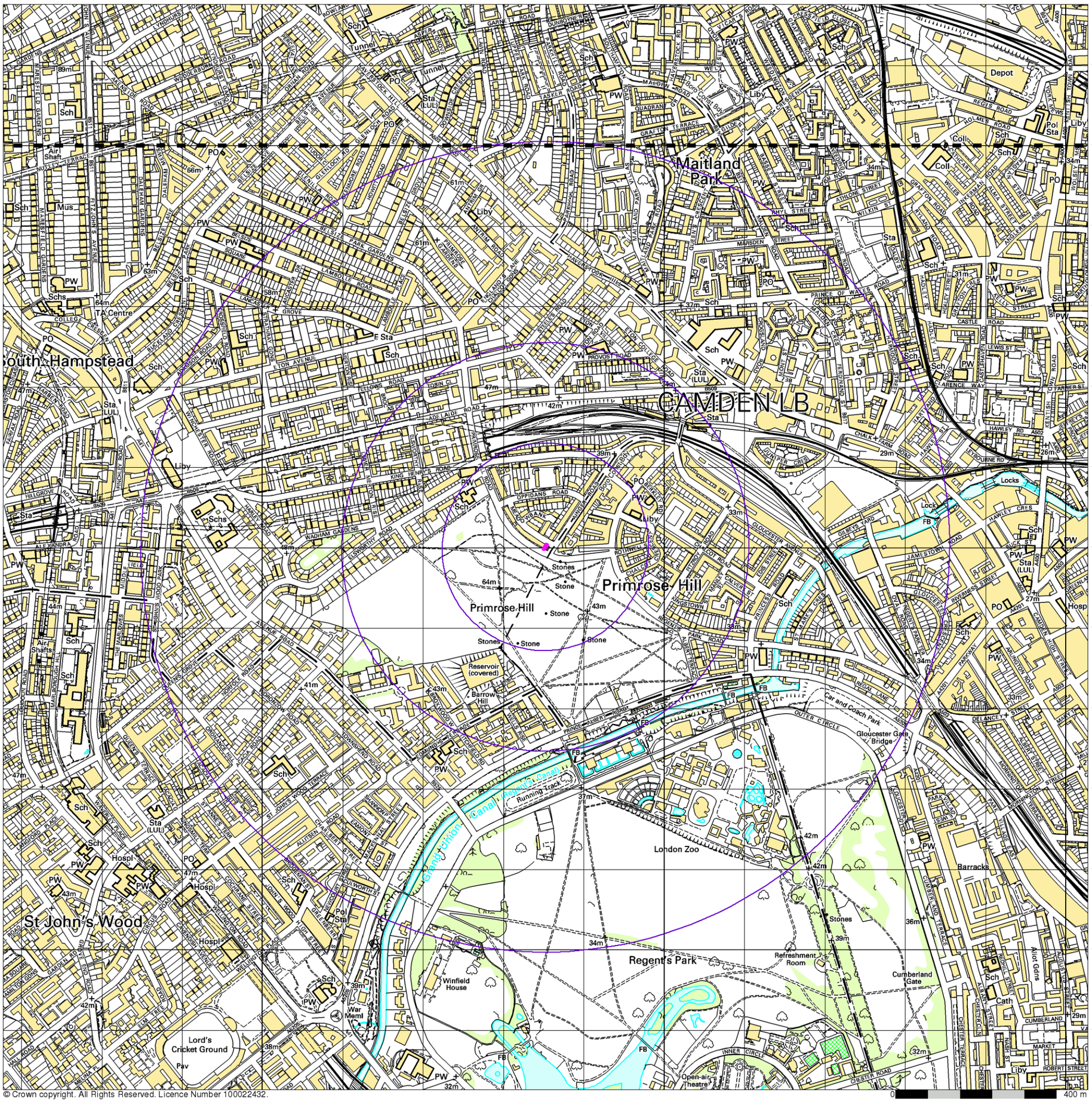


GEA

10k Raster Mapping

Published 2006

Source map scale - 1:10,000

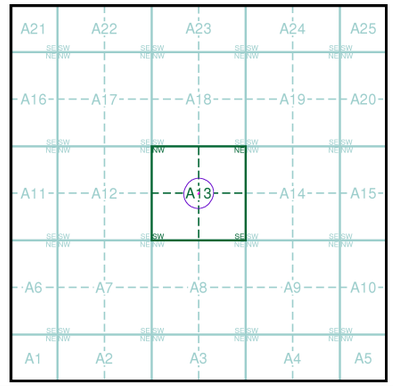
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks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

