

Pell Frischmann

**Twickenham Station
Yard Block D**

November 2019

Phase 1 Land Contamination
Desk Study

102135-PF-ZZ-XX-RP-C-0001

Submitted by Pell Frischmann

excellence through innovation

Revision Record

P:\1021--\102135 - Twickenham Station Block D\6 Documents\6.9 Geotechnical Engineer\6.9.1 Reports\01 Desk Study\102135-PF-ZZ-XX-RP-C-0001.docx

Rev	Description	Date	Originator	Checker	Approver
A	First issue	08-Nov-2019	A Boucher	S Wooster	J Chapon

This report is to be regarded as confidential to our Client and is intended for their use only and may not be assigned except in accordance with the contract. Consequently, and in accordance with current practice, any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded, except to the extent that the report has been assigned in accordance with the contract. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

Prepared for:

Solum Regeneration
Tempsford Hall
Sandy
Bedfordshire
SG19 2BD

Prepared by:

Pell Frischmann
4-5 Manchester Square
London
W1U 3PD



P e l l F r i s c h m a n n

Contents

Executive Summary

1	Introduction	1
1.1	Commission	1
1.2	Objectives	1
1.3	Proposed Development	1
2	The Site	3
2.1	Site Location	3
2.2	Site Description	3
2.3	Walkover Survey	3
2.4	Pre-Existing Reports	4
3	Environmental Data Search	5
3.1	Sources	5
3.2	Environmental Database	5
3.3	Site History	6
3.4	Published Geology	8
3.4.1	Geological Records	9
3.5	Hydrogeology	9
3.6	Hydrology	10
3.7	Radon	10
3.8	Environmental Data Searches	11
3.8.1	On-Site	11
3.8.2	Off-Site	11
3.9	Unexploded Ordnance (UXO)	11
3.10	Environmentally Sensitive Designations	12
3.11	Summary of Previous Geoenvironmental Reports	12
4	Preliminary Land Contamination Risk Assessment	15
4.1	Introduction	15
4.2	Potential Contaminant Sources	15
4.3	Potential Receptors	16
4.4	CSM and Risk Assessment	16
4.5	Potential CLs & Recommendations for Further Work	18
5	Geotechnical Considerations	19
5.1	Hazard Identification	19
5.2	Preliminary Geotechnical Design Considerations	20
6	Conclusions and Recommendations	21
6.1	Conclusions	21
6.1.1	Geoenvironmental	21
6.1.2	Geotechnical	21
6.2	Recommendations	21
7	Uncertainties and Limitations	22

Figures

Figure 1: Proposed Development (Source Wimshurst Pelleriti, architect)	1
Figure 2: Site Location Plan	3
Figure 3: Walkover Survey Photographs	4
Figure 4: Published Geology	8
Figure 5: BGS Borehole Records	8
Figure 6: Groundwater Flooding Risk (Envirocheck)	10
Figure 7: Surface Water Flood Extents	10
Figure 8: Historic Bomb Records	12
Figure 9: Ground Investigation (2015)	13

Tables

Table 1: Pre-existing Reports.....	4
Table 2: Landmark Reports.....	5
Table 3: Site History	6
Table 4: Natural Ground Stability Hazards	9
Table 5: Hydrogeological Classifications and Characteristics of Strata	9
Table 6: Preliminary Waste Classification Acceptance Results (2015)	14
Table 7: Contaminant-Pathway-Receptor Definitions	15
Table 8: Potentially Contaminative Land-Uses	15
Table 9: Risk Matrix Key	16
Table 10: Conceptual Site Model.....	17

Appendices

- Appendix A - Historic Maps
- Appendix B - Envirocheck Datasheets and Plans
- Appendix C - UXB Map from Zetica

Executive Summary

Site Name	Twickenham Station Yard (Solum Site)
Location	Station Yard, Twickenham, London, TW1 4LJ (NGR 516054, 173616)
Development Proposals	New 6 story residential buildings with surrounding pedestrian access, disabled parking and soft landscaping.
Land Use History	The Site formed part of the open area in front of the former Twickenham railway station from some time prior to 1880 until the relocation of the station and construction of the on-site car park in the late 1950s
Published Geology	Superficial deposits: Kempton Park Gravel Solid (bedrock) Geology: London Clay
Hydrogeology & Hydrology	Kempton Park Gravel: Principal Aquifer London Clay: non-productive
Previous Ground Investigations	A 2015 ground investigation, comprised of 3 shallow trial pits encountered a sequence of bituminous hardstanding and sub-base over Made Ground, underlain by Kempton Park Gravel. Waste Classification Assessment of the geochemical analysis indicated the presence of hazardous and non-hazardous samples. Hazardous soil sample classifications were associated with elevated concentrations of TPH and/or PAH. In 2015, the geochemical results were not part of a human health risk assessment. Groundwater was not encountered within the shallow trial pits.
Land Contamination Preliminary Risk Assessment Conclusions (Phase 1 PRA)	The PRA has identified 5 potential contamination linkages, 2 relate to the construction phase, 2 relate the end-users of the proposed development and the remaining CL relates to the underlying aquifer that could be impacted during and/or after construction. It is considered highly unlikely that the Site would be classified as Contaminated Land under Part 2A of the Environmental Protection Act (EPA) 1990. No high-risk potential Contaminant Linkages (CLs) have been identified to date. 3 out of the 5 potential CLs have been assigned a 'moderate' initial risk rating, associated with the following: <ul style="list-style-type: none"> ➤ Moderate risk of contact with existing Made Ground contamination by site workers in the construction phase of the development, ➤ Moderate to low risk of contact with existing Made Ground contamination by end users, and ➤ Moderate risk of contamination impacting of the Principal Aquifer within the superficial deposits.
Geotechnical Considerations	The ground conditions profile below the site is relatively well-defined by archive boreholes in the area and geological mapping, so it is apparent that the CFA bored piles which are proposed to support the building will be a suitable means of foundation support. Site-specific ground investigation is required to characterise the strength profile within the underlying London Clay to allow cost-efficient pile design. The ground investigation should also include sampling and laboratory testing to characterise the engineering properties of the near surface soils and to quantify the potential aggressivity to buried concrete.
Recommendations for further work	Phase 2 Site Investigation and risk assessment to further evaluate the potential risks, to enable the CSM to be updated and to determine whether mitigation/remedial measures will be required. Recommended site investigation activities including: <ul style="list-style-type: none"> ➤ Two or three deep cable percussive boreholes to inform pile design. ➤ Shallow dynamic sample holes to characterise near surface ground conditions. ➤ Installation of groundwater monitoring wells and subsequent monitoring and sampling for generic groundwater risk assessment. ➤ Laboratory analysis of soil samples for generic human health risk assessment and additional pre-construction Waste Classification Assessment (WCA).

1 Introduction

1.1 Commission

Pell Frischmann (PF) has been commissioned by Solum Regeneration (Twickenham) LLP to prepare a Phase 1 land contamination desk study for the proposed development of the 'Twickenham Station Yard' site, in Twickenham, southwest London.

1.2 Objectives

The objective of this Phase 1 desk study is to review readily available desk-based geoenvironmental information and to carry out a walkover survey to facilitate an initial assessment of:

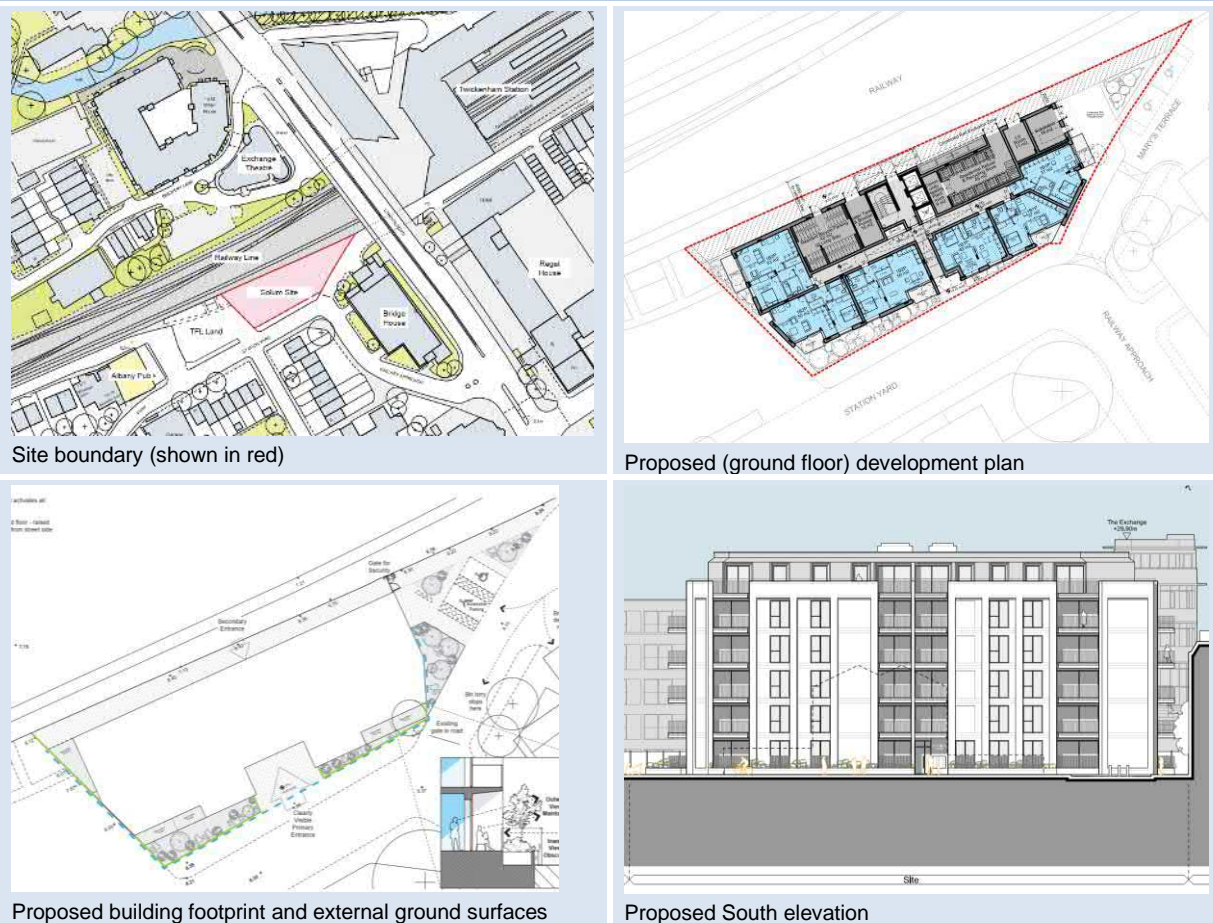
- The likely ground and geoenvironmental conditions at the Site, and
- Potential land contamination risks associated with the Site.

The overall aim is to identify potential geoenvironmental constraints which may impact upon and/or restrict the proposed redevelopment of the Site.

1.3 Proposed Development

At the time of writing it is proposed that a new 6 storey residential building will be developed on the Site. Proposed site plans and an example elevation are shown in **Figure 1**.

Figure 1: Proposed Development (Source Wimshurst Pelleriti, architect)



Built development of the Site is heavily constrained by the alignment of two existing main sewers which cross the existing car park area (refer to **Section 2.2**). Rather than diverting them, it is proposed that the new building will be constructed over them, allowing for suitable subsurface easement.

The presence of the sewers prevents any basement from being incorporated into the building. It also makes any consideration of shallow founding or ground improvement options for support of the building unfavourable. A pile foundation solution is therefore proposed; bored piles can be inserted with minimum ground disturbance at suitable offset from the sewers, with the building ground floor slab then designed to span between the pile caps and across the sewers. Proposed lift pits and a SuDS attenuation tank can also be accommodated within the pile foundation layout.

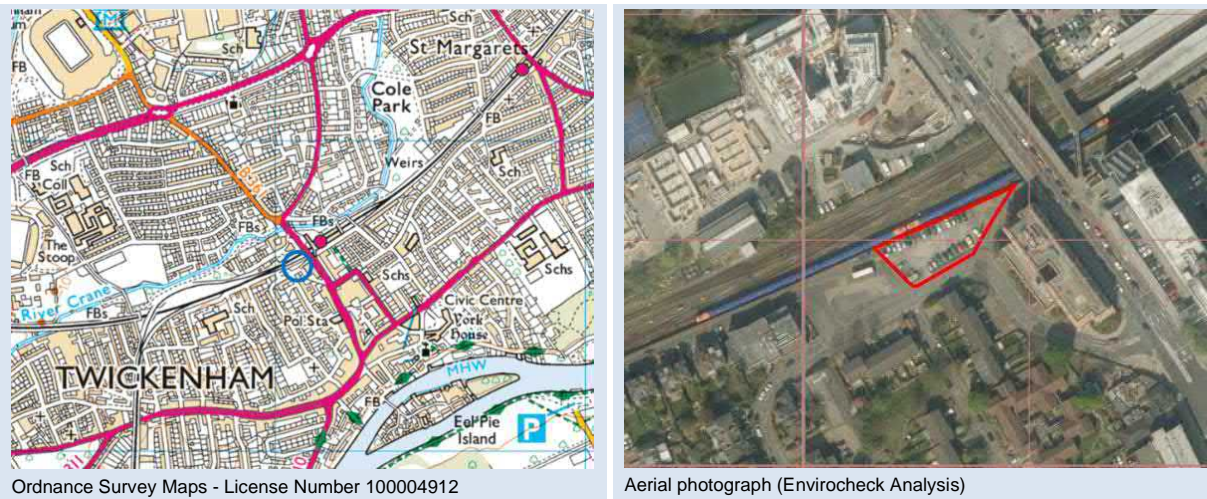
The land contamination and geotechnical risk/hazard assessments within this report account for both the pile foundation approach set out above and the shallow groundworks associated with the proposed lift pits and the SuDS attenuation tank. Shallow excavations will also be required within the Site to carry out service diversions and to install the necessary service connections for the building. Further shallow excavation will be required to install the surfacing materials and planting soils in the external areas, including within a 'rail exclusion zone' on the north side of the proposed building. Over and above the bores for the pile foundations, no other deep excavations are proposed.

2 The Site

2.1 Site Location

The Site is located approximately (approx.) 75m southwest of Twickenham Station in southwest London. The approximate (approx.) centre of the Site is located at National Grid Reference (NGR) 516054, 173616 and the address for the Site is Station Yard, Twickenham, London, TW1 4LJ. The Site location is shown in **Figure 2**.

Figure 2: Site Location Plan



2.2 Site Description

The Site is currently used as a car park (with an asphalt surface) and

- occupies an area of approx. 950m²,
- is roughly triangular,
- measures 65m by 20m (approx.) at its maximum extents,
- is relatively flat and lies at an elevation of approximately 8.2mAOD.

The Site is bound by railway lines to the north, 'Mary's Terrace' and 'Station Yard' roads to the east and south respectively and an open asphalt and concrete surfaced area to the west. Immediately east of the Site, 'Mary's Terrace' passes under London Road (A310), which bridges the railway lines to the north.

The area to the west is owned by TFL; this 'TFL Land' is currently used as event day and emergency parking for buses and a turning circle¹.

2.3 Walkover Survey

A walkover survey of the Site was carried out by a structural engineer from PF on 19 March 2019. The aim of the survey was to gain a general impression of the Site. The photographs from the walkover have been reviewed by a geoenvironmental engineer to gain a general impression of the surface conditions at the Site and to look for features of geoenvironmental significance, including potential contaminative land uses. A selection of the photographs taken during the walkover are included as **Figure 3**.

¹ Station Yard, Pre-App 2 Document, Wimshurst Pelleriti, March 2019.

Figure 3: Walkover Survey Photographs



The Site, facing east.



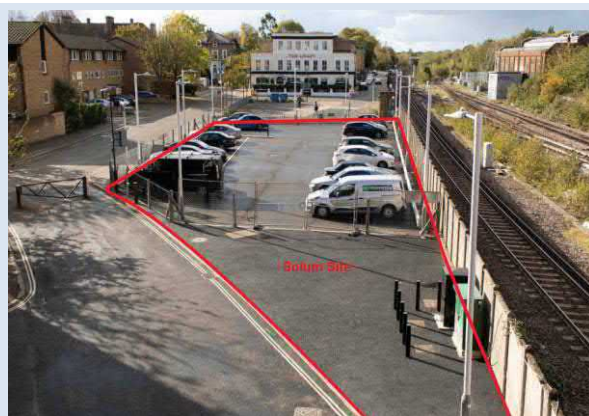
The Site facing southwest. The asphalt surface appears to be in good condition.



The northeast corner of the site was fenced off and appeared to be in use as a small site compound.



View of the 'TFL Land' to the west of the Site.



(left) View of the Site from London Road bridge looking southwest and showing the railway to the north (Wimshurst Pelleriti, March 2019)

2.4 Pre-Existing Reports

Table 1: Pre-existing Reports below summarises the pre-existing reports which have been made available and reviewed as part of this desk-based review.

Table 1: Pre-existing Reports

Report Title & Reference	Source	Date
Factual Report of Ground Investigation ref. 28006-02(00)	RSK Environment Ltd (RSK)	Dec 2015
Twickenham Station Car Park, Preliminary Waste Classification Assessment. ref. WIE11251-101-r-3-1-2-BG	Waterman Infrastructure & Environment Limited (Waterman)	Dec 2015

3 Environmental Data Search

3.1 Sources

The following 'desk-based' data sources have selectively been reviewed with respect to the geoenvironmental status and setting of the Site and its surroundings:

- Historic Ordnance Survey maps,
- Historic and current aerial photographs (Google Earth and Envirocheck),
- British Geological Survey (BGS) maps and records,
- Environment Agency (EA) data,
- EA River Basin Management Plans (RBMPs),
- Commission specific environmental database search results (Envirocheck), and
- Relevant internet-based data sources.

Relevant information is presented in the following sections and sub-sections of this report.

3.2 Environmental Database

As part of the data search an Envirocheck (Site Sensitivity) Report, Geology Datasheet and a set of historic maps have been procured from Landmark Information Group (Landmark). Copies of the Landmark products (in the form of datasheets and maps) are included in **Appendix A** and **Appendix B**. Selected map extracts and relevant datasheet information summaries are included within the report text.

The key information topics included within the Envirocheck Report and Geology Datasheet are summarised in **Table 2**.

Envirocheck Report incl. Site Sensitivity Maps	Geology Datasheet
<ul style="list-style-type: none">• Environment Agency records,• Hydrology and hydrogeology,• Waste,• Hazardous substances,• Geological,• Industrial land uses, and• Sensitive land uses.	<ul style="list-style-type: none">• Artificial ground and landslip map,• Superficial geology map,• Bedrock and faults map, and• Combined geology map.

Pertinent information from the Landmark products has been considered in conjunction with the findings of the other desk study data sources and the collated findings are presented in the following sub-sections of this report chapter.

Where Landmark information is referenced, the distances quoted from the identified features are to the nearest point of the subject site boundary, unless stated otherwise. The Envirocheck Analysis tool has also been used to review, combine and extract relevant information from the Landmark products.

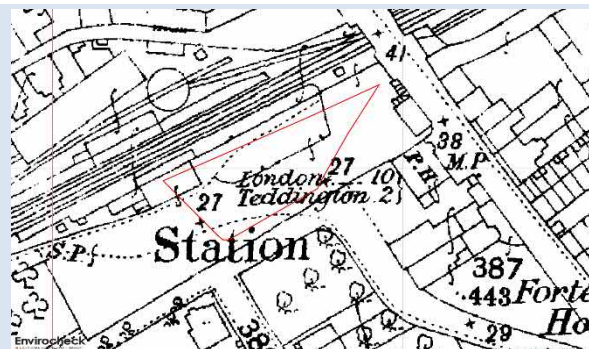
3.3 Site History

In order to provide an overview of the Site's history and to help identify potentially contaminative historic land uses both on-site and in the immediately surrounding area, the following historic records have been reviewed:

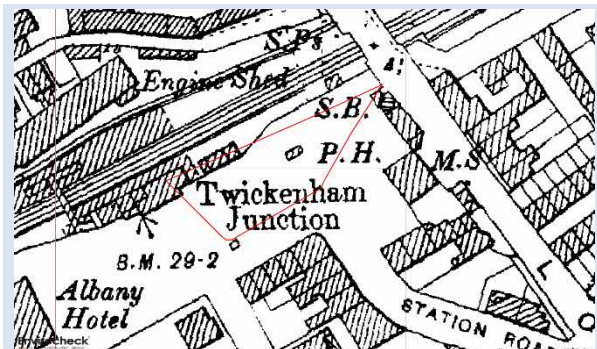
- Historic County Series and Ordnance Survey (OS) map editions (source: Landmark); and
- Historic and recent aerial photographs (source: Google Earth, Britain from Above & Landmark).

A summary of the Site's history is presented in **Table 3** including a small selection of map extracts. In some cases, the text in the table describes features from more than one map edition; in that case the time range is shown, and the year of the map extract included above the text is included in blue.

Table 3: Site History



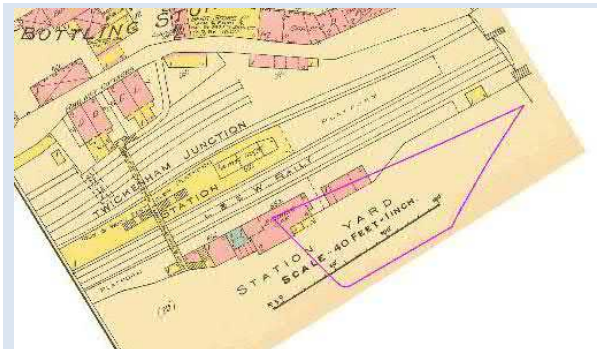
1880: the map shows that the Site area is predominantly occupied by an open area in-front of "London Teddington" station. The edge of the station buildings and fencing are shown within the northwest and northern edges of the Site. Off-site: the surrounding area is dominated by residential streets, houses and gardens to the south. London Road is shown to the east, the railway lines and railway buildings are shown to the north.



1896-1898: additional station buildings are shown within the northwest edge of the Site and the station is now labelled "Twickenham Junction". The small building just east of the centre of the Site identifies as a "Shelter" in the 1896 map. Off-site: residential development has expanded to the south of the Site and Albany Hotel is shown to the southwest. Station Road is now labelled to the southeast. A brewery is shown to the north of the railway buildings (north of the Site).



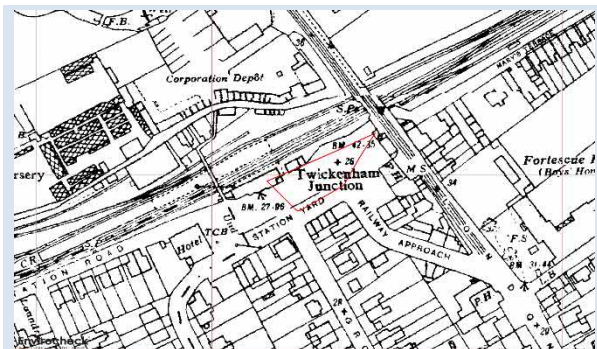
Twickenham Station (date unknown, source bing.com)



1907: the Site is part of 'Station Yard'.

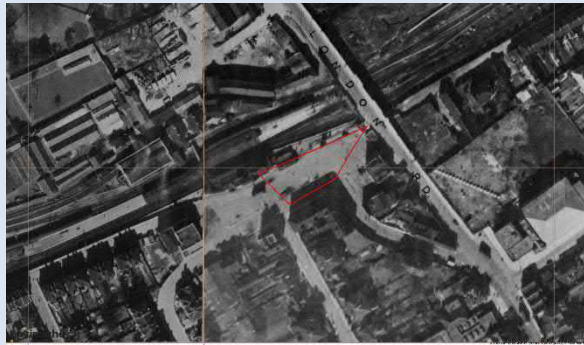


1926: An aerial photograph shows the 'open area' in front of the Station.

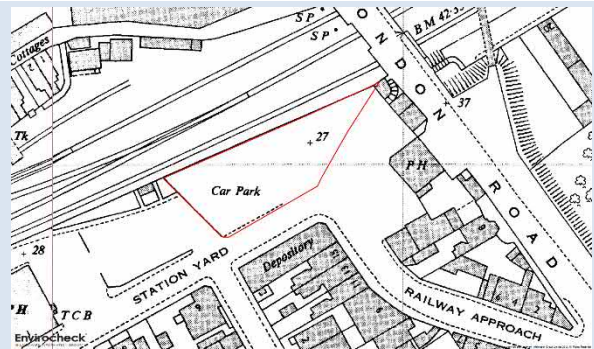


1914-1934: Off-site the former Brewery (north of the railway) is labelled "Corporation Depot" (1934). Off-site: by 1914, the road south of the Site is labelled Station Yard, Station Road is labelled Railway Approach. 165m to the southwest a potential industrial building is shown.

Table 3: Site History



1946: the 1946 aerial photograph also shows the 'open area' in front of the Station.



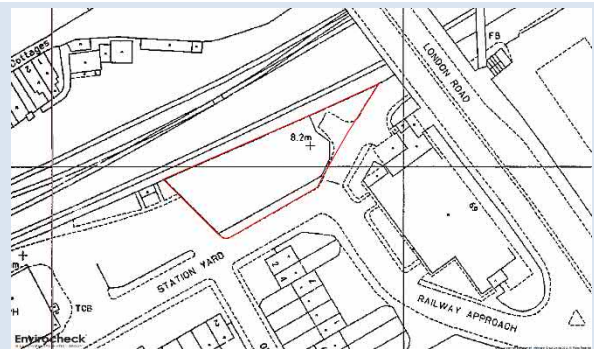
1959: The entire site area is now shown as a 'Car Park' that is free from buildings.

Off-site: the station has been relocated to the northeast side of London Road and a small building is now shown, west of the Site. The area immediately south of Station Yard (previously housing) is shown as a single larger building and labelled 'Depository'. A small unspecified 'works' is shown 42m to the south.



1960-1980: from 1970 onwards, the site is no longer labelled as a Car Park. The eastern part of the site is reconfigured slightly, sometime between the 1967 and 1980 maps.

Off-site: by 1960 Corporation Depot is no-longer labelled (to the north) and a garage is shown 64m southwest. By 1980 the former Corporation Depot is now a 'sorting office' (north), and the former depository and unspecified 'works' areas (south) are occupied by residential properties. The area to the southeast of the Site between Mary's Terrace and Railway Approach appears to have been cleared.



1988-1991: no notable changes on-site.

Off-site: the site to the southeast has been redeveloped sometime between the 1980 and 1988 map editions.



2019: the current aerial photograph shows the site is in-use as a car park.

Off-site: A bus is shown within the TFL land to the west and the railway is in use to the north.



2019: current mapping also shows the site as a Car Park.

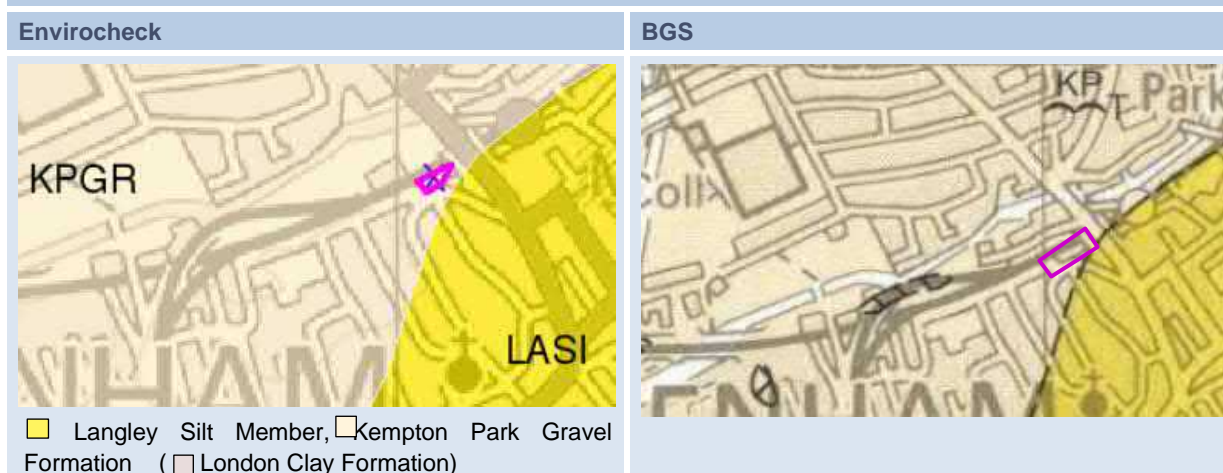
In summary, the historic maps and images indicate that the Site formed part of the open area in front of the former Twickenham railway station from some time prior to 1880 until the relocation of the station and construction of the car park in the late 1950s.²

² It is understood that the railway reached Twickenham in 1848 www.twickenham-museum.org.uk

3.4 Published Geology

The published geology of the area is shown on the geological map for South London (Sheet 270, scale 1:50,000), published by the BGS. Derivatives of the BGS mapping are included in the Geology Report (Landmark) and shown in **Figure 4**. Further geological information has been also obtained from the BGS website.

Figure 4: Published Geology

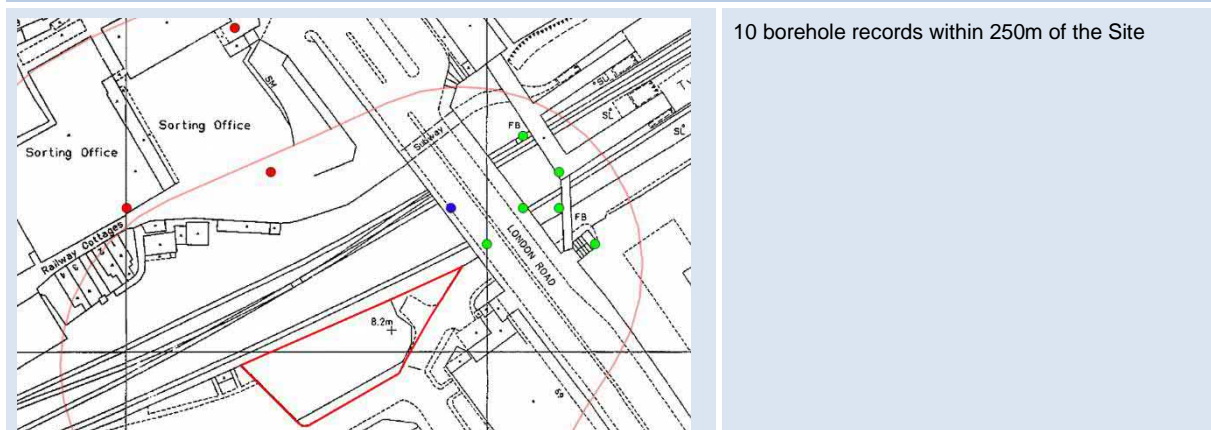


The maps indicate that the Site is underlain by superficial deposits of Kempton Park Gravel, underlain by solid ‘bedrock’ geology of London Clay. The maps also indicate that superficial deposits of Langley Silt are present immediately southeast of the Site. The BGS describes the above geological strata as follows:

- Langley Silt Member: “varies from silt to clay, commonly yellow-brown”.
- Kempton Park Gravel Member: “sand and gravel, locally with lenses of silt, clay and peat”.
- London Clay Formation: “bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions (‘cementstone nodules’) and disseminated pyrite.”

The BGS maintains an archive of historic boreholes. The locations of the available borehole records within 250m (extracted from Envirocheck Analysis) are shown in **Figure 5**. There are records of 10 boreholes within 250m of the Site. The logs of the closest boreholes (drilled in 1959 up to 19m deep, located 10 and 24m northeast) recorded a sequence of Made Ground over ‘gravel and sand’ over ‘blue clay’. A borehole located 46m north (beyond the railway) recorded a sequence of Made Ground over drift, London Clay, Woolwich and Reading Beds, Thanet Sand and Upper Chalk (this borehole was significantly deeper, drilled to 167m below ground level, bgl).

Figure 5: BGS Borehole Records



3.4.1 Geological Records

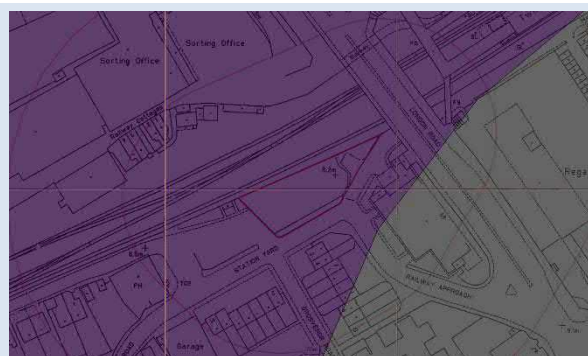
The Landmark Envirocheck Report and Geology Datasheet indicates that there are no significant natural ground stability hazards on-site, as summarised in **Table 4**.

Table 4: Natural Ground Stability Hazards	
Natural Ground Stability Hazard	Hazard rating
Shrinking or swelling clay	No-hazard to Moderate
Landslide	Very low
Running sands	Very low
Compressible deposits	Very low
Collapsible deposits	Very low
Ground Dissolution	No hazard
Non-coal mining areas	No hazard
Coal mining affected areas	'In an area that might not be affected by coal mining'

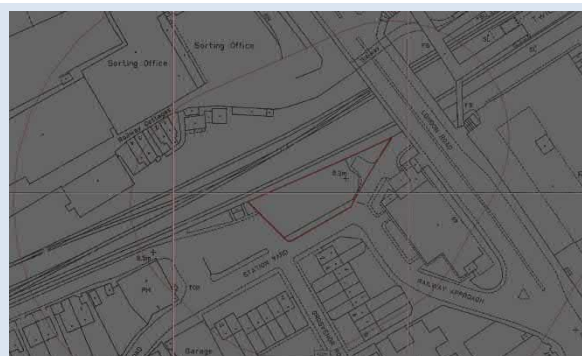
3.5 Hydrogeology

The hydrogeological classifications for the underlying superficial deposits and solid geology (bedrock), taken from the Envirocheck Report are summarised in **Table 5**.

Table 5: Hydrogeological Classifications and Characteristics of Strata		
Stratum	Aquifer Designation	Hydraulic Characteristics (EA Descriptions)
Kempton Park Gravels (Superficial)	Principal Aquifer	"Layers of rock or drift deposits that have high intergranular and/or fracture permeability – meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale."
London Clay (Bedrock)	Unproductive strata	"These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow."



Kempton Park Gravel (Principal, purple), Langley Silt (unproductive strata, grey)

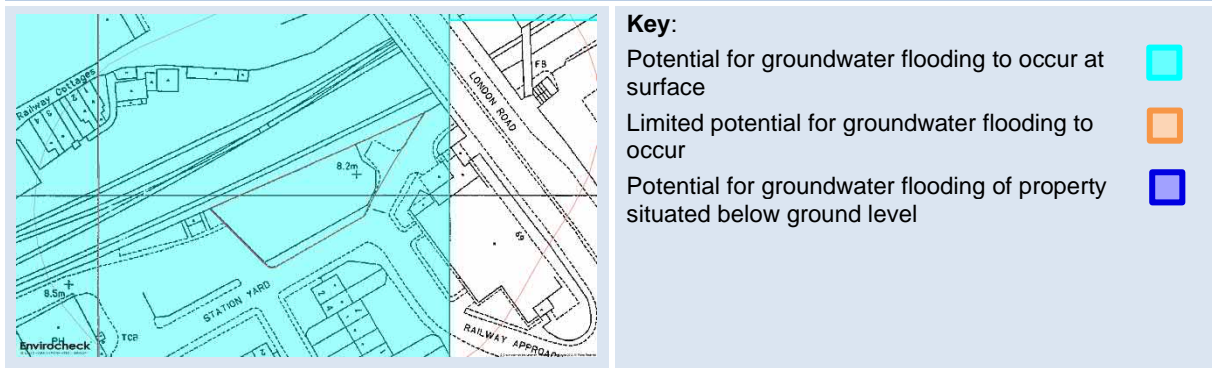


Bedrock – unproductive strata

The EA records within the Envirocheck Report indicate the following:

- The Site is not within a SPZ (Source Protection Zone);
- There are no groundwater abstraction or discharge licences within 1km.
- The Site is not in an area at risk of groundwater flooding 'for properties situated below ground level but is within an area where groundwater flooding may occur at surface; as shown in **Figure 6**.

Figure 6: Groundwater Flooding Risk (Envirocheck)



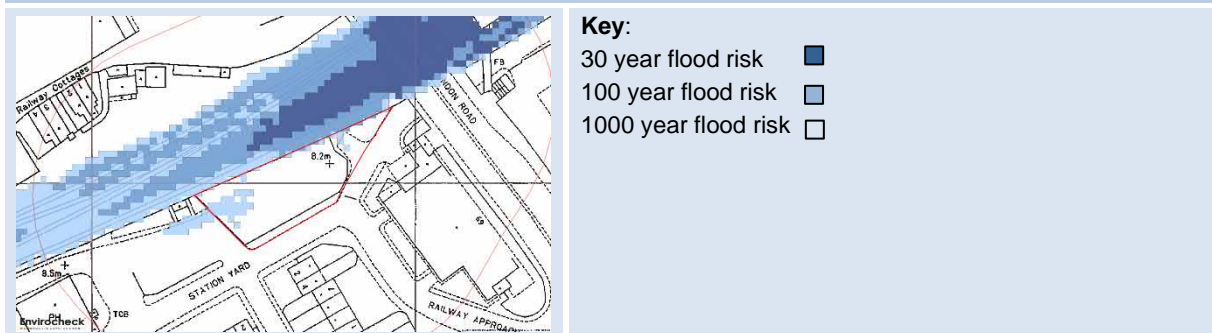
3.6 Hydrology

The nearest known surface water feature is the River Crane, approximately 100m to the north. The River Thames is located just over 500m south of the Site. The Envirocheck Report and EA data also indicate the following:

- There are no surface water abstractions within 1km; and
- There is 1 active discharge consent within 1km of the Site, for discharge from Public Sewers into the River Thames 492m northeast of the Site.

The Envirocheck Report surface water flood risk map (extract in **Figure 7**), indicates some flood risk on Site in the event of a 1 in 1000 year event. Further consideration of flood risk is beyond the scope of this geoenvironmental report.

Figure 7: Surface Water Flood Extents



3.7 Radon

Reference to the UK Radon maps (www.ukradon.org) (and the Envirocheck Report) indicates that the Site is within an area where <1% of the homes are at or above the radon Action Level, based on 1 km squares. Subsequent reference to BR211 on Radon³ indicates that the area is within an area where 'no radon protection measures are necessary in the construction of new dwellings or extensions'.

³ BR211 Radon. Guidance on protective measures for new buildings, 2015 edition. Building Research Establishment.

3.8 Environmental Data Searches

3.8.1 On-Site

Review of the Envirocheck Report did not identify any additional records of geoenvironmental significance on-site. In particular, the report indicates that there are no records of 'Contaminated Land Register Entries' on-site or within 1km.

3.8.2 Off-Site

Based on a review of the Envirocheck Report:

- The following potentially contaminative land-uses are noted within proximity of the Site: an active fuel station (384m east), a former car breakers and dismantlers (69m east) and an unspecified works (178m south of the Site).
- No landfills, historic landfills, licenced waste management facilities, registered waste transfer site, treatment or disposal sites are recorded within 500m of the Site.

3.9 Unexploded Ordnance (UXO)

London was heavily targeted in terms of bombing during World War 2 (WW2). A significant number of bombs did not detonate on impact and some of these bombs are still in the ground. Hence the potential presence of unexploded bombs may present a risk for construction works and residents/occupiers/users of the surrounding areas.

A UXO desk study for the site has not yet been carried out. However, as an initial step towards a preliminary UXO risk assessment (in line with the CIRIA report C681, 2009), a non-specialist UXO screening exercise has been carried out for the Site.

As an initial part of the screening exercise, no historic military land-uses have been identified in proximity to the area from the historic maps and aerial photographs reviewed and described in **Section 3.3**

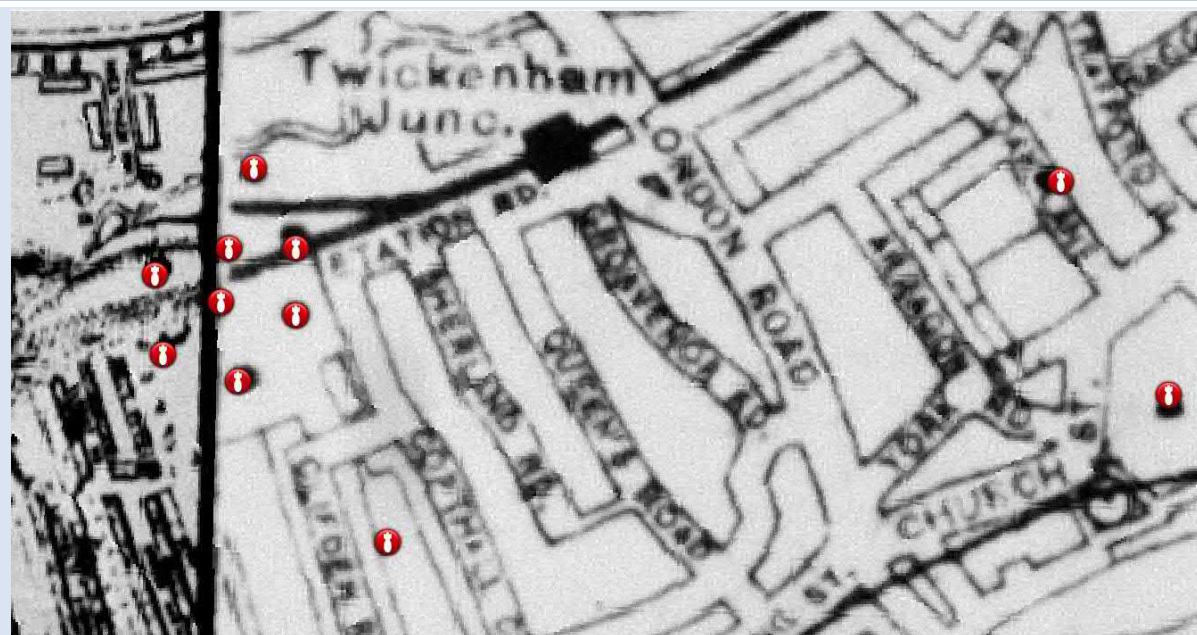
An UXB risk map for the Site has been downloaded from Zetica (<https://zeticauxo.com>)⁵. The map indicates that there is a low to moderate potential for unexploded bombs (UXB) to be present as a result of WW2 bombing. A copy of the map, key and supplementary notes is included in **Appendix C**.

The Bomb Sight website (<http://bombsight.org>) has also been consulted which plots all known aerial bombs that fell during the period of the London Blitz. The Bomb Sight maps indicate that at least 5 high explosive bombs fell between the railway (north), London Road (east), King Street/Heath Road (south) and Grover Avenue (west) between 7 October 1940 to 6 June 1941. Of these, the closest recorded bomb fell close to Staten Gardens, Whitton, London Borough of Richmond upon Thames, TW1 4AF. An extract of the 1940s bomb map from bombsight.org is included in **Figure 8**.

⁴ Zetica are a leading UK provider of services for managing the risk of UXO on land assets.

⁵ Zetica are a leading UK provider of services for managing the risk of UXO on land assets.

Figure 8: Historic Bomb Records



Source: <http://bombsight.org>

3.10 Environmentally Sensitive Designations

The Envirocheck Report records that there are no environmentally sensitive designations within 1km of the Site that are relevant with respect to land contamination.

3.11 Summary of Previous Geoenvironmental Reports

As scheduled in **Section 2.4**, copies of two previous geoenvironmental reports have been provided for review as part of this PF commission. Both reports refer to an RSK ground investigation from 2015 that was designed by Waterman.

The ground investigation included the formation of 3 shallow trial pits (TP1 to TP3), excavated to 1.2m depth below ground level in October 2015. The objective of the ground investigation was primarily to inspect and sample the near-surface materials and/or soils for pre-construction waste classification assessment purposes. A Clegg Impact Hammer test was also carried out in each pit to provide in-situ test data for external areas pavement foundation design.

The reports scheduled in **Section 2.4** represent the Factual Ground Investigation produced by RSK (2015) and the subsequent Waterman report (2015) that presented the findings of the preliminary waste classification assessment. (Note: the geochemical analysis results were only used to undertake a preliminary waste classification assessment and were not used to undertake a generic quantitative risk assessment (GQRA) for human health).

The trial pits encountered a sequence of bituminous hardstanding and clayey gravelly sand (sub-base) over Made Ground, which in turn was underlain by Kempton Park Gravel. An extract of the exploratory hole location plan and the trial pit record for TP2 is presented in **Figure 9**. Hydrocarbon odours were noted on the trial pit records for TP1 (0.1 to 0.5 m strata), TP2 (0.1 to 0.7 m strata, as above) and TP3 (0.1 to 0.5 m strata). No odours were recorded in the Kempton Park Gravel strata.

Soil samples collected from the bituminous hardstanding, Made Ground and underlying Kempton Park Gravel were scheduled for geochemical analysis. These results were used to undertake a preliminary waste classification assessment (PWCA). The results of the PWCA are in **Table 6** and the subsequent text.

Figure 9: Ground Investigation (2015)



Exploratory hole location plan

Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
▲▲	MADE GROUND: Bituminous hardstanding.	0.10	[Cross-hatched pattern]
	MADE GROUND: Light brown and dark brown slightly clayey very gravelly SAND with a low cobble content. Sand is coarse. Gravel is angular to rounded fine to coarse flint, brick, asphalt and concrete. Weak hydrocarbon odour. (Sub-base Material)	(0.25)	
	MADE GROUND: Orangish brown slightly clayey very gravelly SAND with a low cobble content. Sand is coarse. Gravel is angular to well rounded fine to coarse flint and occasional asphalt. Weak hydrocarbon odour.	0.35	
	MADE GROUND: Grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is rounded fine to medium flint.	0.70	
	Brown locally mottled orange slightly clayey gravelly SAND with a low cobble content and occasional lenses of sandy clay. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint. No odour. (Kempton Park Gravel)	(0.40)	[Pattern with circles]
		1.20	

Trial Pit record for TP2 (left).

The findings of each trial pit were broadly similar.

Despite being shallow, all three pits passed through the base of the surfacing and Made Ground materials and encountered natural strata, considered to be the BGS-mapped Kempton Park Gravel.

No groundwater ingress was encountered in any of the three pits.

Table 6: Preliminary Waste Classification Acceptance Results (2015)

TP	Depth, mbgl	Strata	Hazardous or Non-hazardous	Elevated Concentrations	Meets Landfill Acceptance Criteria
TP1	0.0-0.5	Bituminous	Hazardous	PAHs	-
TP1	0.5-0.65	Reworked Natural	Non-hazardous	-	Inert (non-hazardous)
TP1	0.8-1.0	Natural KPG	Non-hazardous	-	Inert (non-hazardous)
TP2	0.0-0.1	Bituminous	Non-hazardous	-	-
TP2	0.2-0.3	Sub-base	Non-hazardous	-	Inert (non-hazardous)
TP2	0.5-0.6	Made Ground	Hazardous	TPH, PAHs	Hazardous landfill
TP3	0.2-0.25	Bituminous	Hazardous	PAHs	-
TP3	0.25-0.4	Made Ground	Hazardous	PAHs	Hazardous landfill
TP3	0.8-0.9	Natural KPG	Non-hazardous	-	Inert (non-hazardous)

The results of the 2015 preliminary Waste Classification Assessment indicated the following:

- *Bituminous surfacing*: 3 nr. samples were analysed. Two of the samples were classified as hazardous due to elevated concentrations of speciated polycyclic aromatic hydrocarbons (PAHs). The remaining sample classified as non-hazardous.
- *Sub-base*: 1 nr. sample was analysed and classified as non-hazardous. Comparison against the landfill acceptance criteria for inert landfills indicated that this sample would also be suitable for disposal to an inert landfill (under the non-hazardous List of Waste code 17 05 04).
- *Made Ground*: 2 nr. samples of were analysed. Both samples were classified as hazardous due to elevated concentrations of total petroleum hydrocarbons and/or speciates PAHs. The results for both samples were also within the landfill acceptance criteria for hazards waste landfills.
- *'Reworked natural strata'*: 1 nr. sample was analysed and classified as non-hazardous. Comparison against the landfill acceptance criteria for inert landfills indicated that this sample would also be suitable for disposal to an inert landfill (under the non-hazardous List of Waste code 17 05 04).
- *Kempton Park Gravel (KPG)*: 2 nr. samples were analysed and both classified as non-hazardous. Comparison against the landfill acceptance criteria for inert landfills indicated that these samples would also be suitable for disposal to an inert landfill (under the non-hazardous List of Waste code 17 05 04).

Note: All 6 soil samples of Made Ground, reworked natural and KPG, were also screened for the presence of 'asbestos in soils', the results recorded NAD i.e. 'No Asbestos Detected'.

4 Preliminary Land Contamination Risk Assessment

4.1 Introduction

A Preliminary Risk Assessment (PRA)⁶ has been undertaken to identify potential land contamination and/or geoenvironmental constraints which could impact upon and/or restrict the proposed development. The main part of the PRA involves the development of a Conceptual Site Model (CSM). The CSM is a 'representation of the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors'⁶; (see definitions in **Table 7**).

Table 7: Contaminant-Pathway-Receptor Definitions⁷

Term	Definition
Contaminant	A substance in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution to controlled waters.
Receptor	Something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property or controlled waters
Pathway	A route or routes by which a receptor is or might be affected by a contaminant.

The term 'contaminant linkage' (CL) is used to describe the relationship between a particular 'contaminant-pathway-receptor' combination. All three elements of a CL would need to be present for a land contamination risk to exist.

The CLs from the desk-based review are compiled to form an 'outline' or 'initial' CSM. The CSM can then be used to inform the overall land contamination risk assessment process and to identify requirements for more detailed investigation. The CSM is subsequently refined or revised as more information and understanding is obtained.