Map Name(s) and Date(s)

TQ28NE
2006
1:10,000

TQ28SE
2006
1:10,000

Historical Map - Slice A



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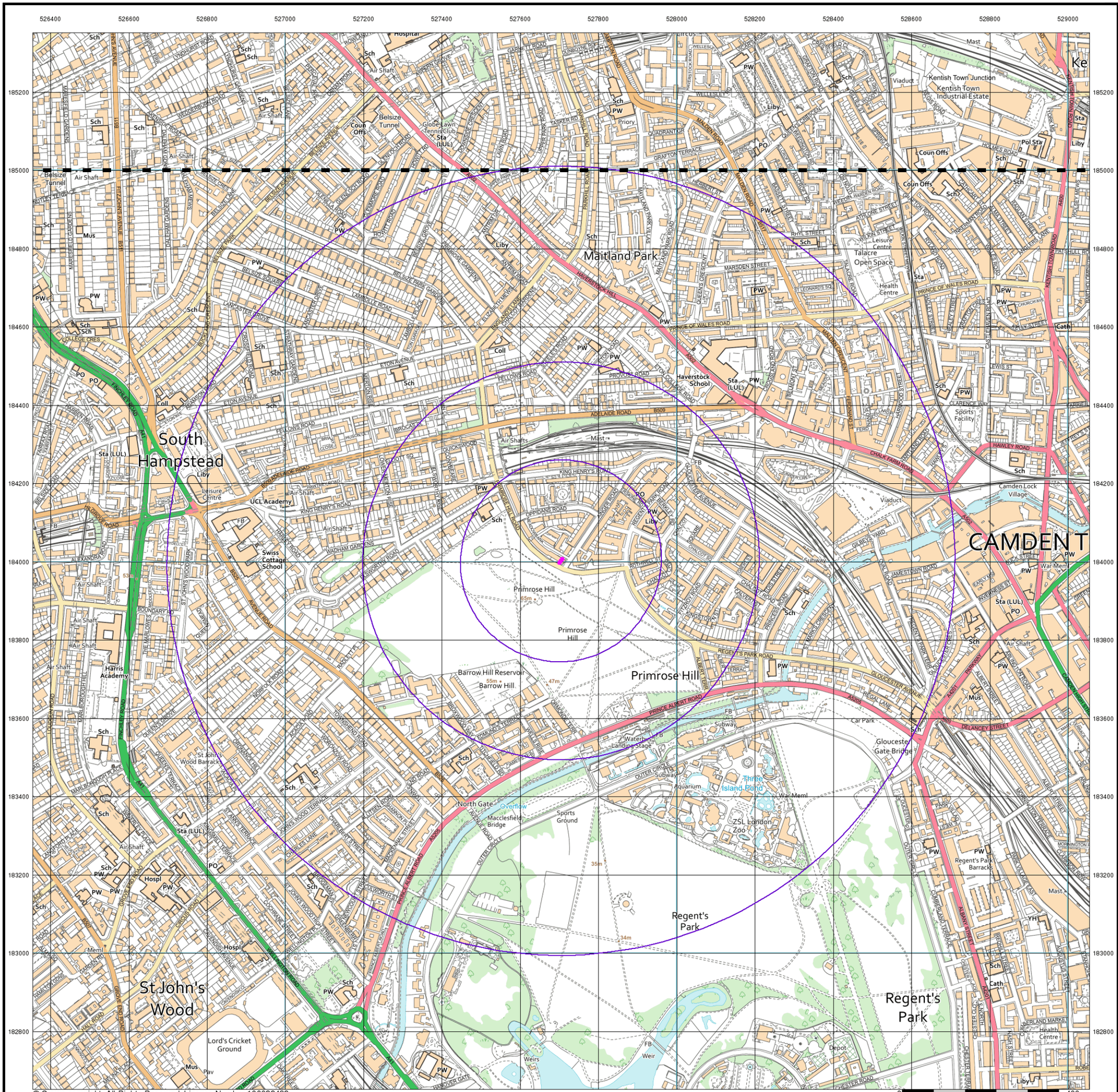