4.2 Potential Contaminant Sources

Table 8 summarises the potential contaminant sources and/or potentially contaminative land-uses that have been identified on-site and/or in proximity to the Site, as part of the desk-based review.

Table 8: Potentially Contaminative Land-Uses

On-site	Off-site
<ul style="list-style-type: none"> Car Park (potential source of hydrocarbon contamination), Made Ground (potentially including elevated heavy metal and hydrocarbon concentrations). 	<ul style="list-style-type: none"> Railway land including tracks, sidings and sheds to the north and former station. Potential Made Ground associated with demolition of the former station. Former industrial land-uses including 'works' to the north and south. Garage.

Based on the potentially contaminative land-uses summarised above, the following contaminants should be considered when compiling future geochemical laboratory analysis suites:

Heavy metals/metalloids (including but not limited to arsenic, cadmium, chromium vi, copper, lead, mercury, nickel, selenium, vanadium and zinc), asbestos, sulphate/sulphide, and hydrocarbons (including total petroleum hydrocarbons and polycyclic aromatic hydrocarbons). Analysis suites should also include supporting information/determinands including pH, total organic carbon and loss on ignition.

⁶ CLR11, Model Procedures for the Management of Land Contamination, Environment Agency, 2004

⁷ Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance, Defra, 2012.

4.3 Potential Receptors

In line with Defra’s Contaminated Land Statutory Guidance⁷, the following potential receptors have been identified with respect to the Site and the proposed end-use:

- Human health of the future end users;
- Human health of the site preparation and construction workers; and
- Kempton Park Principal Aquifer.

4.4 CSM and Risk Assessment

An initial CSM for the proposed development is presented as **Table 10**. The status of CLs included in the CSM should only be considered as ‘potential’ CLs until the possible sources identified can be investigated to establish their presence/absence and/or significance.

As part of this PRA, a qualitative risk assessment has been undertaken for each CL. The assessment considers the product of the ‘severity of the consequence’ and the ‘probability of the likelihood’ as detailed in the Risk Matrix below (**Table 9**). The Risk Matrix is based on guidance within the CIRIA C552⁸ good practice guide. For ease of reference the resulting risk rating has been included in the CSM. The results of the qualitative risk assessment have been integrated into **Table 10**.

Table 9: Risk Matrix Key

<i>Product probability x consequence</i>		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

⁸ CIRIA C552, Contaminated land risk assessment, A guide to good practice (CIRIA), 2001.

Table 10: Conceptual Site Model

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments
Contaminants within the Made Ground	Ingestion, inhalation or direct dermal contact	End users	Likely	Medium	Moderate to Low	<p>Previous reports indicate the presence of a thickness of Made Ground across the Site with detectable concentrations of heavy metals and hydrocarbons (GQRA of the previous data is beyond the scope of this report). Previous ground investigation was limited to 3 very shallow trial pits.</p> <p>It should be noted that with respect to end users the proposed building will occupy most the plan area of the Site. Further sampling and risk assessment should include consideration of the proposed landscaping areas towards the perimeters of the Site.</p> <p>Recommend: additional ground investigation including near surface soil sampling to enable the geochemical nature of these materials to be further investigation and potential sources to be quantified and the risk to be assessed.</p>
		Site preparation workers	Likely	Medium	Moderate	
Hydrocarbon contamination within the Made Ground (from car parking)	Migration through the unsaturated zone	Principal Aquifer within superficial deposits (Kempton Park Gravel)	Likely to low likelihood	Medium	Moderate	<p>Principal aquifer within the underlying superficial deposits.</p> <p>Given the limited contaminative land uses on the site itself (car park), the risk that the ground conditions could be causing identifiable deterioration in groundwater quality is likely to be low. However, elevated hydrocarbon concentrations were recorded in the 2015 ground investigation.</p> <p>Recommend: additional ground investigation to determine the geochemical nature of the Made Ground and near surface soils and to observe the nature of shallow groundwater, if encountered.</p>
Asbestos containing soils (ACSs)	Inhalation	End users	Likely to low likelihood	Medium	Low	<p>Previous reports indicate that Made Ground is present on site. The 2015 Ground Investigation did not identify Asbestos in Soils therefore the risk level is recorded as low in this preliminary risk assessment. However, the ground investigation was limited to 3 exploratory holes across the site.</p> <p>Recommend: additional ground investigation including near surface soil samples to screen for asbestos in soils in additional locations across the Site.</p>
		Site preparation workers	Likely to low likelihood	Medium	Low	

4.5 Potential CLs & Recommendations for Further Work

The PRA has identified five potential CLs for the proposed development, of which three have been assigned a 'moderate' initial risk rating, associated with the following:

- Moderate risk of contact with existing Made Ground contamination by site workers in the construction phase of the development,
- Moderate to low risk of contact with existing Made Ground contamination by end users,
- Moderate risk of contamination impacting of the Principal Aquifer within the superficial deposits.

No high-risk CLs have been identified as this time.

Based on the PRA, it is considered highly unlikely that the Site would be classified as Contaminated Land under Part 2A of the Environmental Protection Act (EPA) 1990.

The PRA summarised above is based on the available data presented in this report and progressed using qualitative judgement only, it should be noted that the scope of work for this commission did not include undertaking GQRA of the geochemical data from 2015.

Phase 2 site investigation and further risk assessment would be recommended to further evaluate the potential risks, to enable the CSM to be updated and to determine whether mitigation/remedial measures will be required.

5 Geotechnical Considerations

5.1 Hazard Identification

The constraints of the Site and the associated development proposals were outlined in **Section 1.2**. The use of pile foundations is proposed as a result of the site constraints. At the time of preparation of this report, the use of CFA bored piles of 600 mm diameter is under consideration.

Further to consideration of the development proposals in conjunction with the desk study findings on geological setting, the following table comprises a preliminary geotechnical hazard identification, with associated mitigation measures also set out.

Table 10: Preliminary Geotechnical Hazards

Item	Hazard	Impact on the Proposed Development	Mitigation Measures
General Ground Conditions	Unknown Ground Materials Strength Profile, Physical and Chemical Properties: Unknown strength profile of underlying soils leads to unknown pile foundation diameter and depth. Poorly compacted and variable thickness Made Ground may result in settlement of external areas. The ground may contain potentially sulfate bearing soils and fill materials.	Conservative Design Solutions: Inability to appraise a wide range of design solutions due to lack of information. An over-conservative design may arise. Impact to Cost and Programme: Unforeseen ground conditions may cost delays and cost implications to the programme. Potential Concrete Damage: Aggressivity of the ground may damage the foundation materials.	Ground Investigation: Undertake a detailed site-specific ground investigation where boreholes of appropriate depth are carried out with associated in-situ and laboratory geotechnical testing in order to determine the strata profile on site, parameters for design and soil aggressivity to buried concrete.
Existing Infrastructure (including underground structures)	Damage to Third Party Assets: The Site has both existing main sewers and adjacent railway lines, performance of which could be detrimentally affected as the result of the temporary and permanent works. Underground Obstructions: Old foundations could be in place within the ground, particularly within the northwest corner of the site, formerly occupied by the station building.	Conservative Design Solutions: Restrictions on construction techniques due to the proximity to existing structures. Restrictions on allowable movements due to the proximity to existing buildings and structures. Impact to Cost and Programme: Unrecorded and / or unforeseen obstructions/ structures may cause serious delays to piling and groundworks and cost implications to the programme.	Construction Planning: Construction sequences and techniques to be assessed with regards to their impact to buried structures and rail lines nearby. Ground Investigation: Incorporate some works to search for obstructions at ground investigation stage.
Services	Risk to Workers and End Users and 3rd Party Assets: Damage to existing and proposed utilities and services.	Health and Safety: Health and safety implications for construction workers and general public if a service strike were to occur during construction. Impact to Cost and Programme: Unexpected services can cause delays and cost implications to the programme especially if damage to third party assets occurs.	Services Location: Obtain all the latest existing service drawings and liaise with service providers to understand constraints and requirements from service providers. Impact Assessment: Undertake an assessment of proposed works (temporary and permanent) on third party assets. Develop monitoring and mitigation proposals.
Unexploded Ordnance	Risk to Workers and End Users: Encountering UXO during works. Site is identified as moderate risk based on initial assessment.	Health and Safety: Health and safety issues during construction. Impact to Cost and Programme: Unforeseen UXO may cause delays and cost implications to the programme	UXO Assessment: Procure a detailed risk assessment from a specialist company prior to any intrusive investigation, excavation and piling works.

5.2 Preliminary Geotechnical Design Considerations

Further to the implementation of site-specific ground investigation as promoted in the mitigation column of **Table 10**, the bored piles which are proposed for support of the building can be designed to a conventional approach for installation within the underlying London Clay sequence. Archive borehole TQ17SE3 to the northwest indicates that the London Clay formation strata may be present to in excess of 50m depth below the site, so once below the Kempton Park Gravel, only progressively stiffening London Clay is likely to be encountered in the pile bores. Seams of claystones may be encountered as elsewhere in the London Clay formation. At least one borehole should be scheduled to a depth which is several metres below the lowest likely predicted pile toe depth.

With the proposed building wholly supported on pile foundations and the floor slab effectively suspended at just above existing ground level, there is little geotechnical scheme challenge or complexity in relation to excavations and temporary works, provided that the sewers are given adequate protection throughout the groundworks stage and the agreed (with Network Rail) railway 'exclusion zone' is marked out on site and enforced during the construction period.

6 Conclusions and Recommendations

6.1 Conclusions

6.1.1 Geoenvironmental

The preliminary land contamination risk assessment (PRA) has identified 5 potential contamination linkages (CLs), 2 relate to the construction phase, 2 relate to the end-users of the proposed development and the remaining CL relates to the underlying aquifer that could be impacted during and/or after construction.

Based on the PRA, it is considered highly unlikely that the Site would be classified as Contaminated Land under Part 2A of the Environmental Protection Act 1990. No 'high' risk potential Contaminant Linkages (CLs) have been identified to date. The PRA identified five potential CLs for the proposed development, of which three have been assigned a 'moderate' initial risk rating, associated with the following:

- Moderate risk of contact with existing Made Ground contamination by site workers in the construction phase of the development,
- Moderate to low risk of contact with existing Made Ground contamination by end users,
- Moderate risk of contamination impacting on the Principal Aquifer within the superficial deposits.

The PRA summarised above is based on the available data presented in this report and has been progressed using qualitative judgement only. It should be noted that the scope of work for this commission did not include undertaking GQRA of the geochemical data from 2015.

Phase 2 site investigation and further risk assessment would be recommended to further evaluate the potential risks, to enable the CSM to be updated and to determine whether mitigation/remedial measures will be required.

6.1.2 Geotechnical

The ground conditions profile below the site is relatively well-defined by archive boreholes in the area and geological mapping, so it is apparent that the CFA bored piles which are proposed to support the building comprise a suitable foundation strategy. Site-specific ground investigation is required to characterise the strength profile within the London Clay, to allow cost-efficient pile design. The ground investigation should also include sampling and laboratory testing to characterise the engineering properties of both the near surface and deeper soils, to quantify the potential aggressivity to buried concrete.

6.2 Recommendations

Based on the above the following site investigation activities are recommended:

- Two or three deep cable percussive boreholes to inform pile design.
- Shallow dynamic sample holes to characterise near surface Made Ground materials and natural soils.
- Installation of groundwater monitoring wells and subsequent monitoring and sampling for generic groundwater risk assessment.
- Laboratory analysis of soil samples for the purpose of generic human health risk assessment and additional pre-construction Waste Classification Assessment (WCA).

The above Phase 2 site Investigation and subsequent risk and hazard assessments are recommended to further evaluate the potential risks, to enable the CSM to be updated and to determine whether mitigation/remedial measures will be required.

The pre-existing 2015 ground investigation findings and geochemical data should also be considered as part in the generic human health risk assessment and additional pre-construction WCA.

7 Uncertainties and Limitations

This report has been prepared by Pell Frischmann with reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with our client Solum Regeneration, in accordance to the agreed scope of services.

This report has been prepared to provide pre-development geoenvironmental recommendations for the development of the Twickenham Station Yard site. The report contents should only be used in that context and Pell Frischmann disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

The report details the findings of work carried out by Pell Frischmann during a study period during October 2019. The report has been prepared on the basis of available information obtained during that study period. Information provided by the referenced third parties has been used in good faith and is taken at face value; however, Pell Frischmann cannot guarantee its accuracy or completeness.

Although every reasonable effort has been made to gather all relevant information within the context of the agreed scope of work, all potential environmental constraints or liabilities associated with the site may not have been revealed. Should additional Information become available (including new legislation and changed practices), after the date of the report submission, Pell Frischmann reserves the right to reconsider the recommendations and alter the report accordingly.

Notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal or specific survey of these potential development hazards. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance.

Appendix A

Historic Maps

London

Published 1894 - 1896

Source map scale - 1:1,056

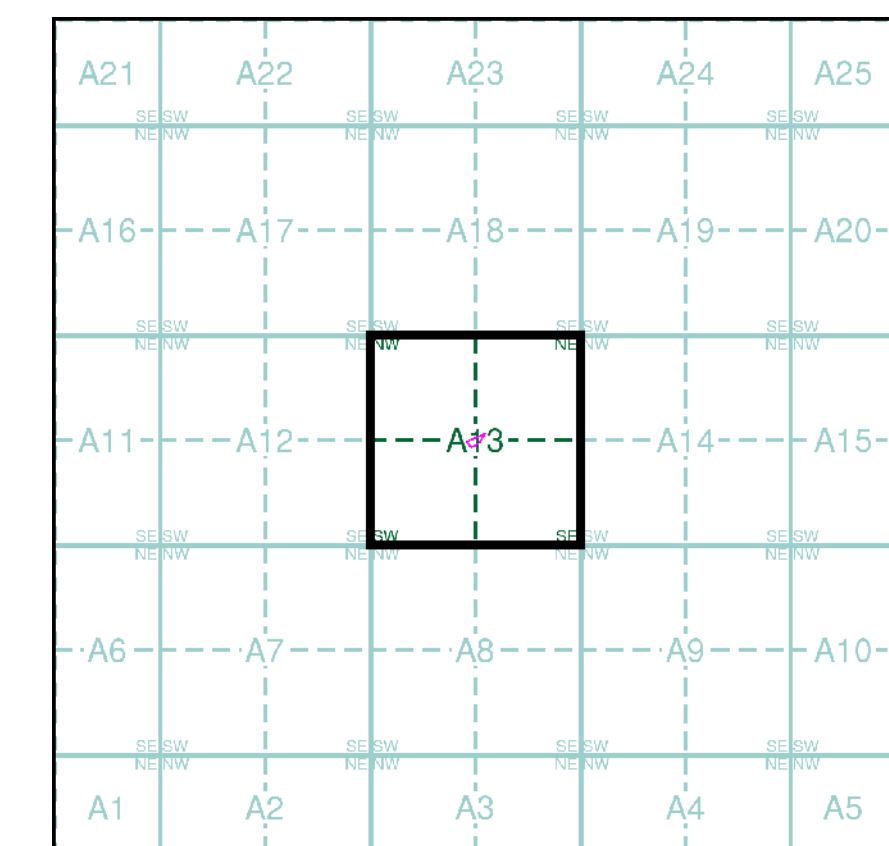
The 1:1056 scale of Ordnance Survey mapping was adopted for Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

009_00_078 1896 1:1,056	009_00_079 1894 1:1,056
009_00_088 1894 1:1,056	009_00_089 1894 1:1,056

Historical Town Plan - Segment A13

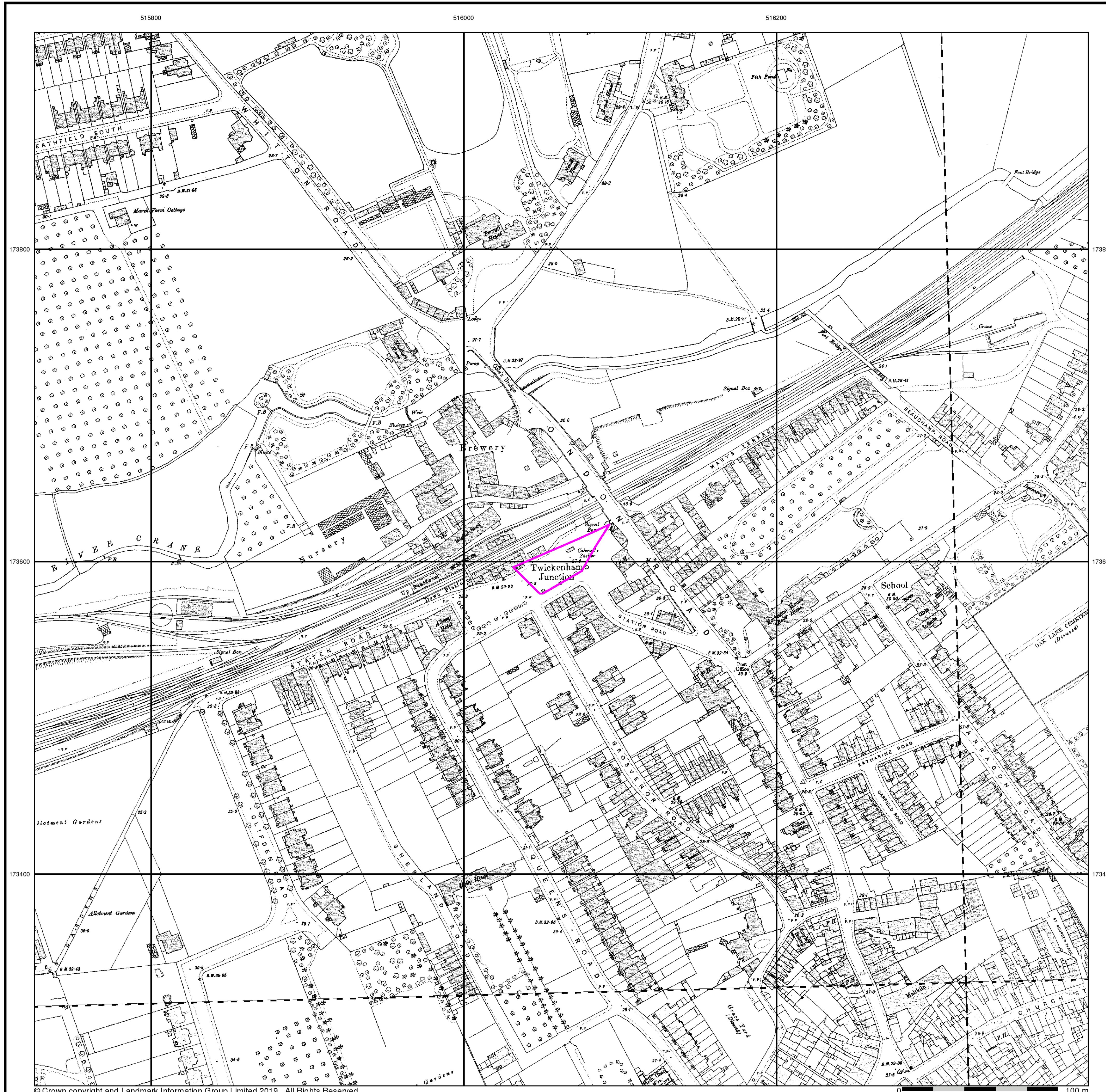


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 0

Site Details

Site at, Twickenham, Richmond upon Thames



Historical Mapping Legends

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

Quarry, Gravel Pit, Sand Pit, Clay Pit, Shingle, Refuse Heap, Sloping Masonry, Flat Rock, Marsh, Reeds, Osiers, Rough Pasture, Furze, Wood, Mixed Wood, Brushwood, Orchard, Fir, Ford, Stepping Stones, Ferry, Waterfall, Lock, Trig. Station, Bench Mark, Arrow denotes flow of water, Cutting, Embankment, Railway crossing Road, Level Crossing, Road crossing Railway, Railway crossing River or Canal, Road over single stream, Road over River or Canal, County Boundary (Geographical), County & Civil Parish Boundary, Administrative County & Civil Parish Boundary, County Borough Boundary (England), County Borough Boundary (Scotland), Boundary Post or Stone, Police Call Box, Brick Road, Pump, Electricity Pylon, Signal Post, Foot Bridge, Sluice, Foot Path, Spring, Gate Post or Board, Telephone Call Box, Mile Stone, Trough, Measuring Post or Ring, Wall, Pillar, Pole or Post, Post Office, Public Convenience, Pump, Pumping Station, Place of Worship, Sewage Pumping Station, Signal Box or Bridge, Signal Post or Light, Filter Bed, Spring, Tank or Track, Gas Valve Compound, Trough, Gas Governor, Wind Pump, Gas Post, Water Point, Water Tap, Marsh, Works (building or arse), Well, Wind Pump.

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

Inactive Quarry, Chalk Pit or Clay Pit, Active Quarry, Chalk Pit or Clay Pit, Rock, Boulders, Slopes, Roofed Building, Glazed Roof Building, Sloping Masonry, Archway, Non-Coniferous Tree (surveyed), Coniferous Tree (surveyed), Non-Coniferous Trees (not surveyed), Coniferous Trees (not surveyed), Orchard Tree, Scrub, Bracken, Coppice, Osier, Reeds, Marsh, Saltings, Rough Grassland, Heath, Culvert, Direction of water flow, Bench Mark, Antiquity (site of), Cave Entrance, Triangulation Station, Electricity Pylon, Electricity Transmission Line, County Boundary (Geographical), County & Civil Parish Boundary, Civil Parish Boundary, Admin. County or County Bor. Boundary, London Borough Boundary, Symbol marking point where boundary meeting changes, Barracks, Battery, Post Office, Public Convenience, Pump, Pumping Station, Place of Worship, Sewage Pumping Station, Signal Box or Bridge, Signal Post or Light, Filter Bed, Spring, Tank or Track, Gas Valve Compound, Trough, Gas Governor, Wind Pump, Gas Post, Water Point, Water Tap, Marsh, Works (building or arse), Well, Wind Pump.

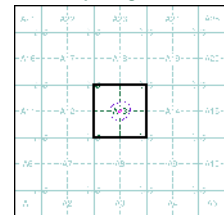
Large-Scale National Grid Data 1:2,500 and 1:1,250

Slopes, Top, Cliff, Rock (scattered), Boulders (scattered), Positioned Boulder, Non-Coniferous Tree (surveyed), Coniferous Tree (surveyed), Non-Coniferous Trees (not surveyed), Coniferous Trees (not surveyed), Orchard Tree, Scrub, Bracken, Coppice, Osier, Reeds, Marsh, Saltings, Rough Grassland, Heath, Culvert, Direction of water flow, Triangulation Station, Antiquity (site of), Electricity Transmission Line, Electricity Pylon, Buildings with Building Seed, Glazed Roof Building, Civil parish/community boundary, District boundary, County boundary, Boundary post/stone, Boundary meeting symbol (note: these always appear in opposed pairs or groups of three).

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pn
Middlesex	1:2,500	1874 - 1881	2
Surrey	1:2,500	1879 - 1891	3
London	1:2,500	1896	4
Surrey	1:2,500	1898	5
Surrey	1:2,500	1913	6
Middlesex	1:2,500	1914 - 1915	7
Middlesex	1:2,500	1934 - 1935	8
Surrey	1:2,500	1934	9
Historical Aerial Photography	1:1,250	1946	10
Ordnance Survey Plan	1:1,250	1959 - 1961	11
Ordnance Survey Plan	1:2,500	1960 - 1962	12
Additional SIMs	1:2,500	1960	13
Additional SIMs	1:1,250	1961 - 1982	14
Ordnance Survey Plan	1:1,250	1967 - 1987	15
Supply of Unpublished Survey Information	1:1,250	1973	16
Additional SIMs	1:1,250	1981 - 1990	17
Large-Scale National Grid Data	1:1,250	1991	18
Large-Scale National Grid Data	1:1,250	1995	19
Large-Scale National Grid Data	1:1,250	1996	20
Historical Aerial Photography	1:2,500	1999	21

Historical Map - Segment A13



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

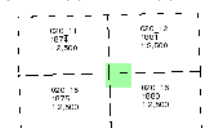
Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

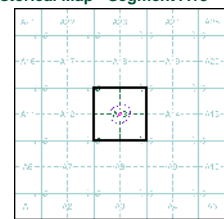
Middlesex Published 1874 - 1881 Source map scale - 1:2,500

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 was 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)



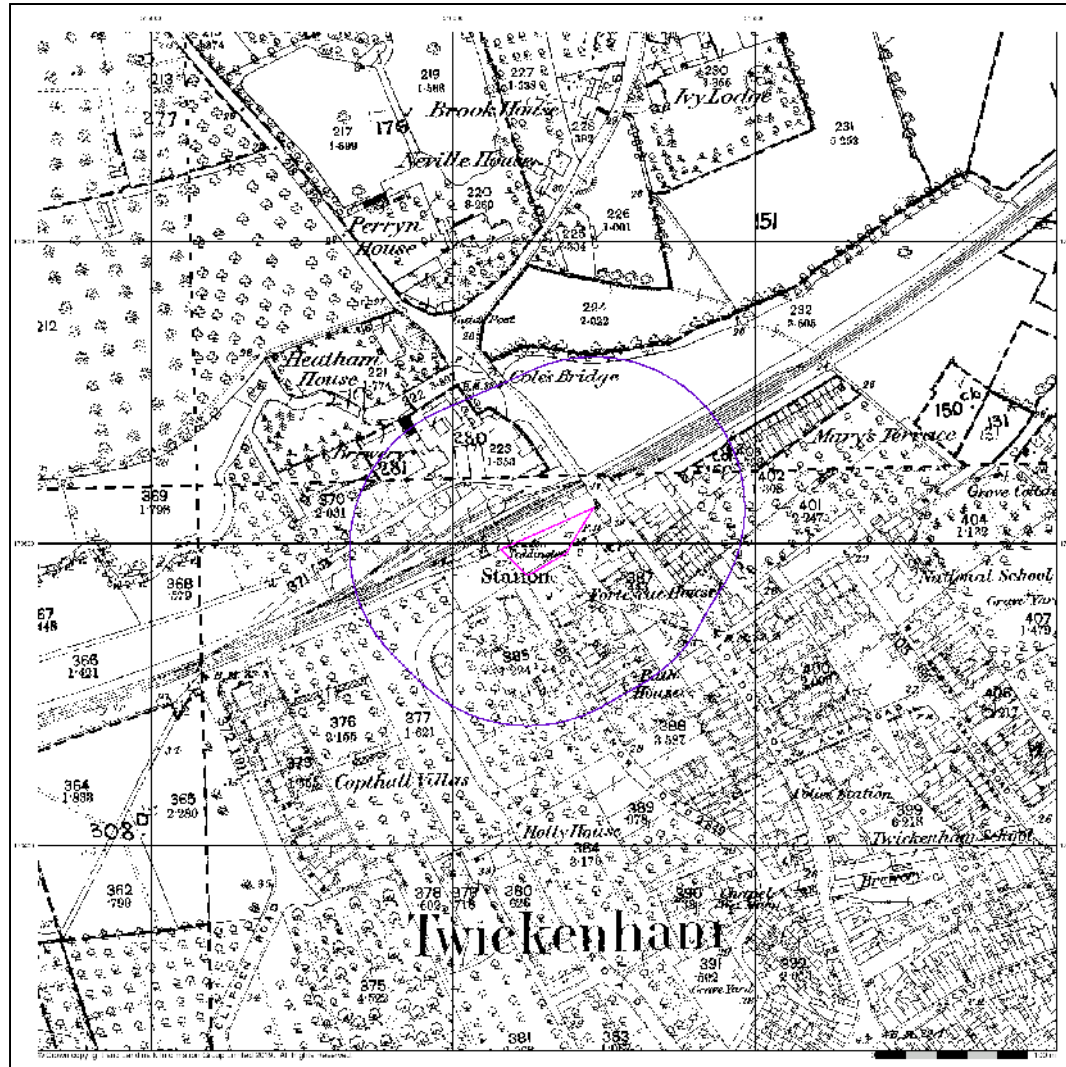
Historical Map - Segment A13



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



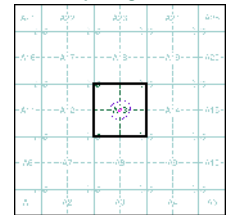
Surrey
Published 1879 - 1891
Source map scale - 1:2,500

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

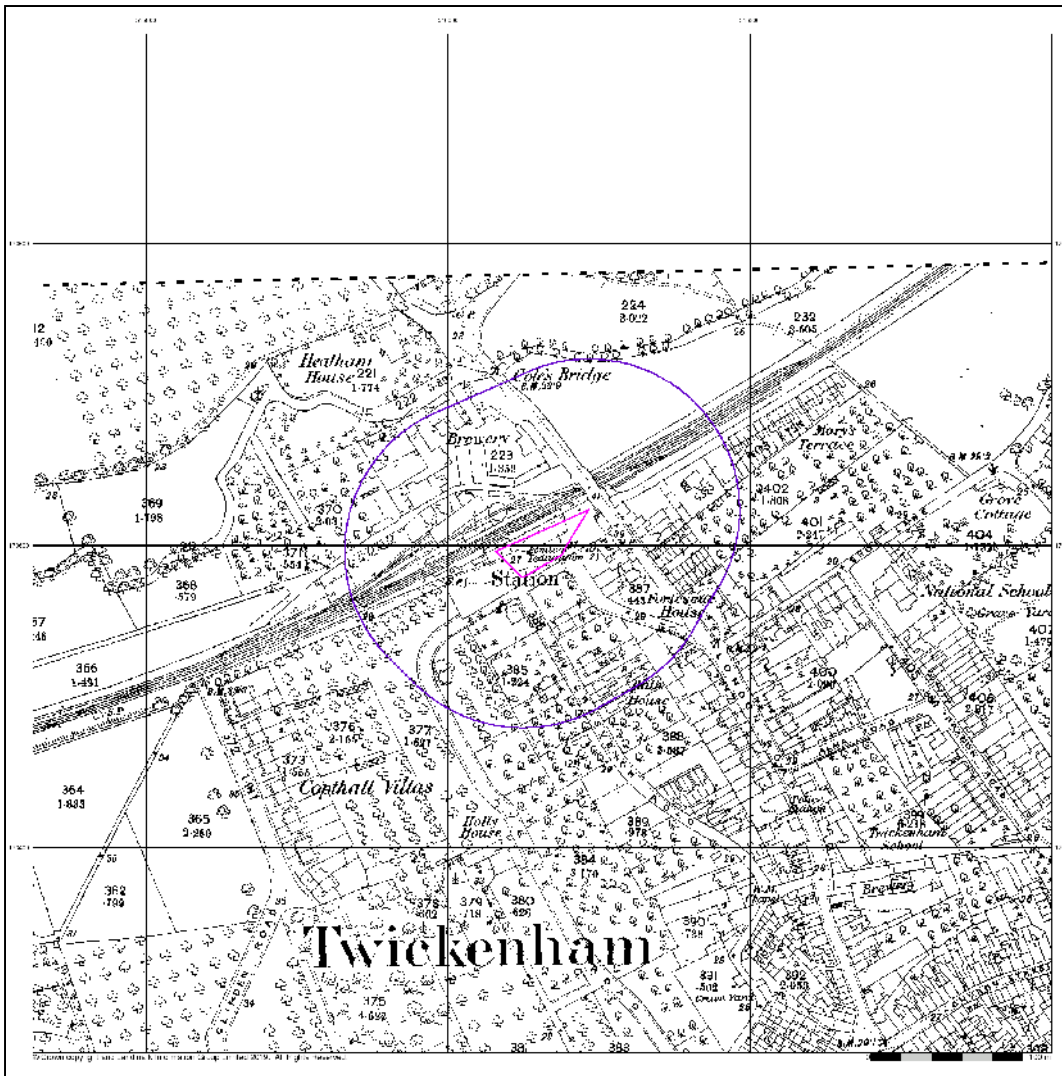


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

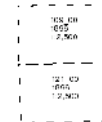
Site at, Twickenham, Richmond upon Thames



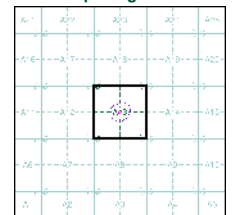
London
Published 1896
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

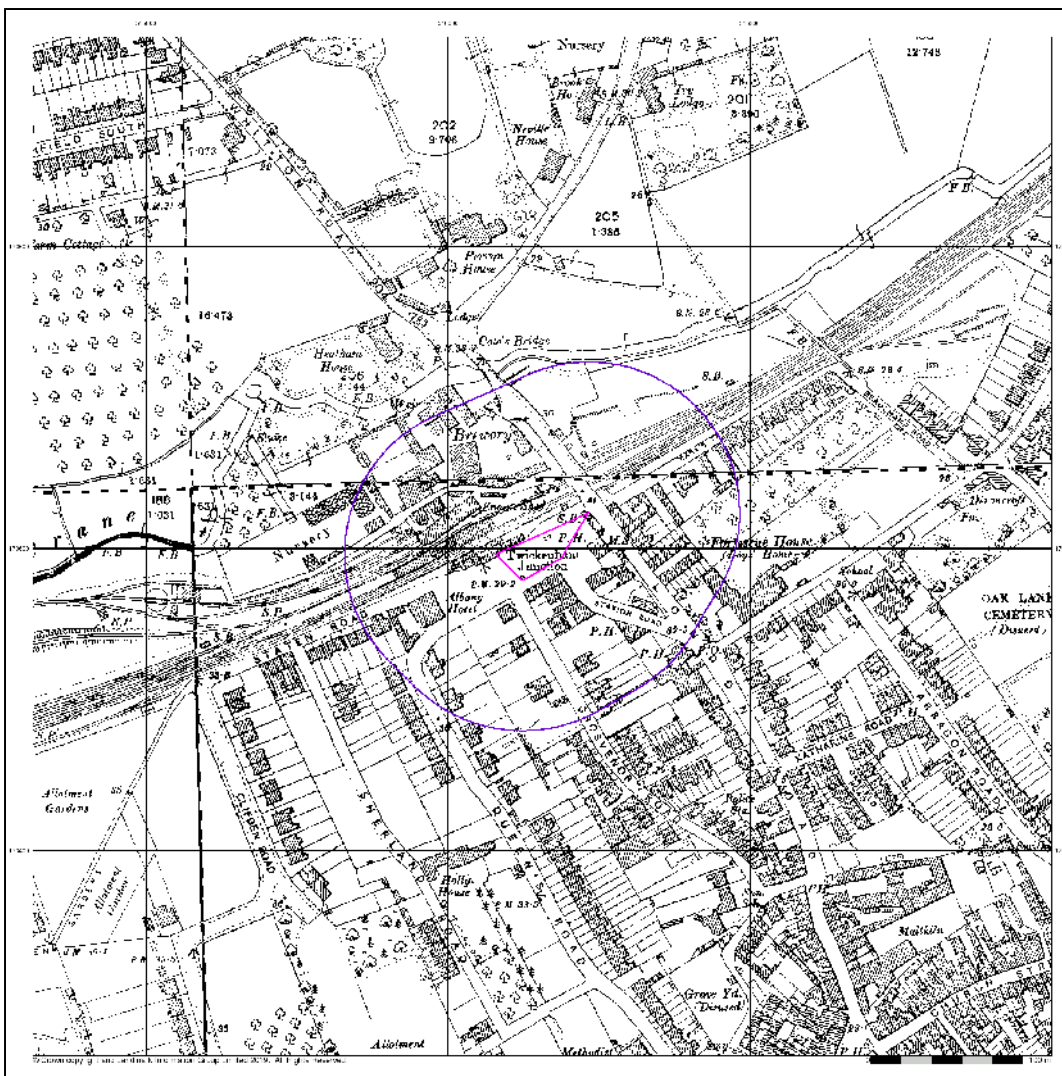


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

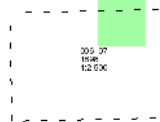
Site at, Twickenham, Richmond upon Thames



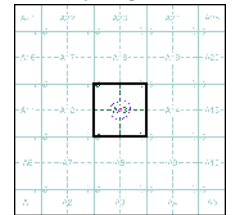
Surrey
Published 1898
Source map scale - 1:2,500

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

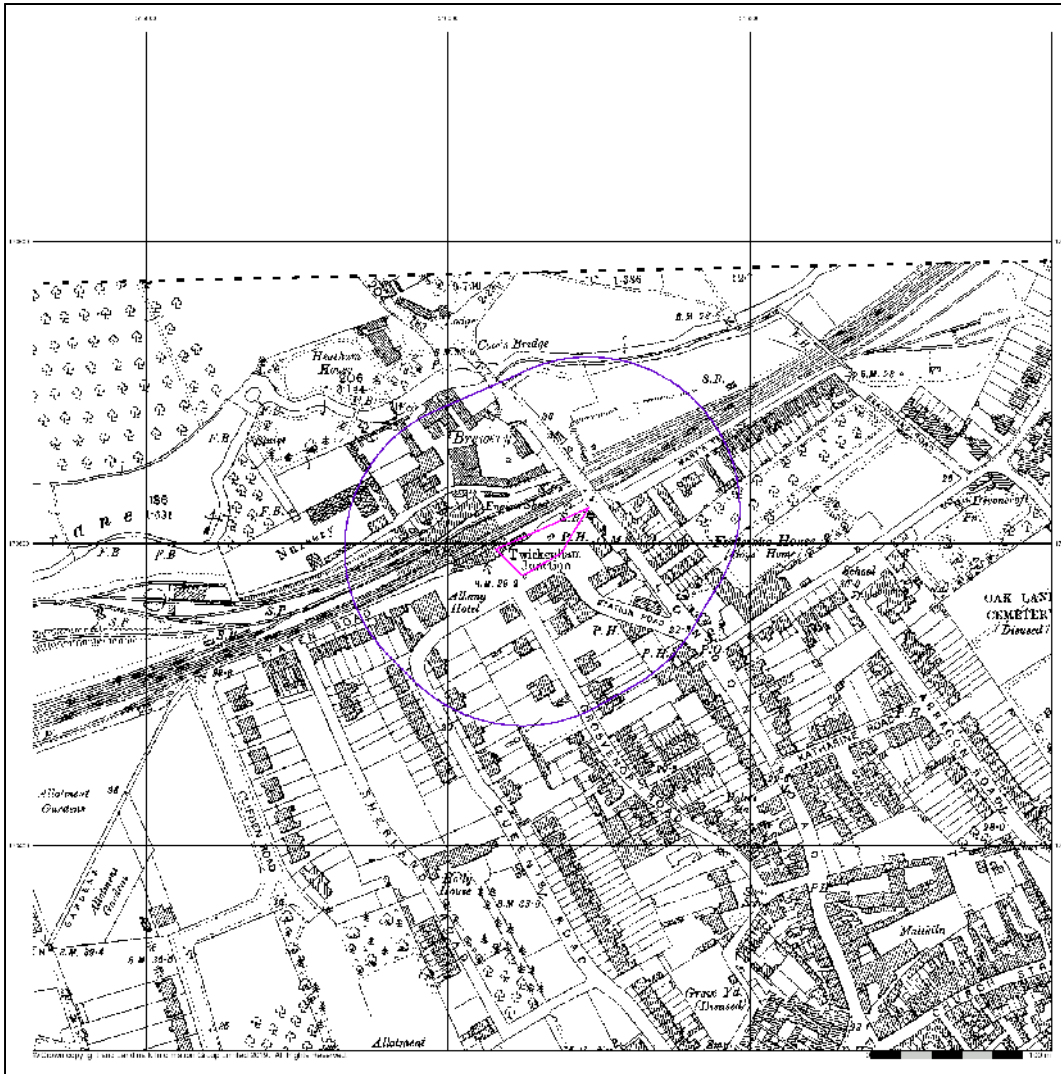
Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



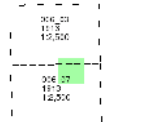
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



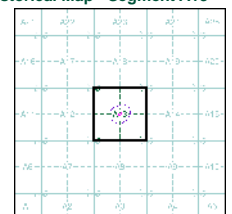
Surrey
Published 1913
Source map scale - 1:2,500

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

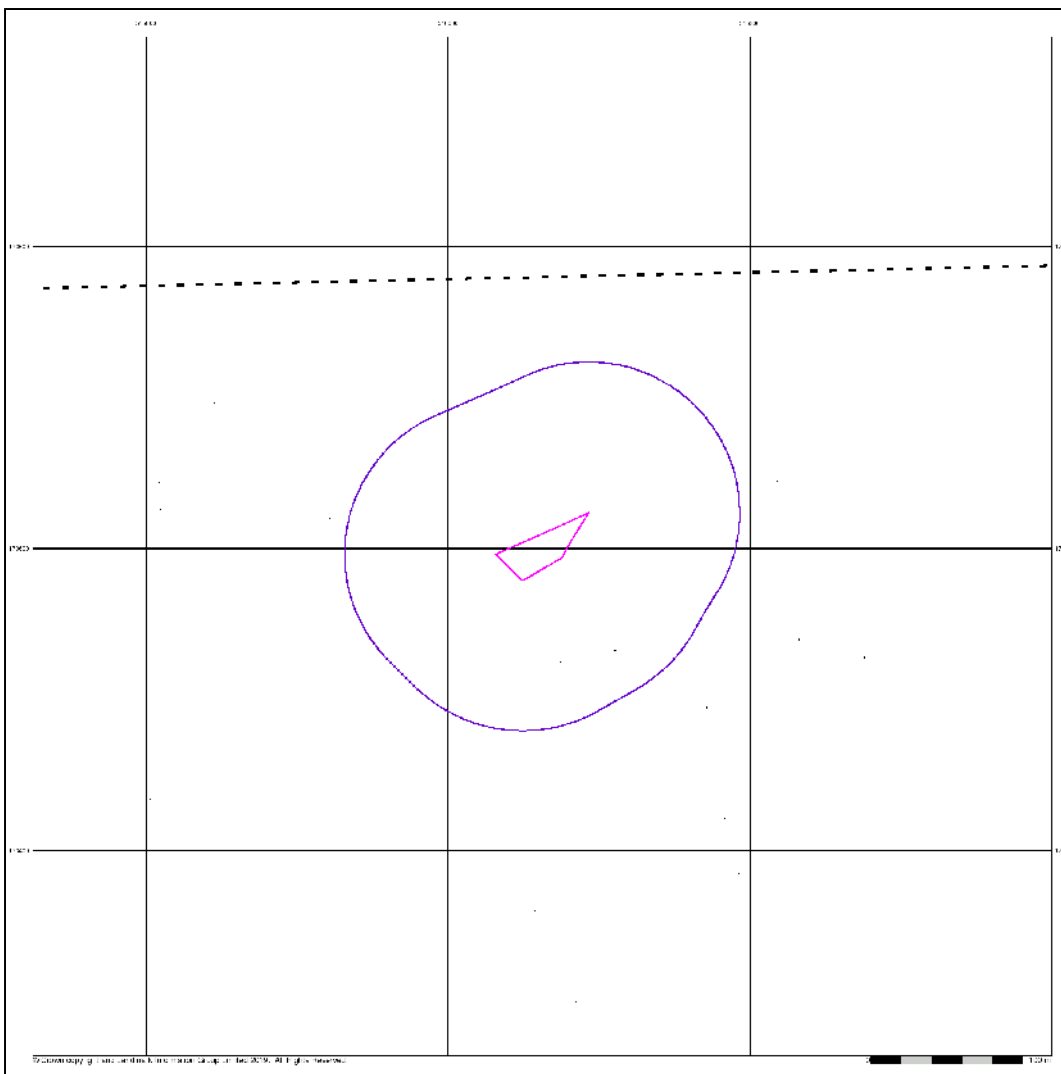
Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



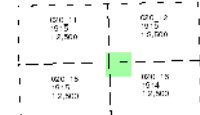
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



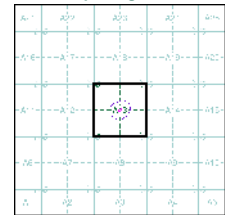
Middlesex
Published 1914 - 1915
Source map scale - 1:2,500

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

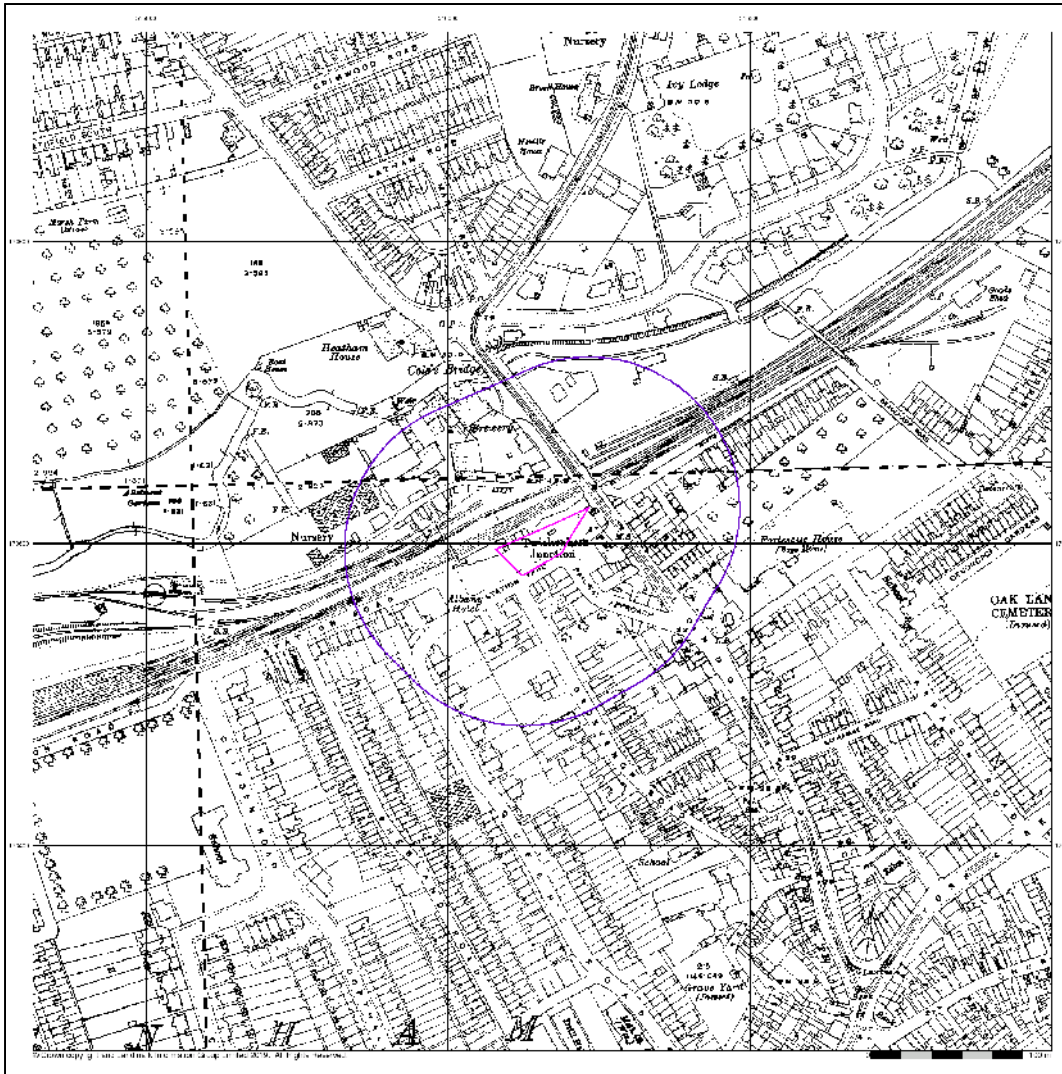


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

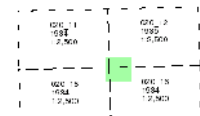
Site at, Twickenham, Richmond upon Thames



Middlesex
Published 1934 - 1935
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

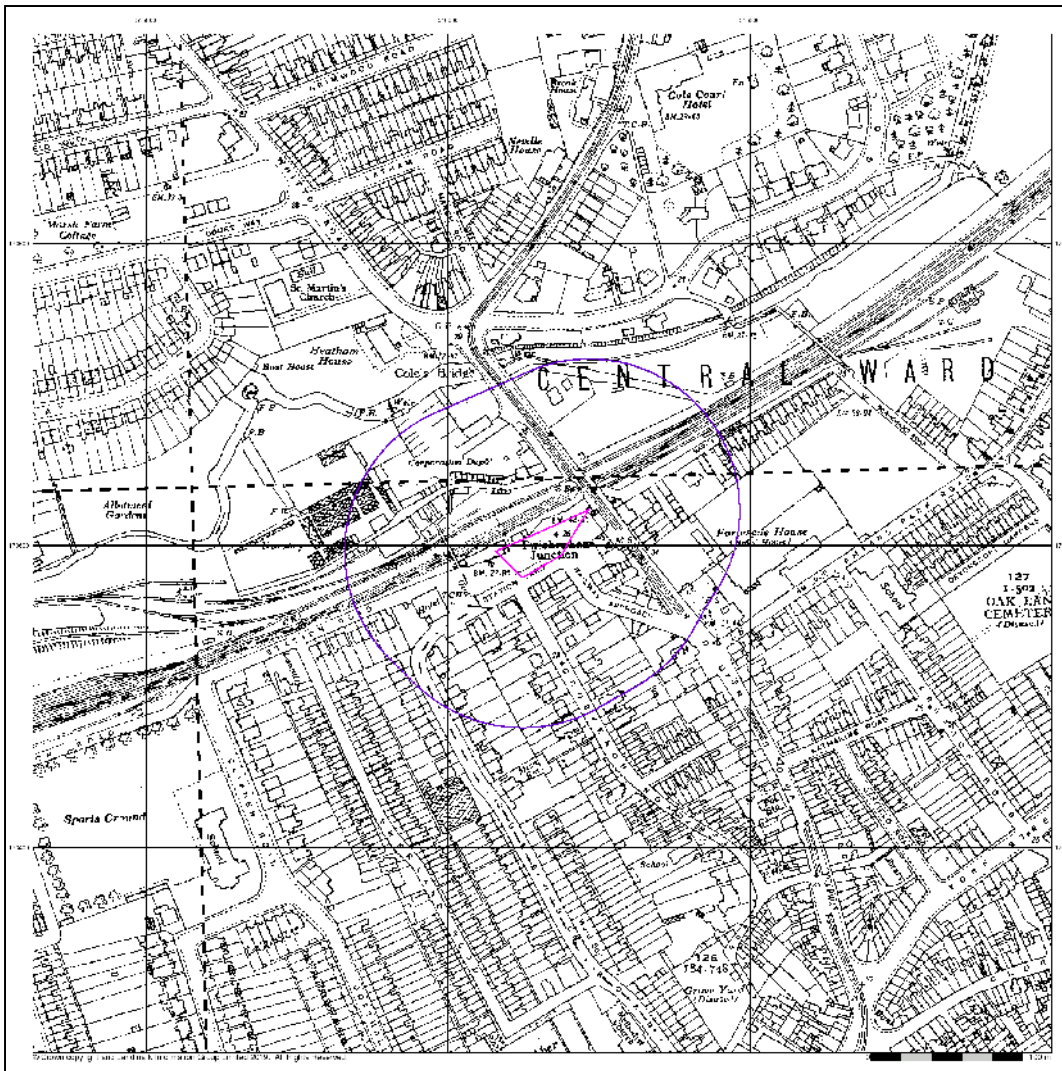


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

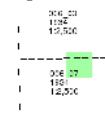


Surrey
Published 1934

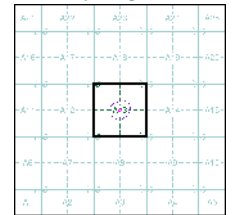
Source map scale - 1:2,500

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 1886 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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

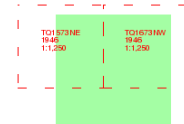
Historical Aerial Photography
Published 1946

Source map scale - 1:1,250

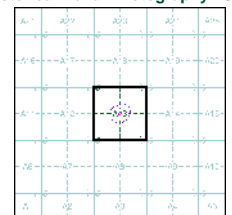
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was rechecked 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.