GEA

VectorMap Local

Published 2019

Source map scale - 1:10,000

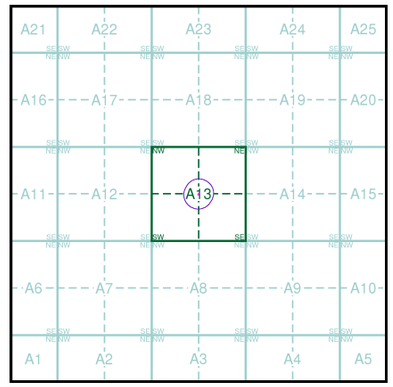
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap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

Map Name(s) and Date(s)

TQ28NE 2019 Variable

TQ28SE 2019 Variable

Historical Map - Slice A



Order Details

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Classification of Consequence

Classification	Definition	Examples
Severe	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings / property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within Draft Circular on Contaminated Land, DETR, 2000).	Concentrations of a contaminant from site exceed the generic, or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the Draft Circular of Contaminated Land, DETR, 2000). Damage to sensitive buildings / structures / services or the environment.	Pollution of non-classified groundwater Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

Classification of Probability

Classification	Probability
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

From Rudland, DJ, Lancefield, RM and Mayell, PN (2001) *Contaminated land risk assessment. A guide to good practice.* CIRIA Pub C552

Risk Assessment Matrix

		Consequence			
		Severe	***Medium***	***Mild***	***Minor***
Probability	***High likelihood***	**Very high risk**	**High risk**	**Moderate risk**	Moderate / low risk
	Likely	**High risk**	**Moderate risk**	Moderate / low risk	Low risk
	Low likelihood	**Moderate risk**	Moderate / low risk	Low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	Very low risk	Very low risk

	Description of the assessed risks and likely action required
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

From Rudland, DJ, Lancefield, RM and Mayell, PN (2001) *Contaminated land risk assessment. A guide to good practice.* CIRIA Pub C552

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Express Preliminary UXO Risk Assessment

Client	GEA Ltd
Project	25 Meadowbank, London
Site Address	25 Meadowbank, London, NW3 3AY
Report Reference	EP8876-00
Date	30/05/19
Originator	HAS

Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the 25 Meadowbank site. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

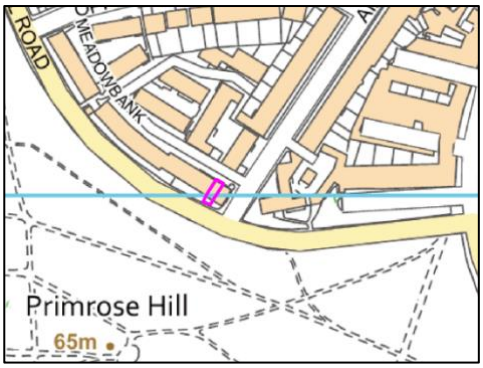
Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.

Risk Assessment Considerations	
Site location and description/current use	The site is located in Meadowbank road, Camden.  The site comprises of a multi-storey residential property, facing Primrose Hill Road to the south of the site. Ainger Road is situated east of the site, Meadowbank borders the north of the site and Primrose Hill is situated to the south of the site. The surrounding area comprises of residential properties with a railway line approximately 270m north of the site. The site is approximately centred on the OS grid reference: TQ 2771284005.
Are there any indicators of current/historical military activity on/close to the site?	At this stage, records do not indicate that the site had any former military use. The closest HAA battery was situated just south of the site in Primrose Hill. The conditions in which unexploded anti-aircraft ordnance may have fallen unrecorded within the proposed site are analogous to that of aerially delivered German bombs – see below for further information.
What was the pre- and post-WWII history of the site?	Historical OS mapping from 1915 indicates that the site area was a row of residential property facing Primrose Hill Road. Meadowbank road had not been constructed with the area comprising of gardens. The majority of the surrounding area appears to have remained relatively similar to the modern day layout with Ainger Road and Oppidans Road present. 1938 mapping does not show any significant signs of change. Post-war mapping from 1953 indicates that the site area was not significantly altered during the war. The composition of the site and its immediate surrounds is consistent when comparing pre and post-war OS map editions. The structures present after the war were removed by the 1970s and replaced with the existing row of residential properties and Meadowbrook Road to the north of the site.
Was the area subject to bombing during WWII?	According to Home Office statistics the Metropolitan Borough of Hampstead sustained a very high density bombing campaign during WWII, with an average of 166 items recorded per 1,000 acres. This included 311 high explosive (HE) bombs, 6 parachute mines, 21 oil bombs, 5 phosphorus bombs, 10 V-1 pilotless aircraft and 3 V-2 long range rocket bombs. London Bomb Census mapping does not record any bomb strikes directly on site, although one incident was recorded south west of the site on the edge of Primrose Hill park and Incendiary Bombing was recorded immediately south of the site. Additionally, a V-1 strike was recorded north of the site near Oppidans Road.
Is there any evidence of bomb damage on/close to the site?	A comparison of pre and post-WWII OS mapping does not show any obvious signs of potential bomb damage, such as structures that have been cleared or buildings labelled as 'ruins'. The London County Council (LCC) bomb damage map does not indicate that any of the structures within the site boundary were damaged. There has been damage