© THE BRITISH LIBRARY BOARD. ALL RIGHTS RESERVED. Licence No: 8048

Map Name(s) and Date(s)



Historical Aerial Photography - Segment A13

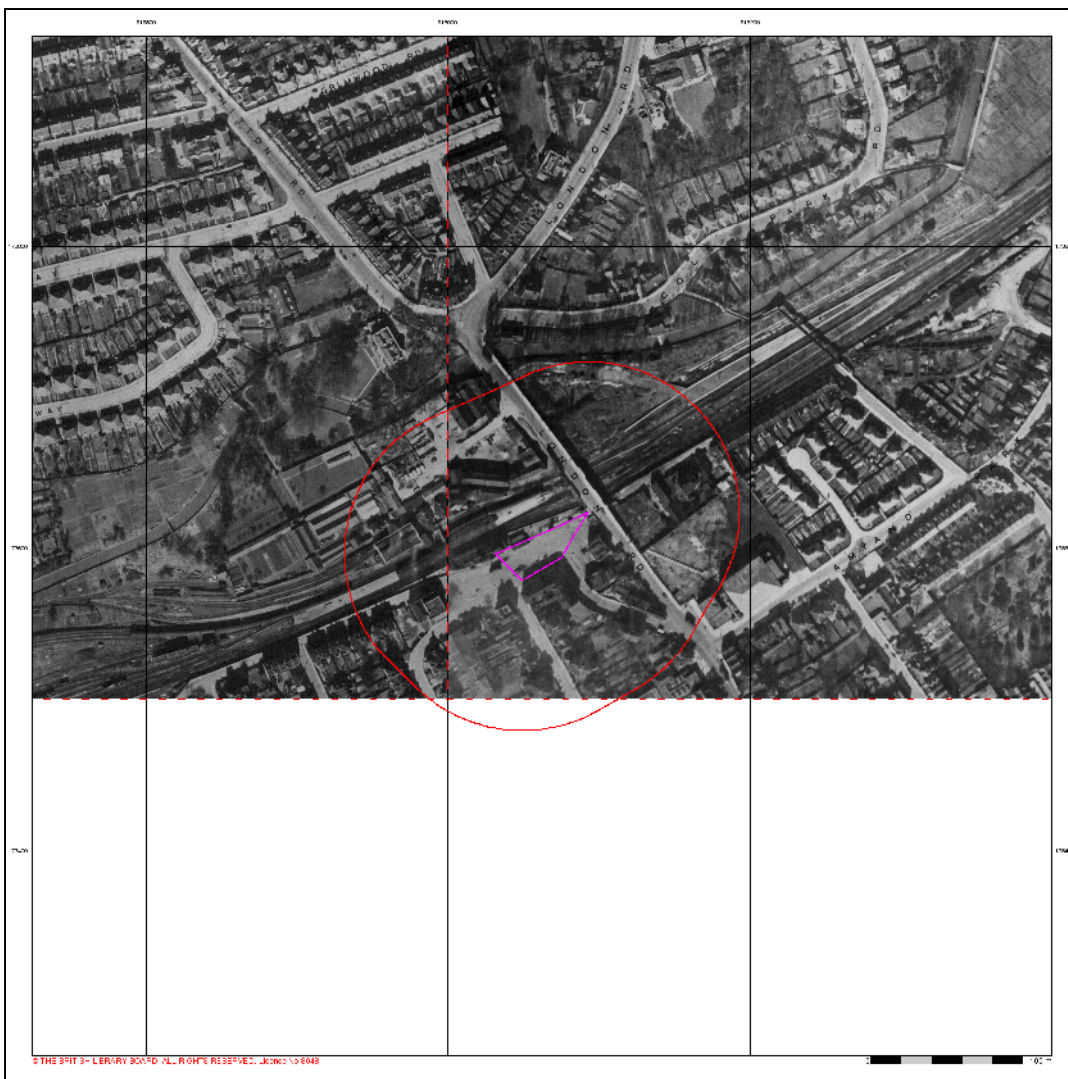
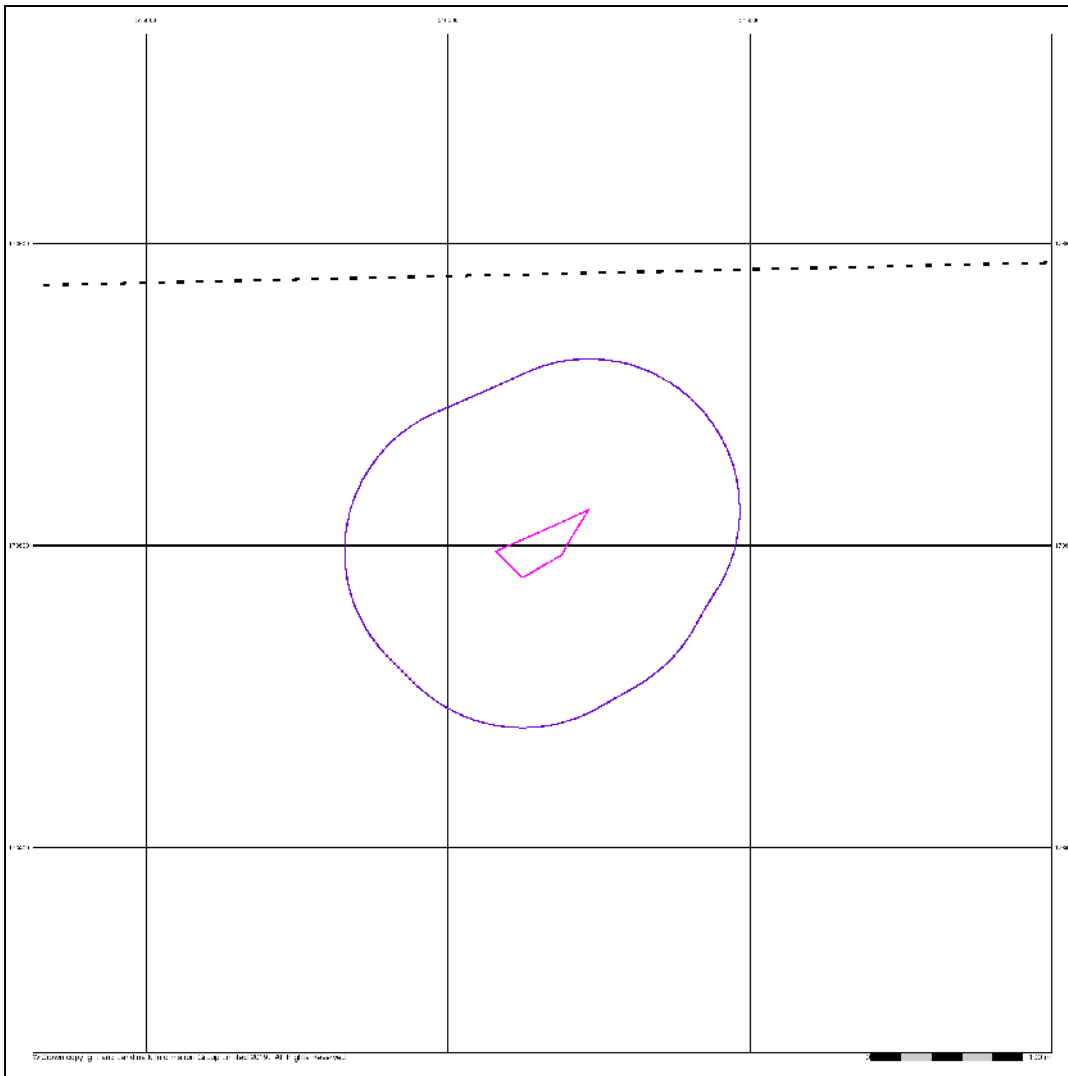


Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



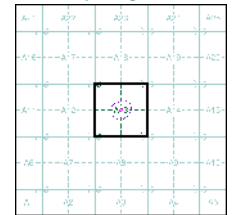
**Ordnance Survey Plan
Published 1959 - 1961
Source map scale - 1:1,250**

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)

TQ 675HE	TQ 675HW
1961	1961
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

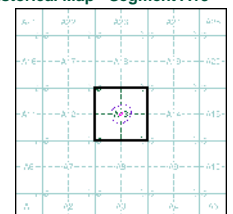
**Ordnance Survey Plan
Published 1960 - 1962
Source map scale - 1:2,500**

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)

TQ 675H	TQ 675J
1962	1962
1:2,500	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

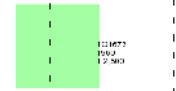
Additional SIMs

Published 1960

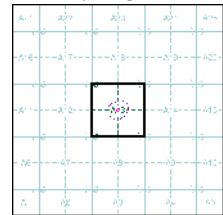
Source map scale - 1:2,500

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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

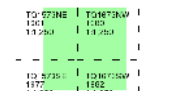
Additional SIMs

Published 1961 - 1982

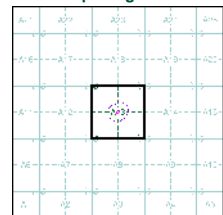
Source map scale - 1:1,250

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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

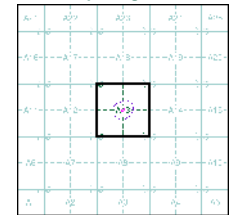
Ordnance Survey Plan
Published 1967 - 1987
Source map scale - 1:1,250

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)

TQ 675NE	TQ675NW
13 254	13 254
13 255	13 255

Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

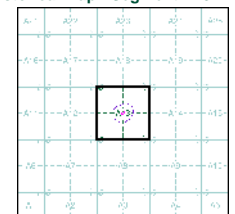
Supply of Unpublished Survey Information
Published 1973
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

TQ 675NE	TQ675NW
13 254	13 254
13 255	13 255

Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames

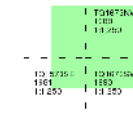
Additional SIMs

Published 1981 - 1990

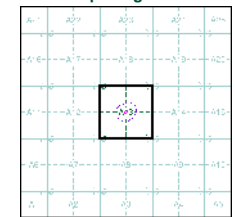
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

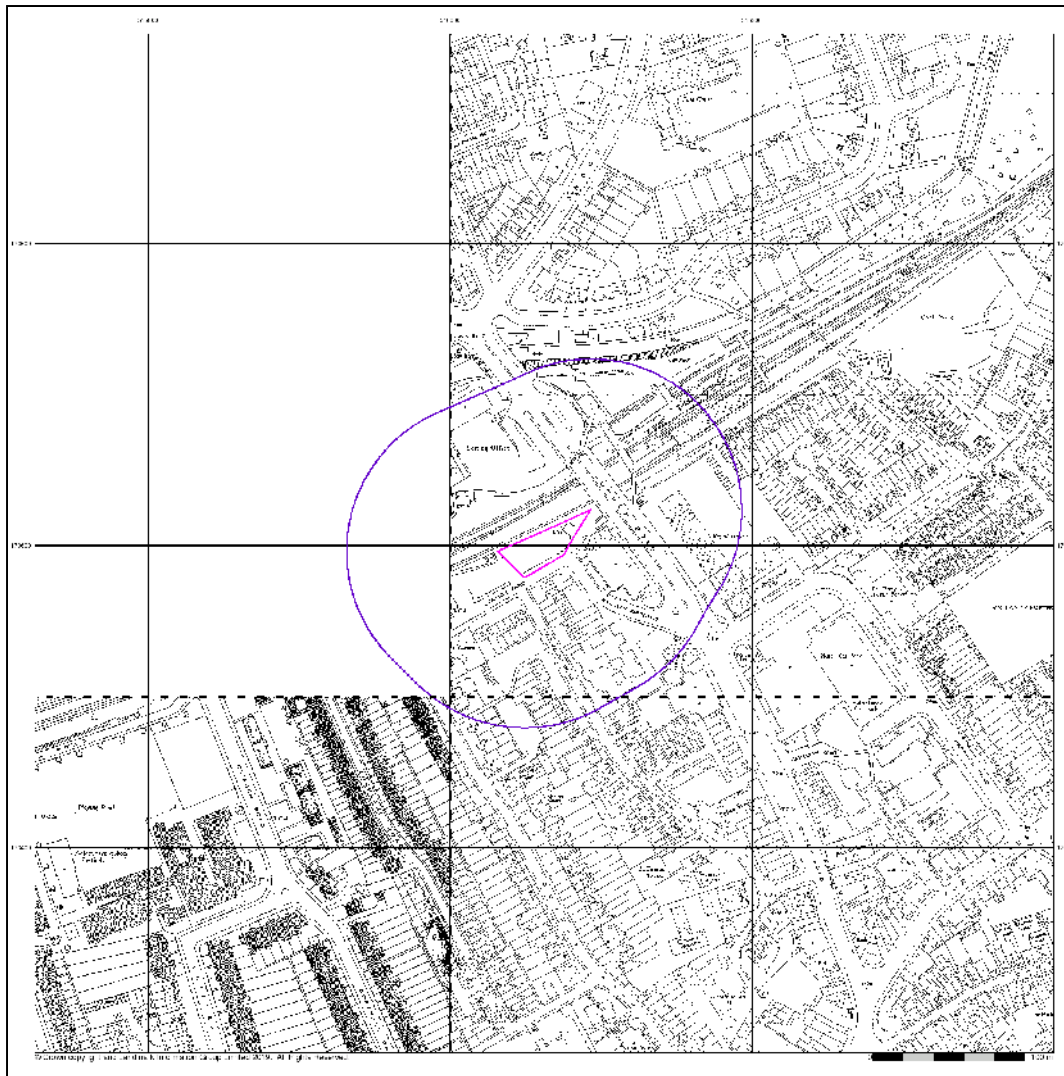
Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envisirock.co.uk



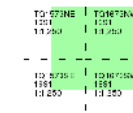
Large-Scale National Grid Data

Published 1991

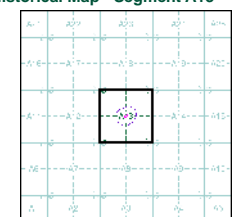
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

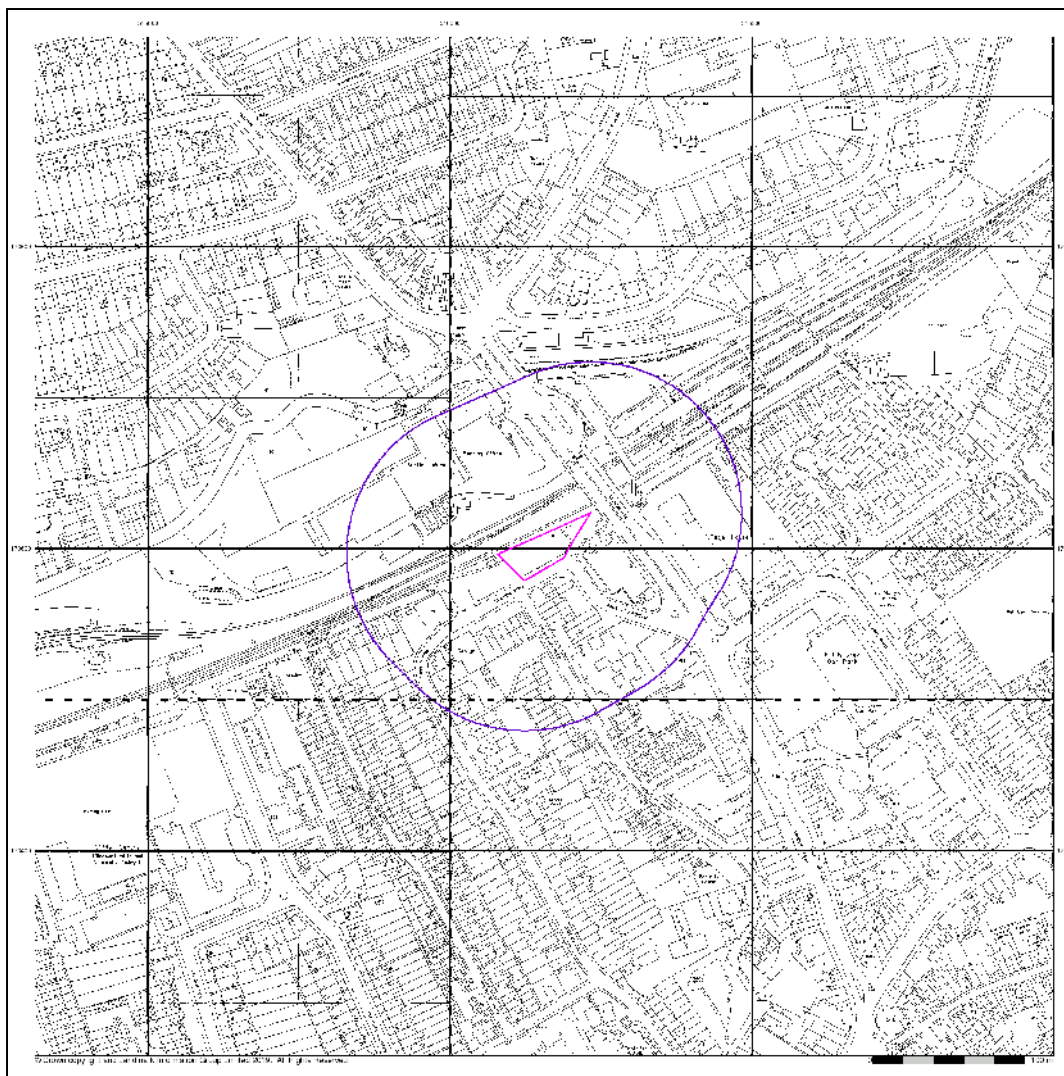
Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envisirock.co.uk



**Large-Scale National Grid Data
Published 1996**

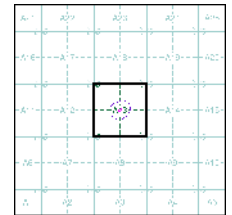
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envisirocheck.co.uk

**Large-Scale National Grid Data
Published 1996**

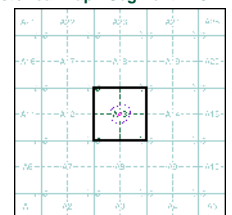
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



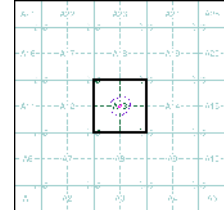
Tel: 0844 844 9962
 Fax: 0844 844 9951
 Web: www.envisirocheck.co.uk



**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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details

Site at, Twickenham, Richmond upon Thames



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

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Ordnance Survey Plan 1:10,000

1:10,000 Raster Mapping

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Dy
Middlesex	1:10,560	1869	3
Surrey	1:10,560	1871	4
London	1:10,560	1896	5
Surrey	1:10,560	1898	6
Middlesex	1:10,560	1920	7
Surrey	1:10,560	1920	8
Middlesex	1:10,560	1935	10
Surrey	1:10,560	1938	11
Middlesex	1:10,560	1938	12
Surrey	1:10,560	1938	13
Ordnance Survey Plan	1:10,000	1949	14
Historical Aerial Photography	1:10,560	1948	15
Ordnance Survey Plan	1:10,000	1960-1968	16
Ordnance Survey Plan	1:10,000	1966	17
Ordnance Survey Plan	1:10,000	1975	18
Ordnance Survey Plan	1:10,000	1985	19
Ordnance Survey Plan	1:10,000	1992	20
UK Raster Mapping	1:10,000	1999	21
UK Raster Mapping	1:10,000	2006	23
UK Raster Mapping	1:10,000	2019	24

Historical Map - Slice A

Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Site at, Twickenham, Richmond upon Thames

TEL: 0844 944 5552
 FAX: 0844 944 5551
 www.ennosch.co.uk

Russian Military Mapping Legends

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

1:25,000 mapping

Key to Numbers on Mapping

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Dy
Middlesex	1:10,560	1869	3
Surrey	1:10,560	1871	4
London	1:10,560	1896	5
Surrey	1:10,560	1898	6
Middlesex	1:10,560	1920	7
Surrey	1:10,560	1920	8
Middlesex	1:10,560	1935	10
Surrey	1:10,560	1938	11
Middlesex	1:10,560	1938	12
Surrey	1:10,560	1938	13
Ordnance Survey Plan	1:10,000	1949	14
Historical Aerial Photography	1:10,560	1948	15
Ordnance Survey Plan	1:10,000	1960-1968	16
Ordnance Survey Plan	1:10,000	1966	17
Ordnance Survey Plan	1:10,000	1975	18
Ordnance Survey Plan	1:10,000	1985	19
Ordnance Survey Plan	1:10,000	1992	20
UK Raster Mapping	1:10,000	1999	21
UK Raster Mapping	1:10,000	2006	23
UK Raster Mapping	1:10,000	2019	24

Historical Map - Slice A

Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Site at, Twickenham, Richmond upon Thames

TEL: 0844 944 5552
 FAX: 0844 944 5551
 www.ennosch.co.uk

Middlesex Published 1869

Source map scale - 1:10,560

Map Name(s) and Date(s)

Historical Map - Slice A

Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Site at, Twickenham, Richmond upon Thames

TEL: 0844 944 5552
 FAX: 0844 944 5551
 www.ennosch.co.uk

Surrey Published 1871

Source map scale - 1:10,560

Map Name(s) and Date(s)

Historical Map - Slice A

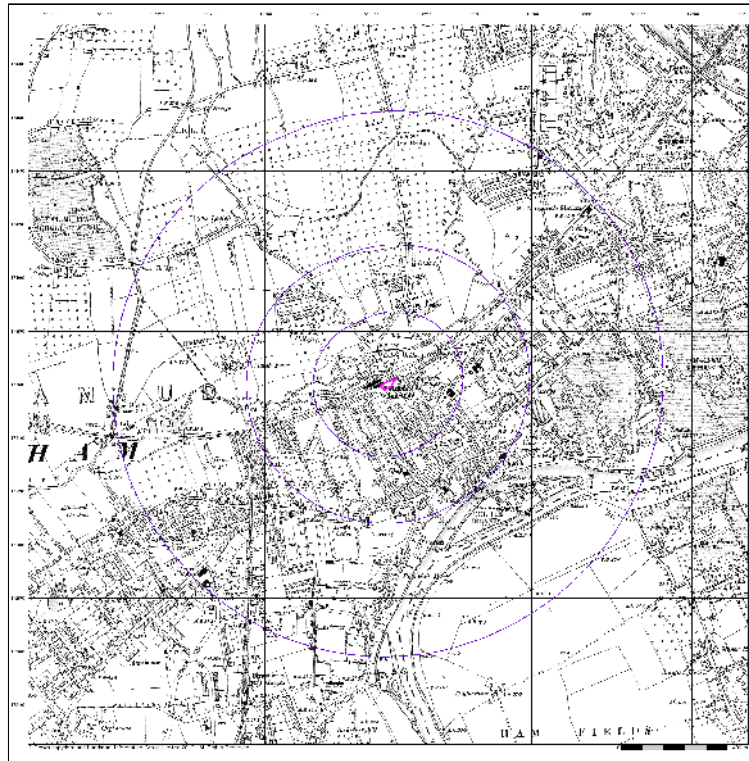
Order Details

Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Site at, Twickenham, Richmond upon Thames

TEL: 0844 944 5552
 FAX: 0844 944 5551
 www.ennosch.co.uk



Pell Frischmann

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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1973. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

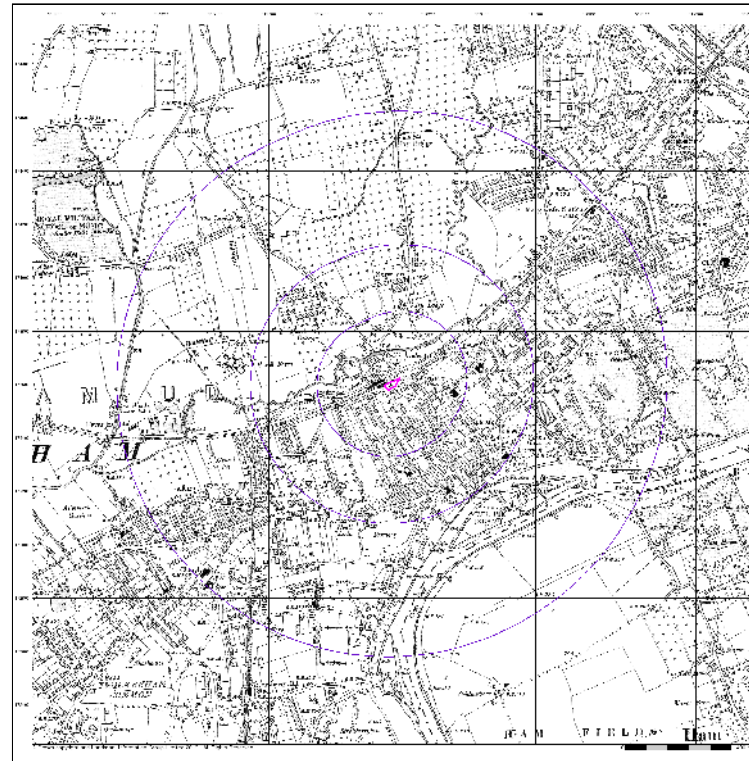
Historical Map - Slice A

Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: S10960, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 5552
 Fax: 0844 844 5551
 www.ennochack.co.uk

A Landmark Information Group Service. v50.0 03-Oct-2019 Page 5 of 24



Pell Frischmann

Surrey
Published 1898
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1973. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

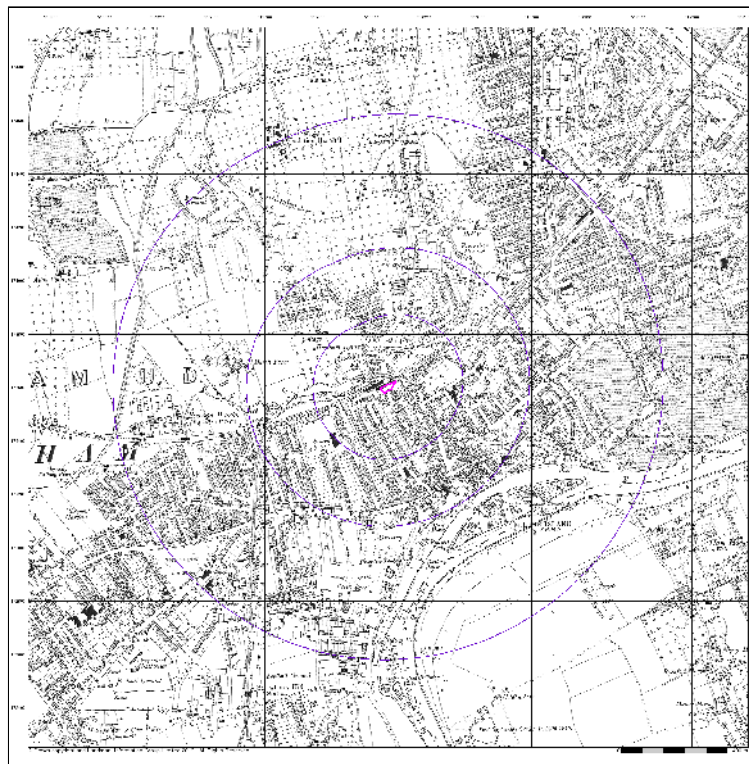
Historical Map - Slice A

Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: S10960, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 5552
 Fax: 0844 844 5551
 www.ennochack.co.uk

A Landmark Information Group Service. v50.0 03-Oct-2019 Page 6 of 24



Pell Frischmann

Middlesex
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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1973. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

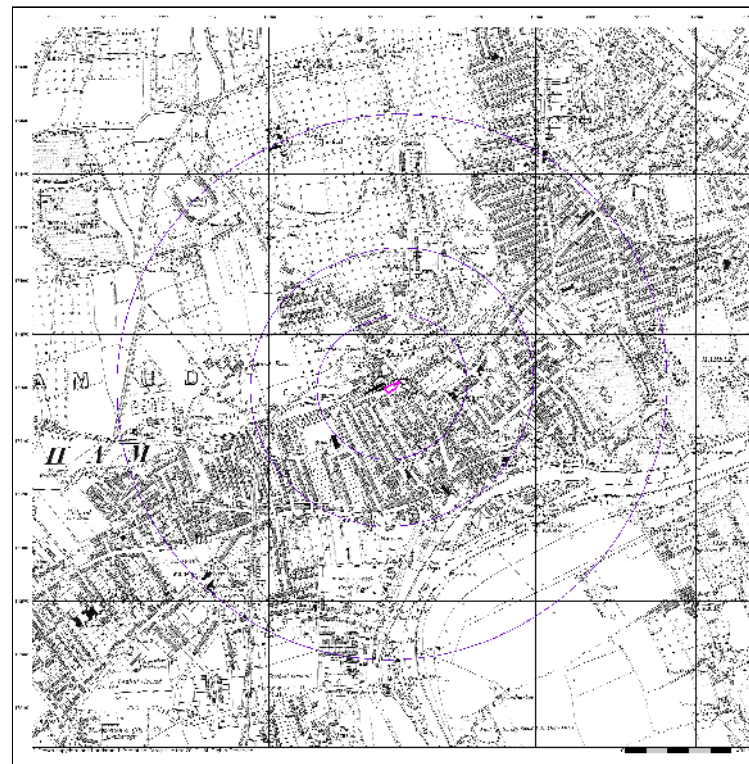
Historical Map - Slice A

Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: S10960, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 5552
 Fax: 0844 844 5551
 www.ennochack.co.uk

A Landmark Information Group Service. v50.0 03-Oct-2019 Page 7 of 24



Pell Frischmann

Surrey
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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1973. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

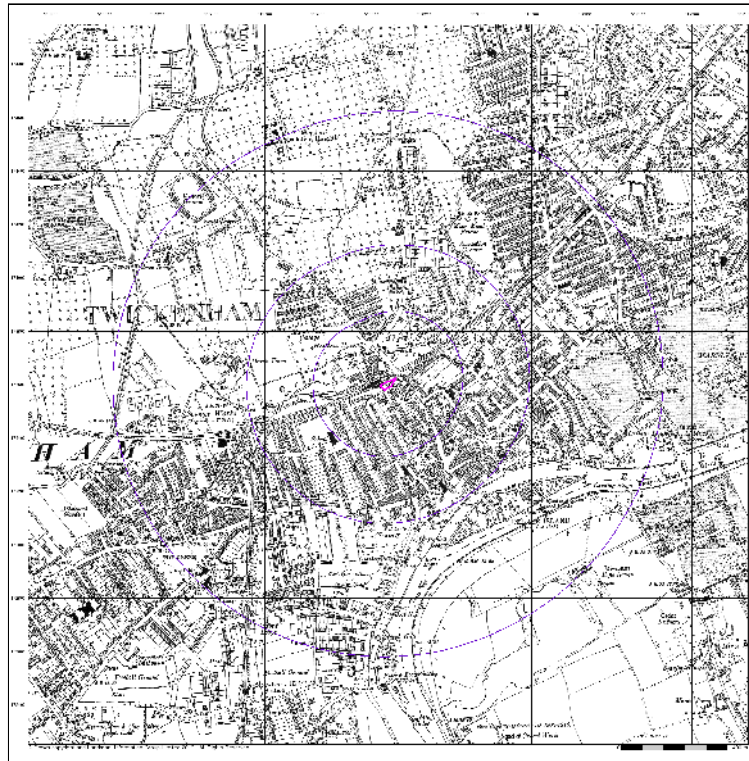
Historical Map - Slice A

Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: S10960, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 844 5552
 Fax: 0844 844 5551
 www.ennochack.co.uk

A Landmark Information Group Service. v50.0 03-Oct-2019 Page 8 of 24



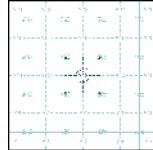
Surrey
Published 1933
Source map scale - 1:10,560

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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unframed - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid in 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

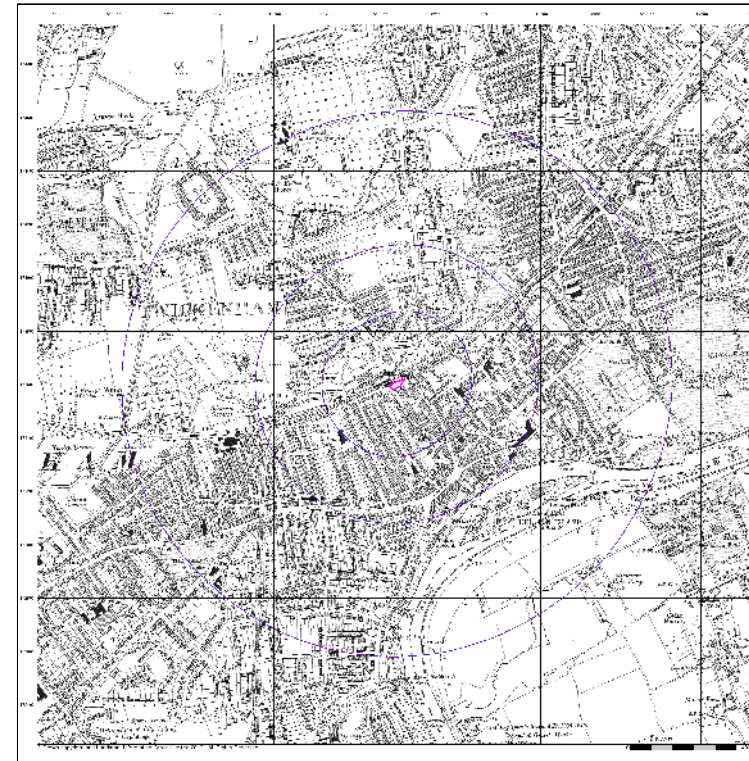


Historical Map - Slice A



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 515096, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



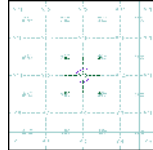
Middlesex
Published 1935
Source map scale - 1:10,560

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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unframed - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid in 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition 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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 515096, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



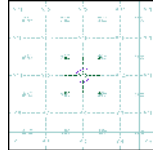
Surrey
Published 1938
Source map scale - 1:10,560

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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unframed - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid in 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

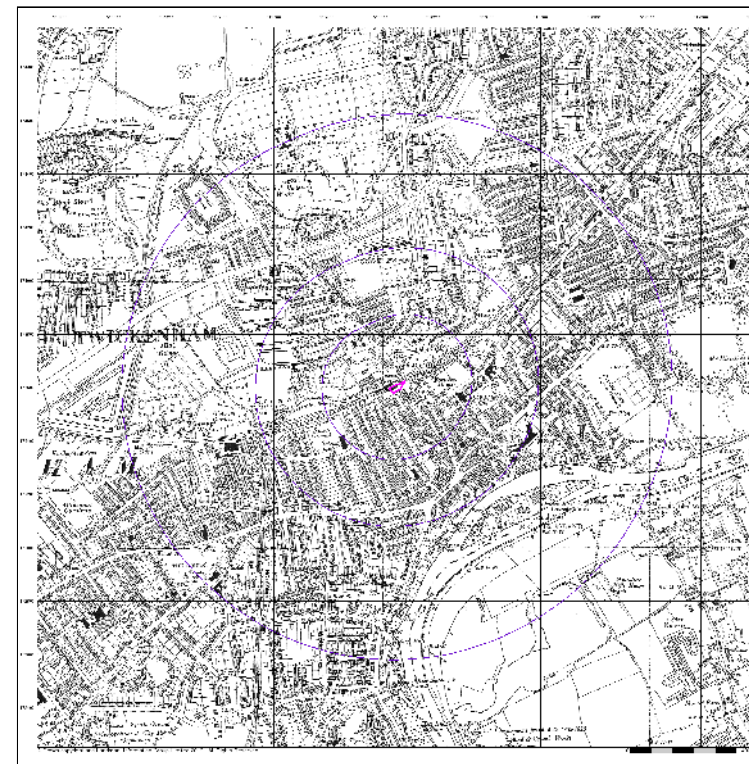


Historical Map - Slice A



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 515096, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



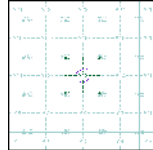
Middlesex
Published 1938
Source map scale - 1:10,560

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 1:2,000 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 varying 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 unframed - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid in 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition 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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 515096, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



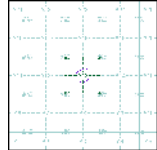
Surrey
Published 1938
Source map scale - 1:10,560

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 data 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 surveying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1970. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

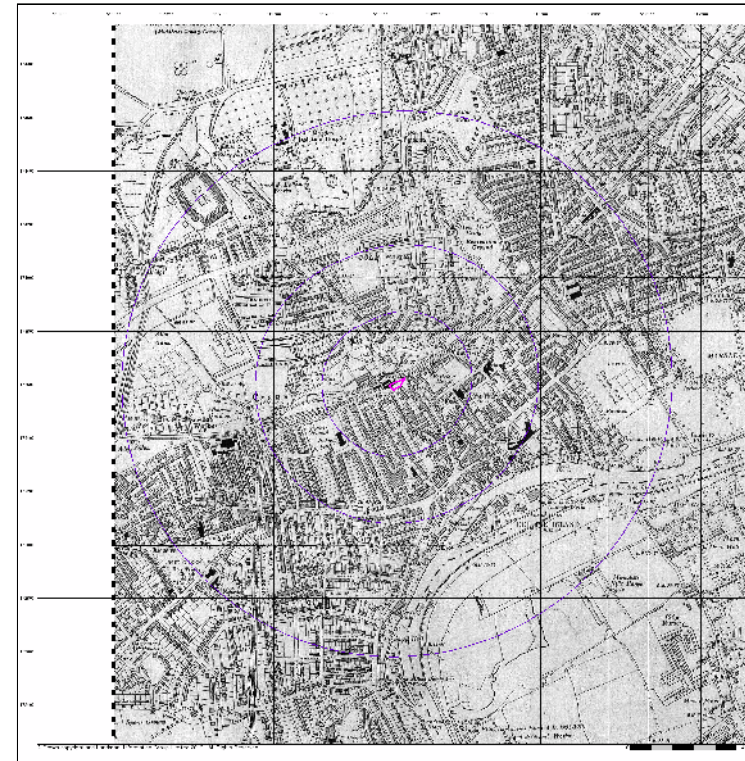


Historical Map - Slice A



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



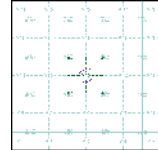
Ordnance Survey Plan
Published 1940
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 surveying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1970. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition 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: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



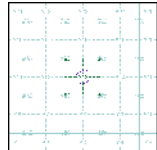
Historical Aerial Photography
Published 1948
Source map scale - 1:10,560

The historical Aerial Photography reproduced 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 1950s required that aerial photography be checked for potentially sensitive 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 losing both images it is not able to spot the edits. Where available Landmark have included both versions.

Map Name(s) and Date(s)

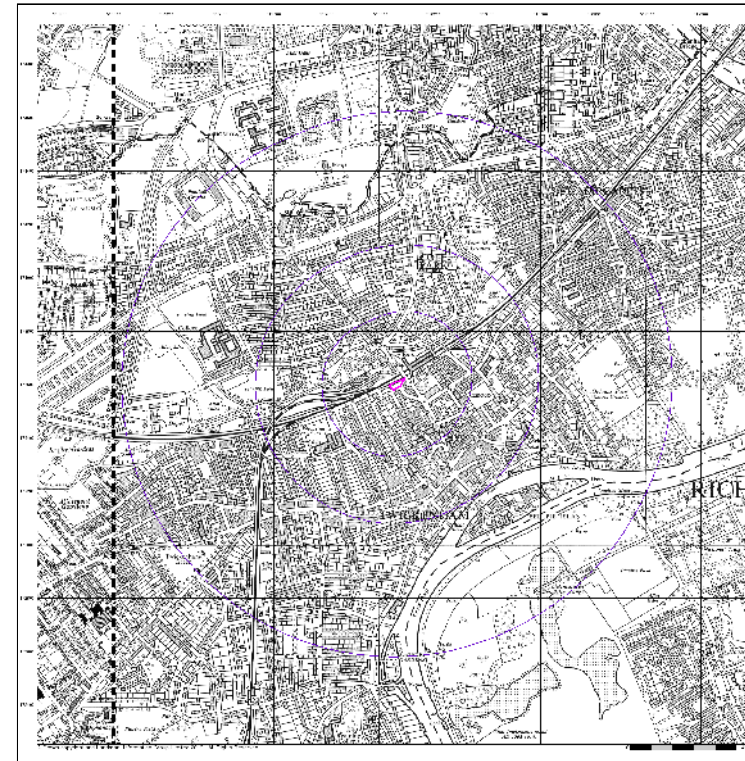


Historical Aerial Photography - Slice A



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



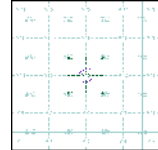
Ordnance Survey Plan
Published 1960 - 1966
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data 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 surveying 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 unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid with the National Grid in 1970. The first 1:10,000 maps were produced using the Transverse Mercator Projection. The edition process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

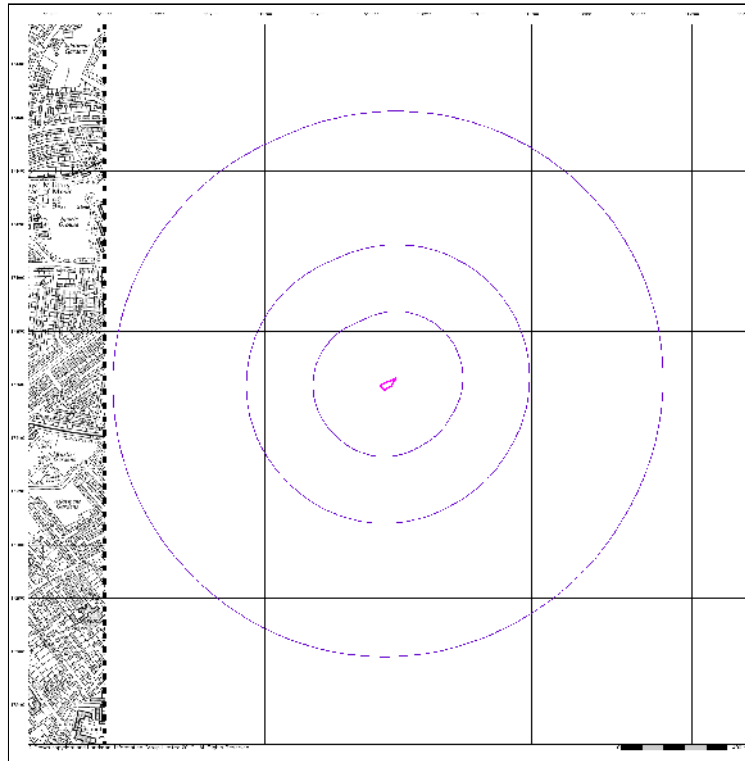


Historical Map - Slice A



Order Details
 Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at, Twickenham, Richmond upon Thames



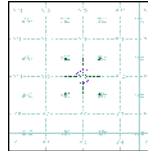
**Ordnance Survey Plan
Published 1966**
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,000 maps. The published data 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 varying areas. In the late 1940's a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfractured - with all military camps and other strategic sites removed. These maps were initially overlaid 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)

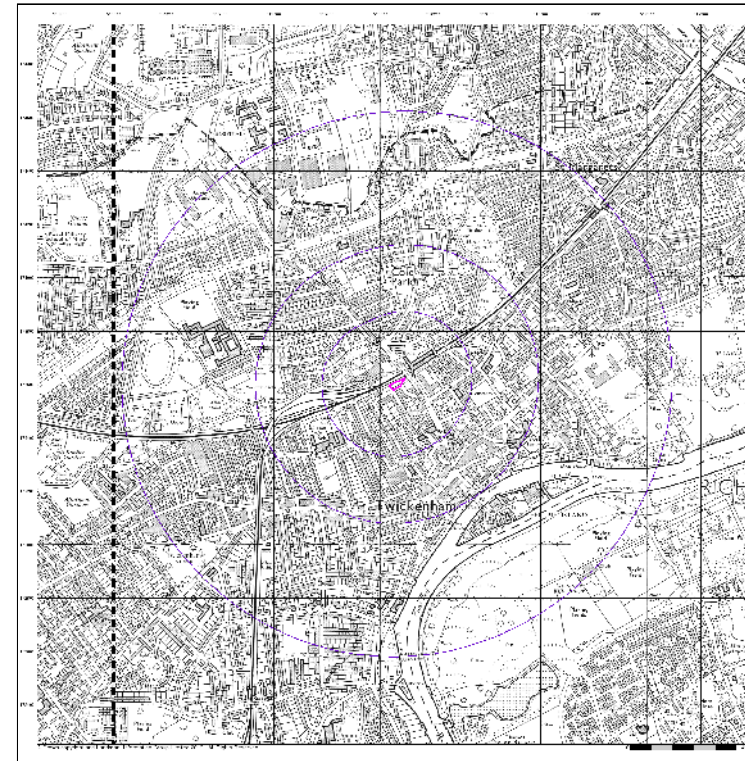
100 100
100 100
100 100

Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at, Twickenham, Richmond upon Thames



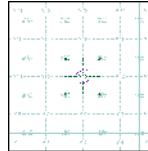
**Ordnance Survey Plan
Published 1975**
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,000 maps. The published data 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 varying areas. In the late 1940's a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfractured - with all military camps and other strategic sites removed. These maps were initially overlaid 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)

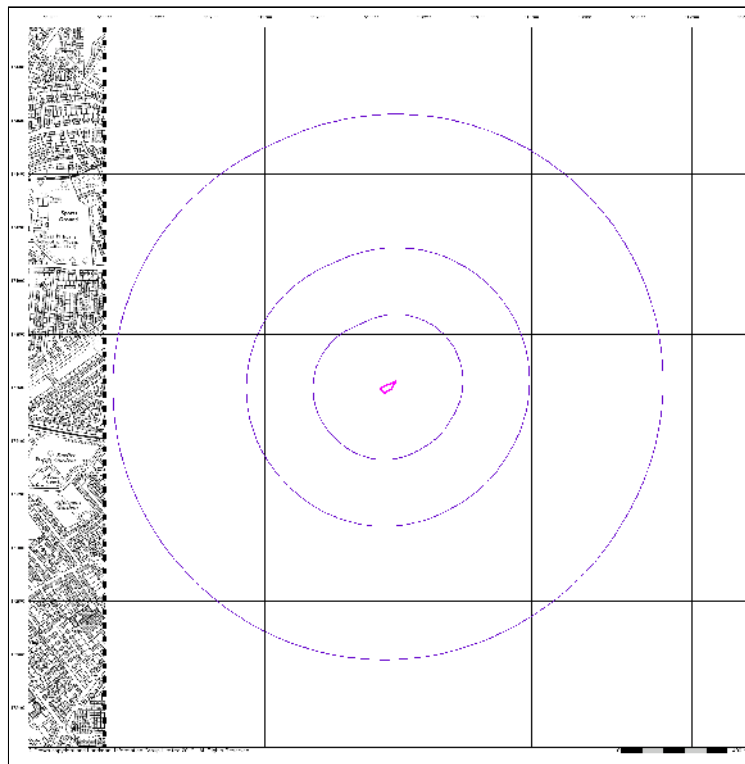
100 100
100 100
100 100

Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at, Twickenham, Richmond upon Thames



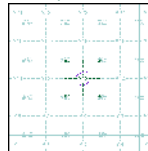
**Ordnance Survey Plan
Published 1985**
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,000 maps. The published data 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 varying areas. In the late 1940's a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfractured - with all military camps and other strategic sites removed. These maps were initially overlaid 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)

100 100
100 100
100 100

Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at, Twickenham, Richmond upon Thames



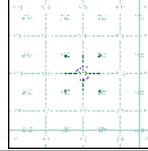
**London
Published 1985**
Source map scale - 1:25,000

This historical map was produced by the Russian military during the Cold War between 1950 and 1987, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:50,000 and 1:100,000 scales, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are colour-coded and important buildings such as hospitals, post offices, factories etc) are numbered, with a numbered key describing their use. They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the case that are mapped.