	recorded to the east of the site, on the eastern side of Ainger Road, including *blast damage* and *seriously damaged*. Imagery available online from 1946 indicates that the site did not sustain severe damage during the war as the structures on site do not appear to have been significantly altered or show signs of damage.
To what degree would the site have been subject to access?	It is anticipated that access to the site would have remained frequent throughout the war due to the residential nature of the area. Evidence of UXO is less likely to go unnoticed and unrecorded within frequently accessed areas.
To what degree has the site been developed post-WWII?	The site has been significantly redeveloped post-war. The structures present after the war were removed by the 1970s and replaced with the existing row of residential properties and Meadowbrook Road to the north of the site.
What is the nature and extent of the intrusive works proposed?	The site works comprise of shallow trial pits, boreholes up to 12m and in situ standard penetration tests up to 12m.

Summary and Conclusions

During WWII, the site was situated within the Metropolitan Borough of Hampstead, which sustained a very high density of bombing according to Home Office statistics, with an average of 166 items recorded per 1,000 acres. Consulted London Bomb Census mapping records no incidents within or immediately adjacent to the site boundary

The site does not appear to have sustained damage during the war as the LCC damage map does not highlight any buildings as damaged and OS mapping does not show any obvious signs of potential damage. Available imagery online also indicates that the site did not show any obvious signs of bomb damage.

The site is anticipated to have remained accessible throughout the war, due to the residential nature of the site meaning evidence of UXO is anticipated to have been less likely to go undiscovered.

Recommendations

No evidence could be found during preliminary research to elevate the risk from UXO at the proposed site beyond the background risk of encountering UXO in this area of the UK. While 1st Line Defence cannot entirely discount the possibility that items of UXO could have fallen on the site undetected due to the lack of access to detailed bombing records, it is not considered likely that any further research undertaken in the form of a Detailed Risk Assessment would significantly alter the findings of this preliminary report. Therefore, it is recommended that **no further action** be taken for this site.

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

Although the risk from unexploded ordnance on this site has been assessed as low/minimal, this does not mean there is 'no' risk of encountering UXO. This preliminary report has been undertaken with due diligence, and all reasonable care has been taken to access and analyse relevant historical information. By necessity, when dealing historical evidence, and when making assessments of UXO risk, various assumptions have to be made which we have discussed and justified within this report. Our reports take a common-sense and practical approach to the assessment of UXO risk, and we strive to be reasonable and pragmatic in our conclusions. As referenced, it would be possible to undertake further research into this site, but based on the evidence to hand, this is not deemed strictly necessary, and no reasonably justifiable requirement for proactive on-site mitigation has been identified. It should however be stressed that if any suspect items are encountered during the proposed works, 1st Line Defence should be contacted for advice/assistance, and to re-assess the risk as necessary. Furthermore, we would recommend that ground personnel are always made aware of the potential for encountering UXO, what to look out for and what to do in the unlikely event that a suspect item is encountered, and that a UXO Risk Management Plan is put together for the proposed works. We would be happy to provide a template and guidance for this – contact us on 01992 245020. Should the scope of works change or additional works be proposed, 1st Line Defence should be contacted to re-evaluate the risk.

Geotechnical & Environmental Associates (GEA) is an engineer-led and client-focused independent specialist providing a complete range of geotechnical and contaminated land investigation, analytical and consultancy services to the property and construction industries.

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