Map Name(s) and Date(s)

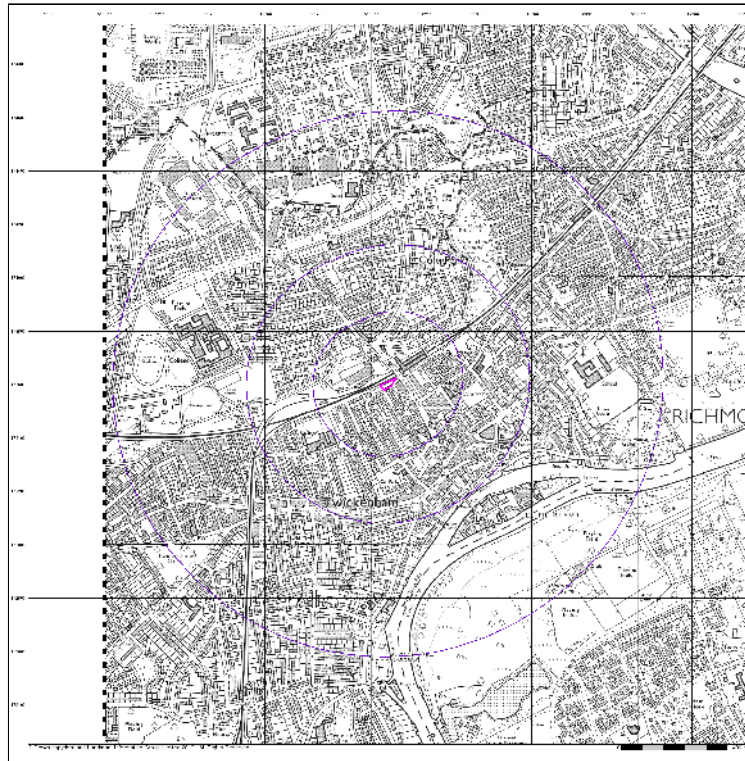
100 100
100 100
100 100

Russian Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 516060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

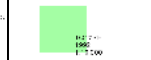
Site Details
Site at, Twickenham, Richmond upon Thames



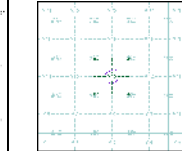
**Ordnance Survey Plan
Published 1992
Source map scale - 1:10,000**

The historical maps were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:25,000 maps were produced from the original data. These maps were used to update the 1:10,000 maps. The published data 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 varying areas. In the late 1940's a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfractured - with all military camps and other strategic sites removed. These maps were finally overlaid 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)

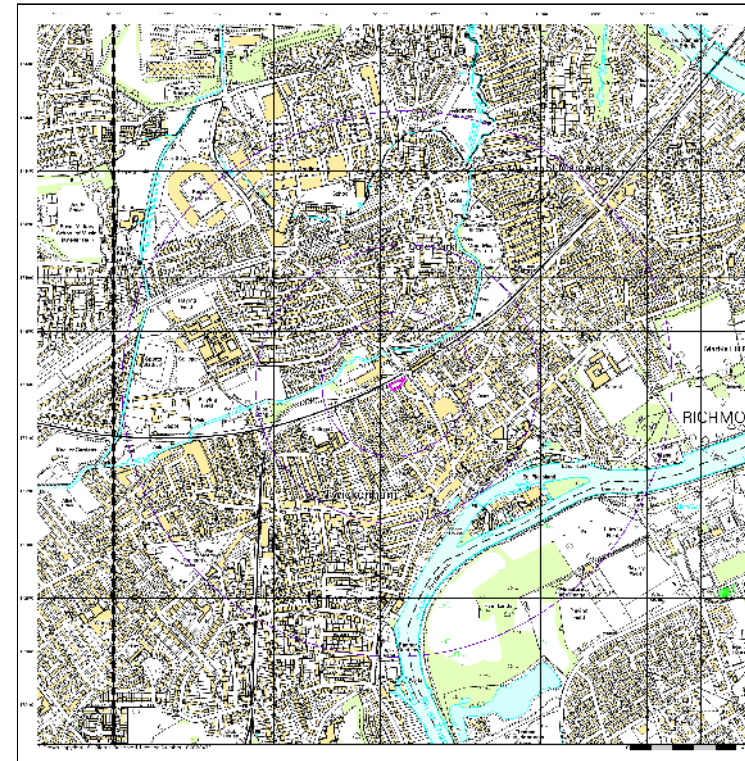


Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 515060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at: Twickenham, Richmond upon Thames



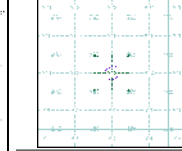
**10k Raster Mapping
Published 1999
Source map scale - 1:10,000**

The historical maps were reproduced from the higher detailed Ordnance Survey's 1:10,000 colour raster mappings. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The maps are 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 depicts includes county, unitary authority, district, civil parishes and consistency.

Map Name(s) and Date(s)

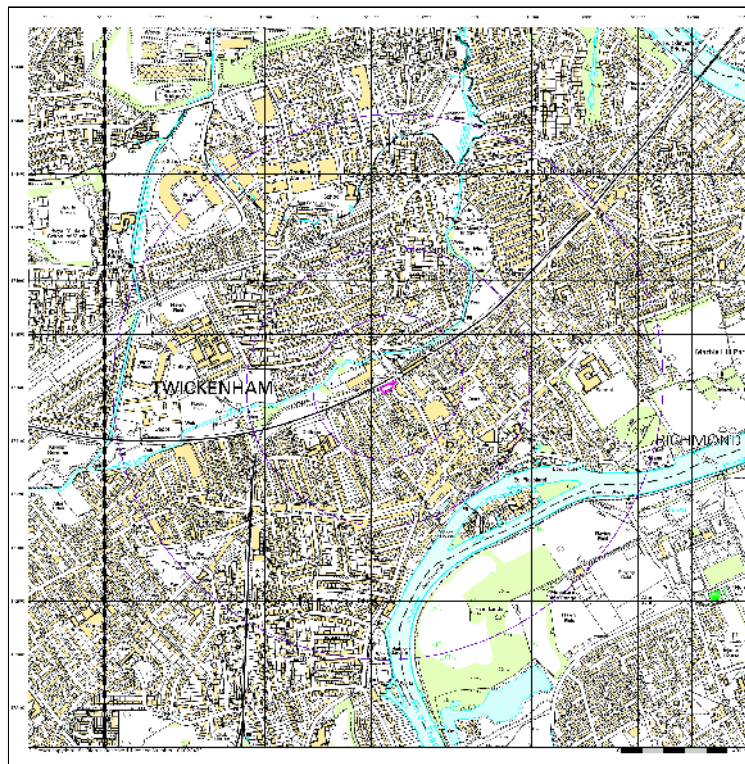


Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 515060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at: Twickenham, Richmond upon Thames



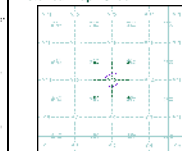
**10k Raster Mapping
Published 2006
Source map scale - 1:10,000**

The historical maps were reproduced from the Ordnance Survey's 1:10,000 colour raster mappings. 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 depicts includes county, unitary authority, district, civil parishes and consistency.

Map Name(s) and Date(s)

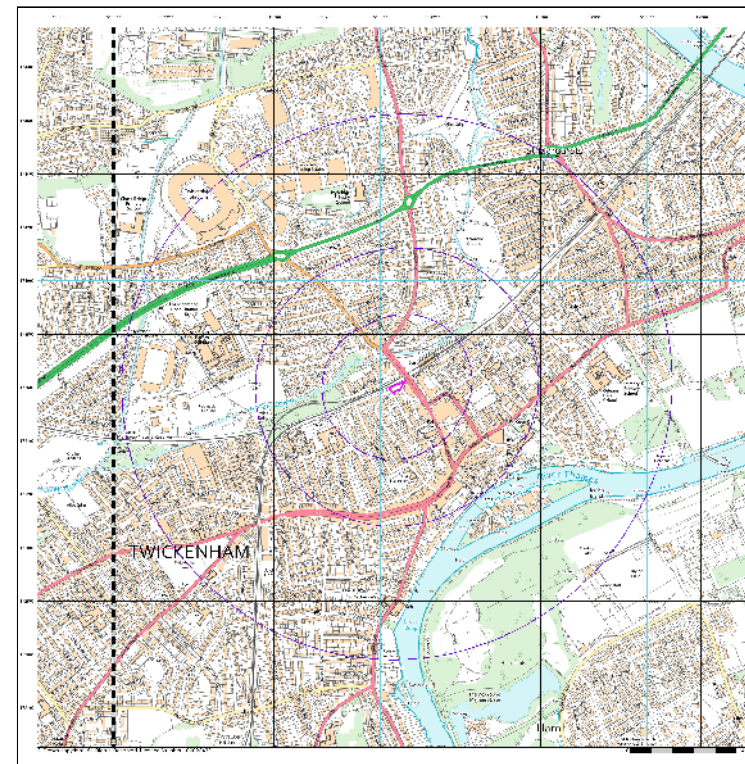


Historical Map - Slice A



Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 515060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at: Twickenham, Richmond upon Thames



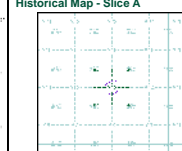
**VectorMap Local
Published 2019
Source map scale - 1:10,000**

The historical maps were reproduced from the higher detailed boundary mapping product. These maps are produced from OS's VectorMap Local, a vector-based data set 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 digital data which has been gathered at a 1:250 scale (covering major towns and cities), 1:25,000 scale (smaller towns, villages and developed rural areas), and 1:100,000 scale (mountains, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A

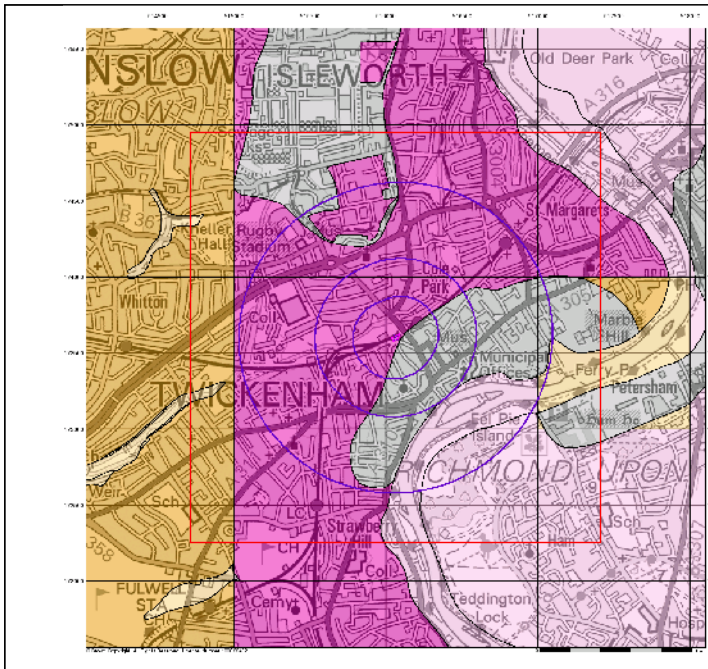


Order Details
Order Number: 220173317_1_1
Customer Ref: 102135
National Grid Reference: 515060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at: Twickenham, Richmond upon Thames

Appendix B

Envirocheck Datasheets and Plans



Pell Frischmann

Groundwater Vulnerability

General
 [Symbol] [Symbol] [Symbol] [Symbol]

Agency and Hydrogeological

Bedrock Types:
 [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

Superficial Aquifers:
 [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

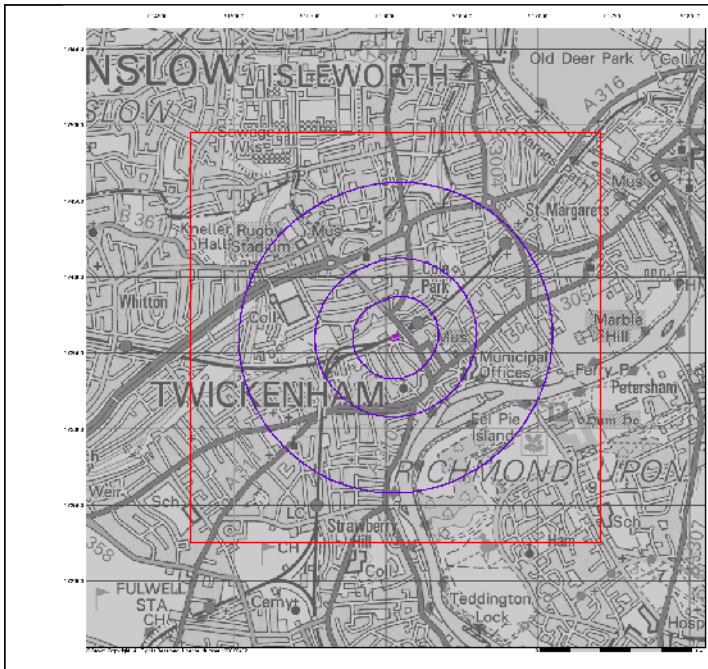
Site Sensitivity Context Map - Slice A

Order Details
 Order Number: 220173317_1.1
 Customer Ref: 102135
 National Grid Reference: 510600, 179600
 Slice: A
 Site Area (ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 649322
 Fax: 0844 649321
 Web: www.landmark.co.uk

A Landmark Information Group Service v15.0 03-Oct-2019 Page 1 of 6



Pell Frischmann

Bedrock Aquifer Designation

General
 [Symbol] [Symbol] [Symbol] [Symbol]

Agency and Hydrogeological

Bedrock Classes:
 [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

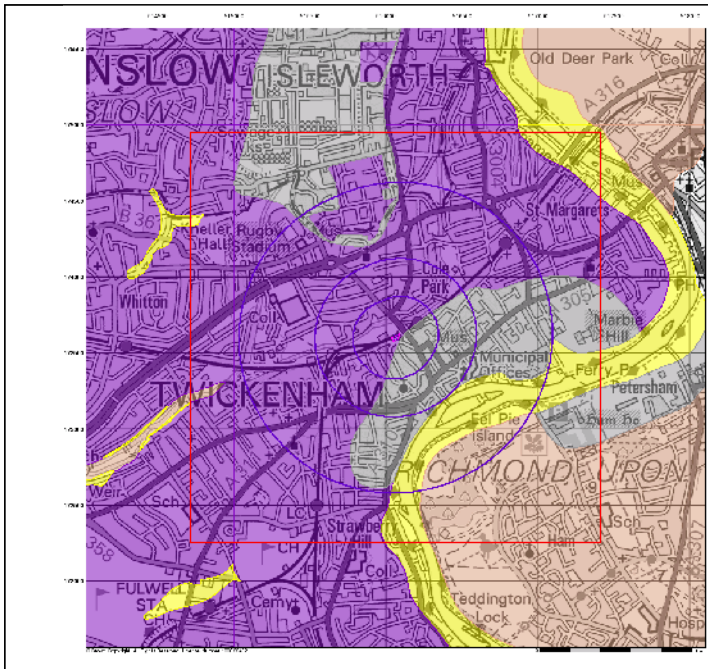
Site Sensitivity Context Map - Slice A

Order Details
 Order Number: 220173317_1.1
 Customer Ref: 102135
 National Grid Reference: 510600, 179600
 Slice: A
 Site Area (ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 649322
 Fax: 0844 649321
 Web: www.landmark.co.uk

A Landmark Information Group Service v15.0 03-Oct-2019 Page 2 of 6



Pell Frischmann

Superficial Aquifer Designation

General
 [Symbol] [Symbol] [Symbol] [Symbol]

Agency and Hydrogeological

Bedrock Classes:
 [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

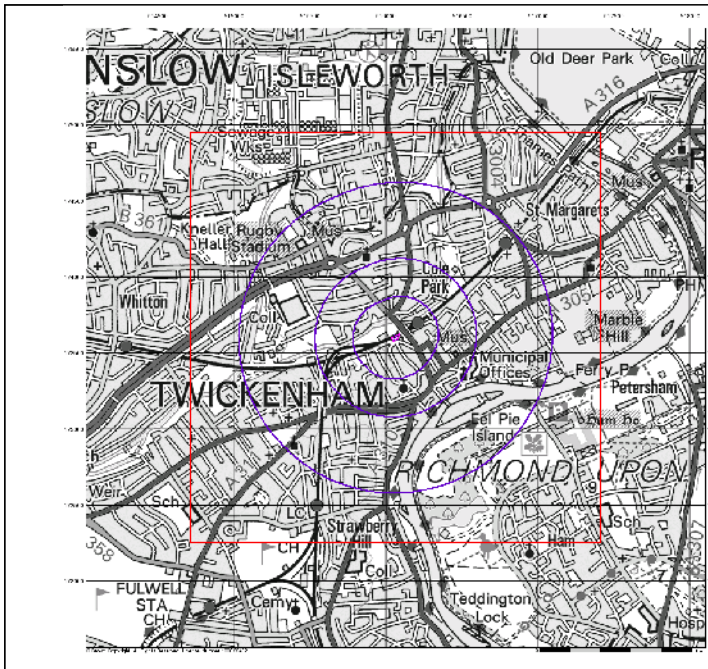
Site Sensitivity Context Map - Slice A

Order Details
 Order Number: 220173317_1.1
 Customer Ref: 102135
 National Grid Reference: 510600, 179600
 Slice: A
 Site Area (ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 649322
 Fax: 0844 649321
 Web: www.landmark.co.uk

A Landmark Information Group Service v15.0 03-Oct-2019 Page 3 of 6



Pell Frischmann

Source Protection Zones

General
 [Symbol] [Symbol] [Symbol] [Symbol]

Agency and Hydrogeological

Source Protection Zones:
 [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

Site Sensitivity Context Map - Slice A

Order Details
 Order Number: 220173317_1.1
 Customer Ref: 102135
 National Grid Reference: 510600, 179600
 Slice: A
 Site Area (ha): 0.11
 Search Buffer (m): 1000

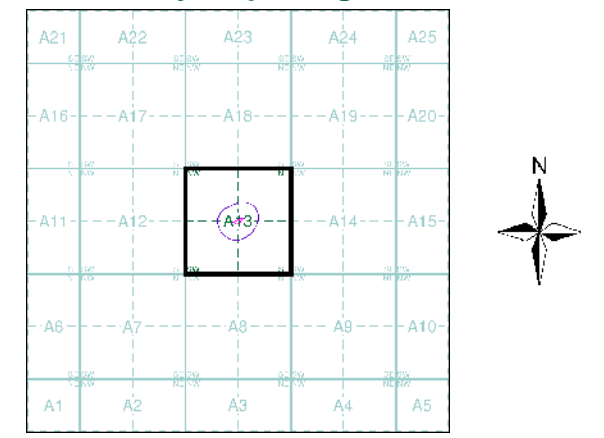
Site Details
 Site at Twickenham, Richmond upon Thames

Landmark
 Tel: 0844 649322
 Fax: 0844 649321
 Web: www.landmark.co.uk

A Landmark Information Group Service v15.0 03-Oct-2019 Page 4 of 6

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

Site Sensitivity Map - Segment A13



Order Details

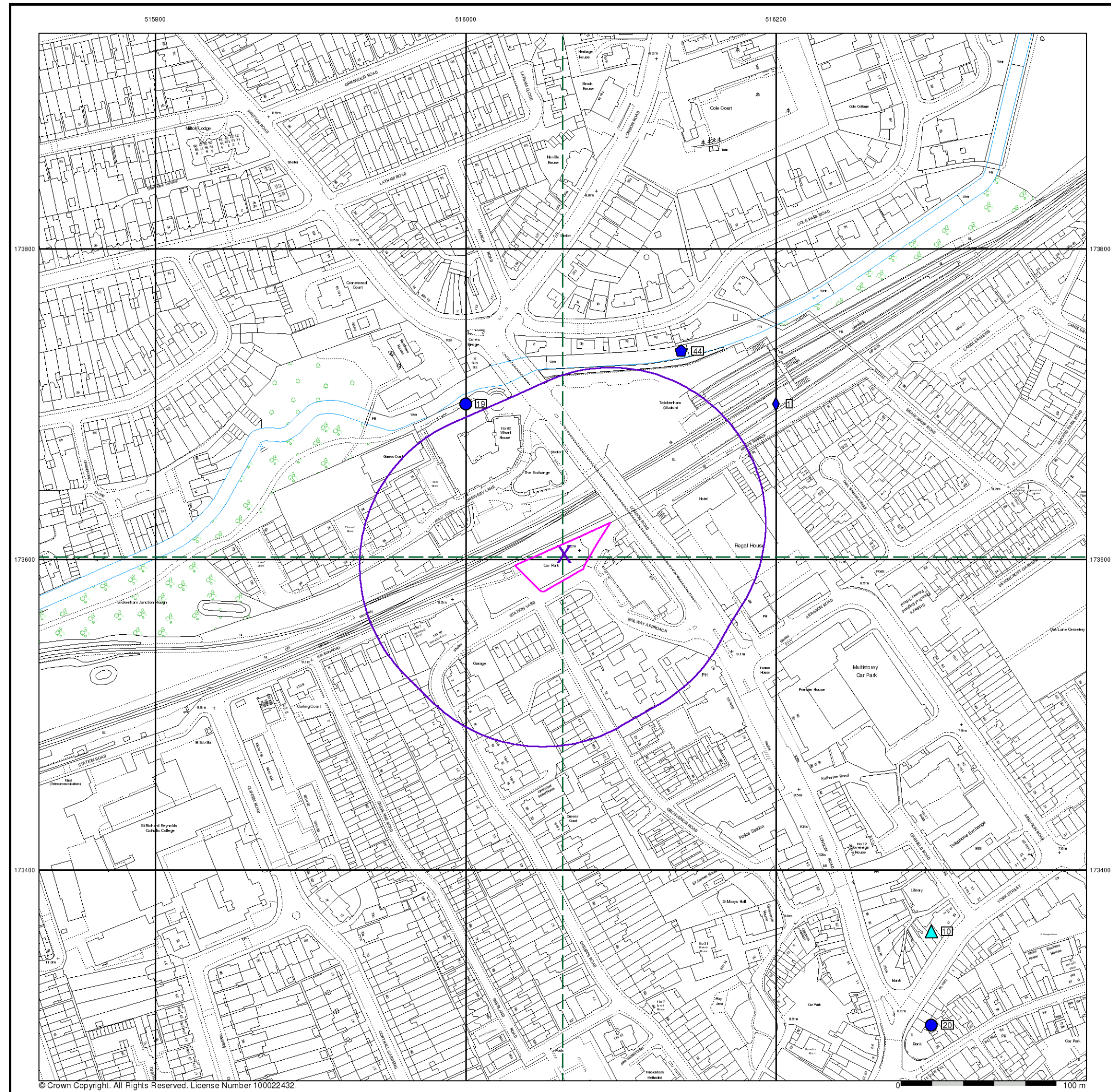
Order Number: 220173317_1_1
 Customer Ref: 102135
 National Grid Reference: 516060, 173600
 Slice: A
 Site Area (Ha): 0.11
 Plot Buffer (m): 100

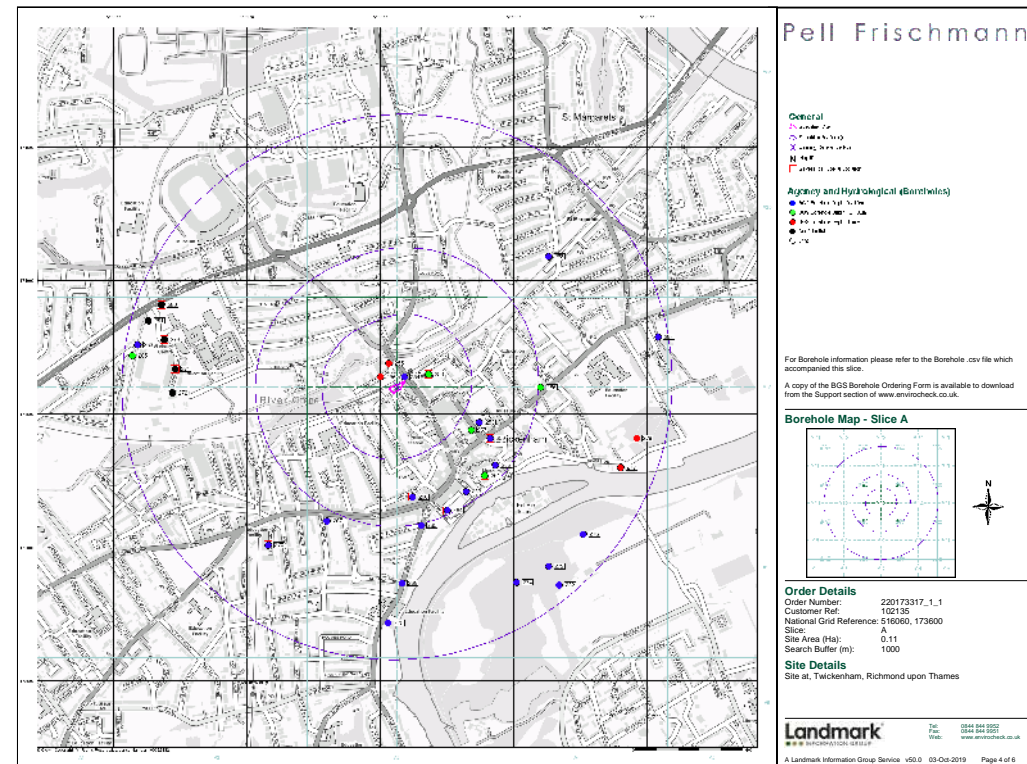
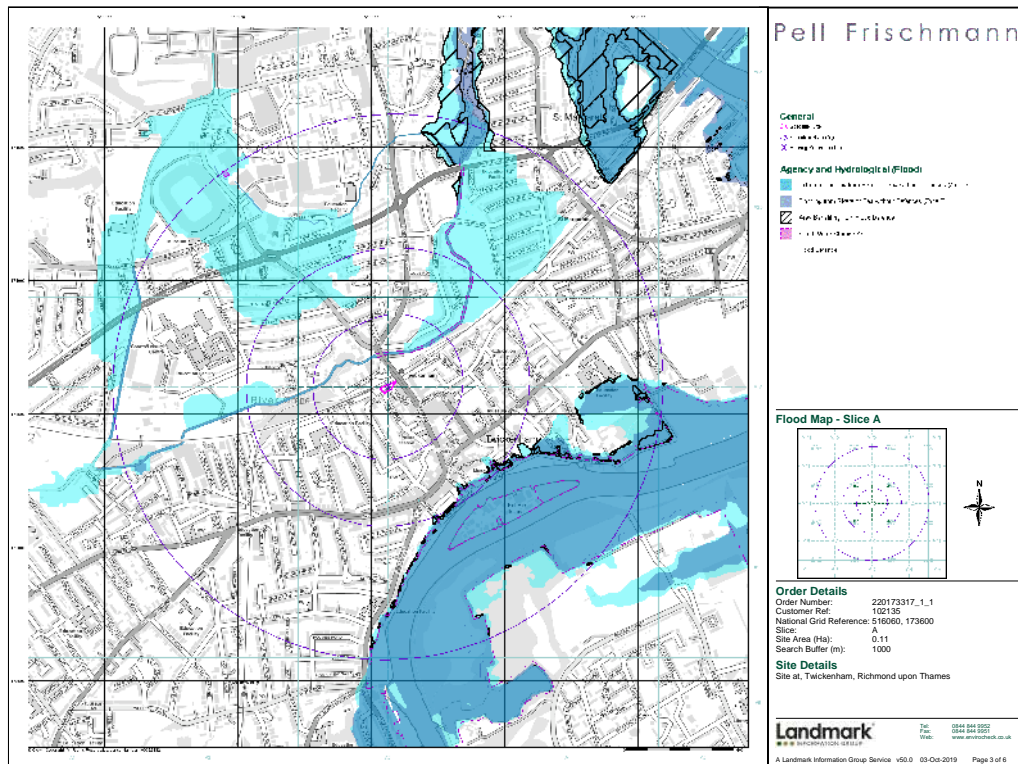
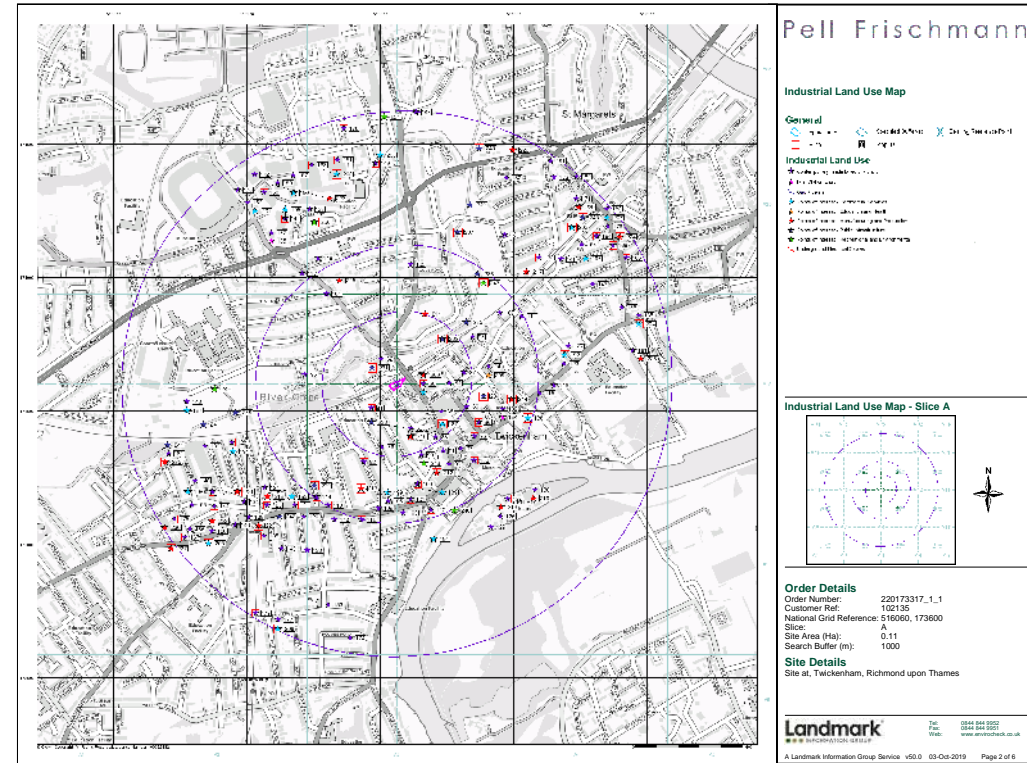
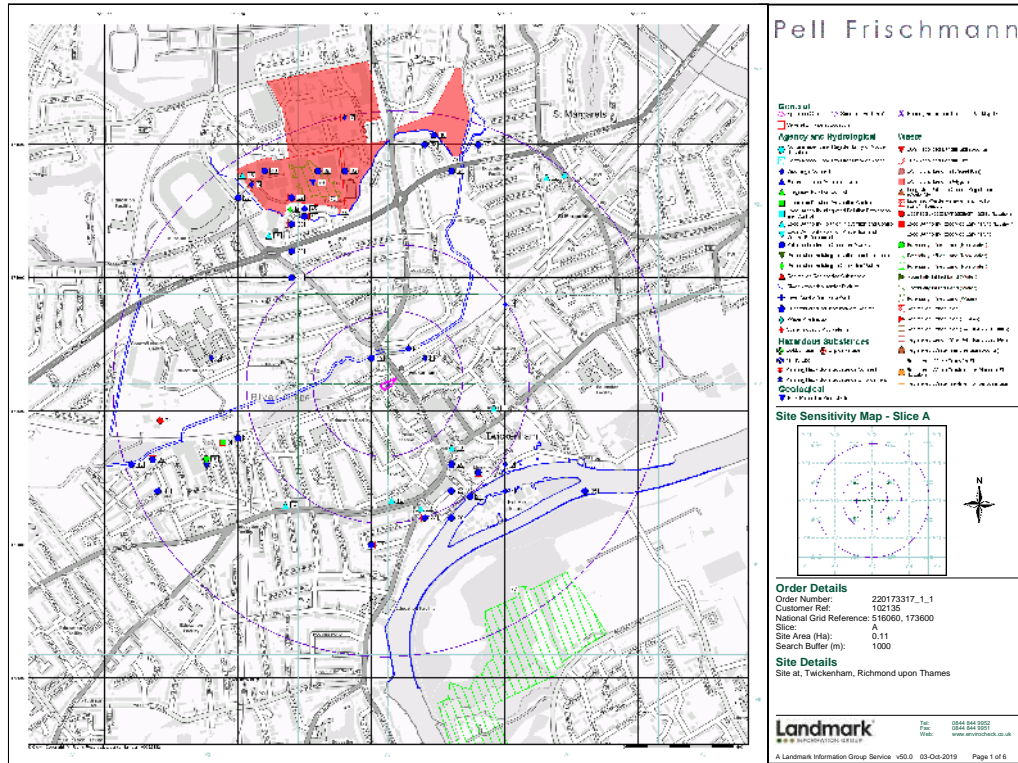
Site Details

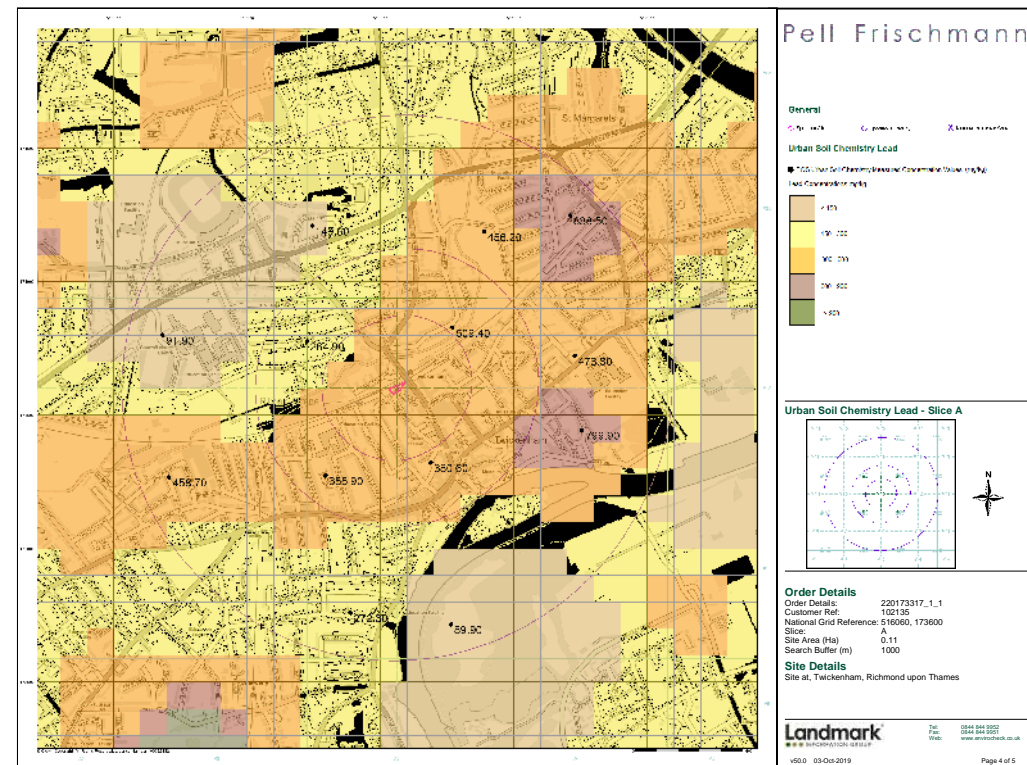
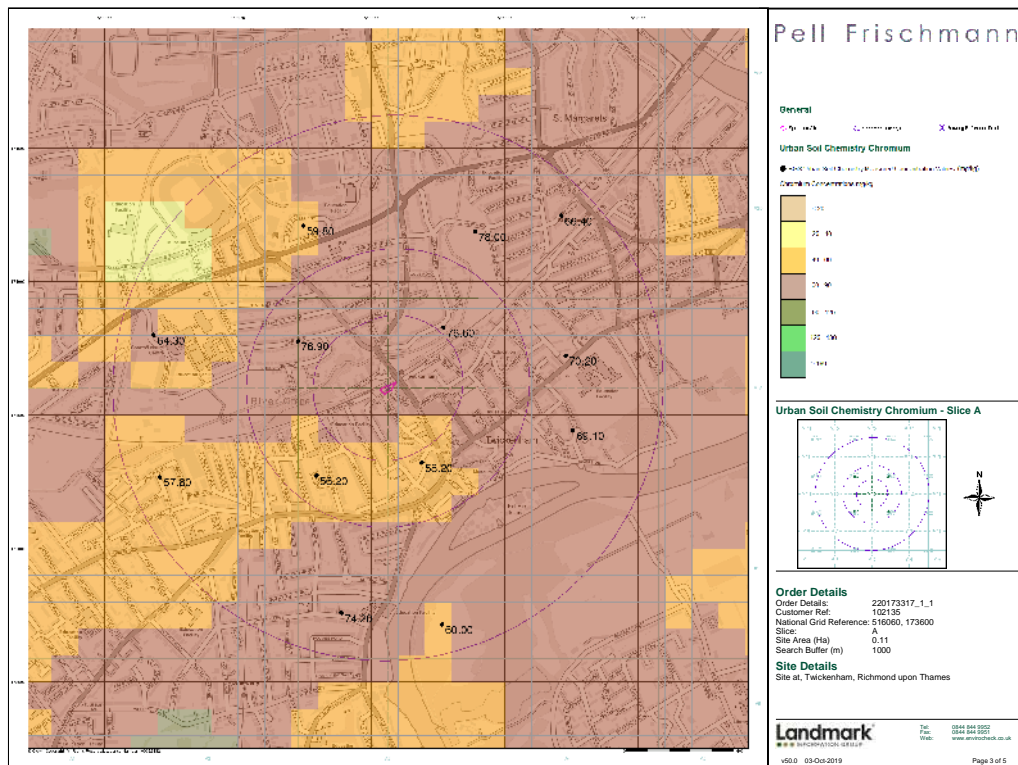
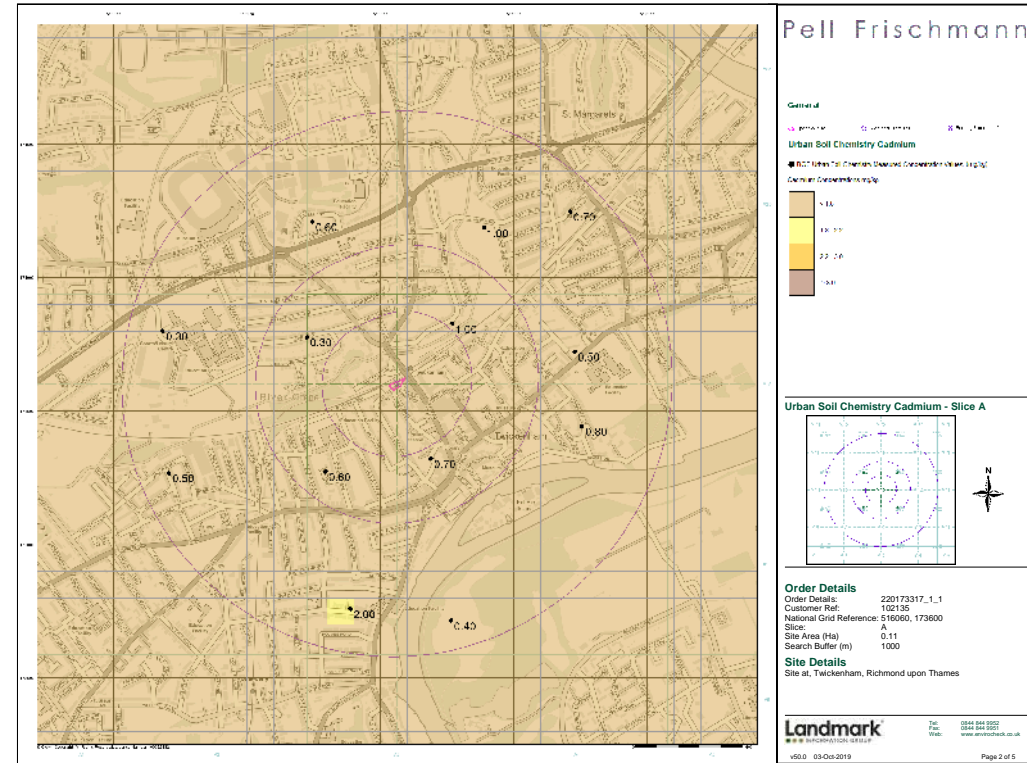
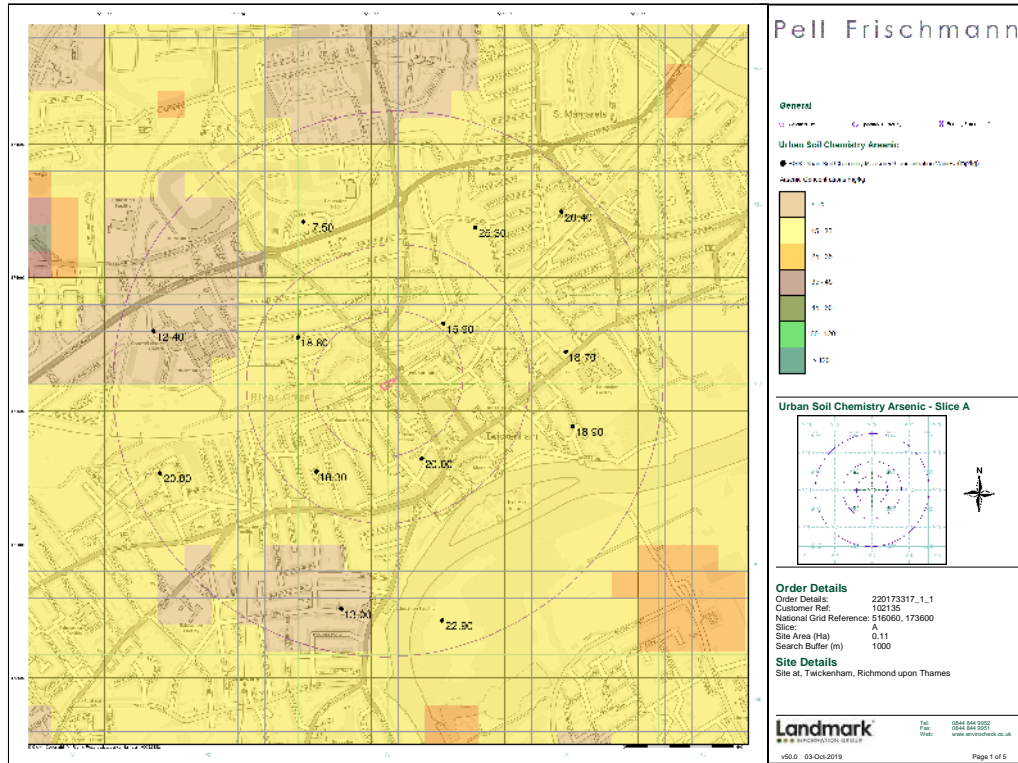
Site at, Twickenham, Richmond upon Thames

Landmark
 INFORMATION GROUP

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







General
● Urban Soil Chemistry Nickel

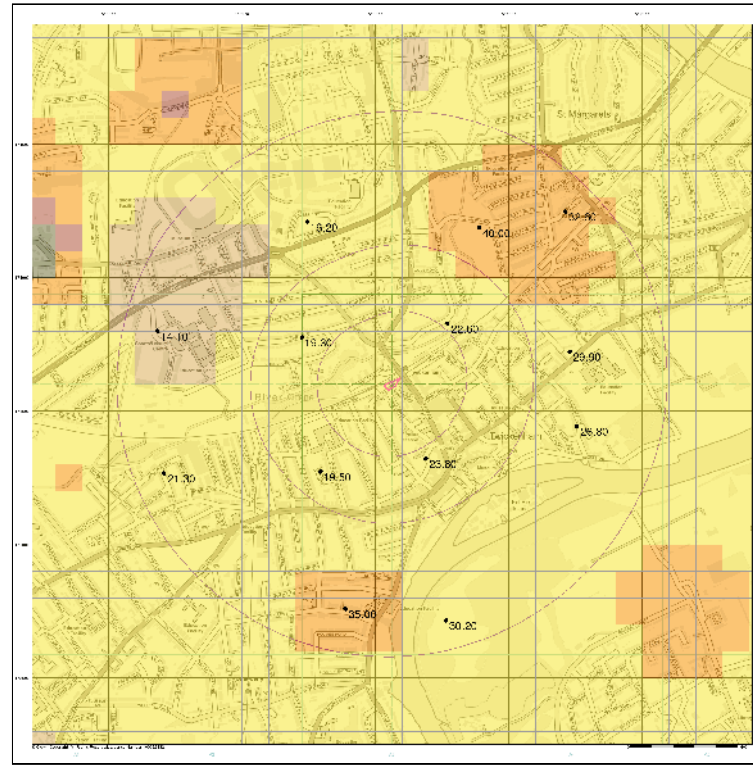
Urban Soil Chemistry Nickel
● UCC Data (Soil Chemistry Nickel) (Data only) (UCC) (Soil Chemistry Nickel) (Data only) (UCC) (Soil Chemistry Nickel) (Data only) (UCC)

0-10
11-20
21-30
31-40
41-50
51-60
61-70
71-80
81-90
91-100

Urban Soil Chemistry Nickel - Slice A

Order Details
Order Details: 220173317_1_1
Customer Ref: 102135
National Grid Reference: S16060, 173600
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details
Site at, Twickenham, Richmond upon Thames



Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Unfilled)	Artificial Deposit	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Unfilled)	Void	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
	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
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

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

Pell Frischmann

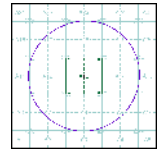
Geology 1:50,000 Maps

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 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: 278
Map Sheet No: 278
Map Name: South London
Map Date: 1998
Bedrock Geology: Available
Superficial Geology: Available
Artificial Geology: Not Supplied
Faults: Available
Landslips: Available
Rock Segments: Not Supplied

Geology 1:50,000 Maps - Slice A



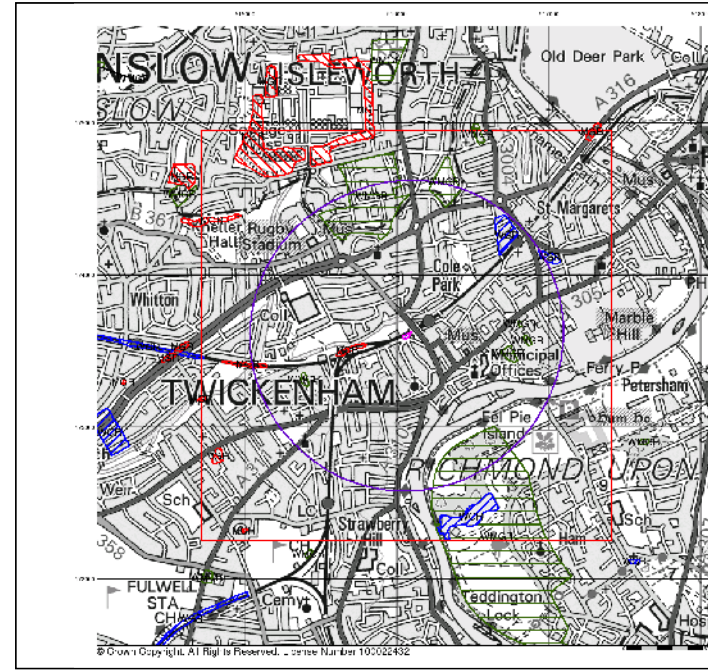
Order Details:
Order Number: 220173317_1.1
Customer Reference: 102135
National Grid Reference: S10060, 179600
Slice: A
Site Area (ha): 0.11
Search Buffer (m): 1000

Site Details:
Site at Twickenham, Richmond upon Thames

Landmark

Tel: 0844 644 9922
Fax: 0844 644 9921
www.landmark.co.uk

v15.0 03.06.2019 Page 1 of 5



Pell Frischmann

Artificial Ground and Landslip

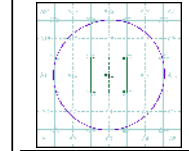
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial Ground and Landslip Map - Slice A



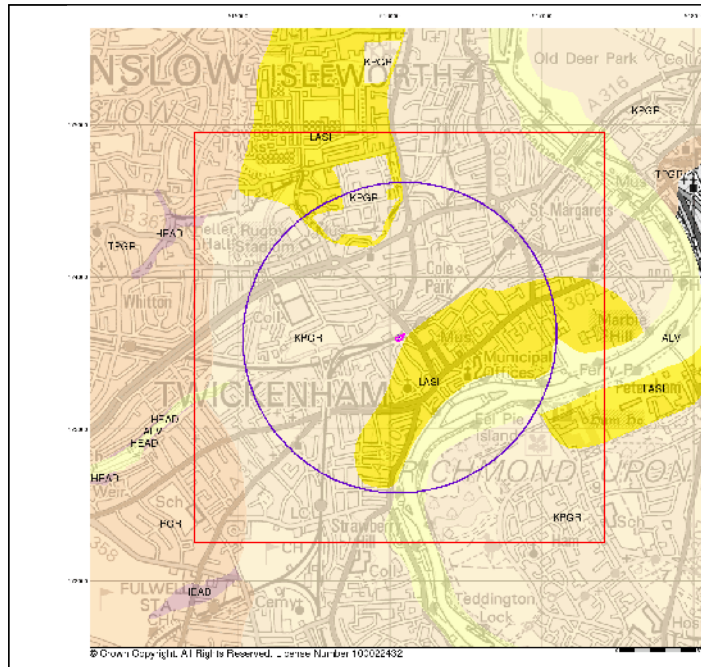
Order Details:
Order Number: 220173317_1.1
Customer Reference: 102135
National Grid Reference: S10060, 179600
Slice: A
Site Area (ha): 0.11
Search Buffer (m): 1000

Site Details:
Site at Twickenham, Richmond upon Thames

Landmark

Tel: 0844 644 9922
Fax: 0844 644 9921
www.landmark.co.uk

v15.0 03.06.2019 Page 2 of 5



Pell Frischmann

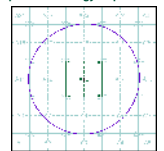
Superficial Geology

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



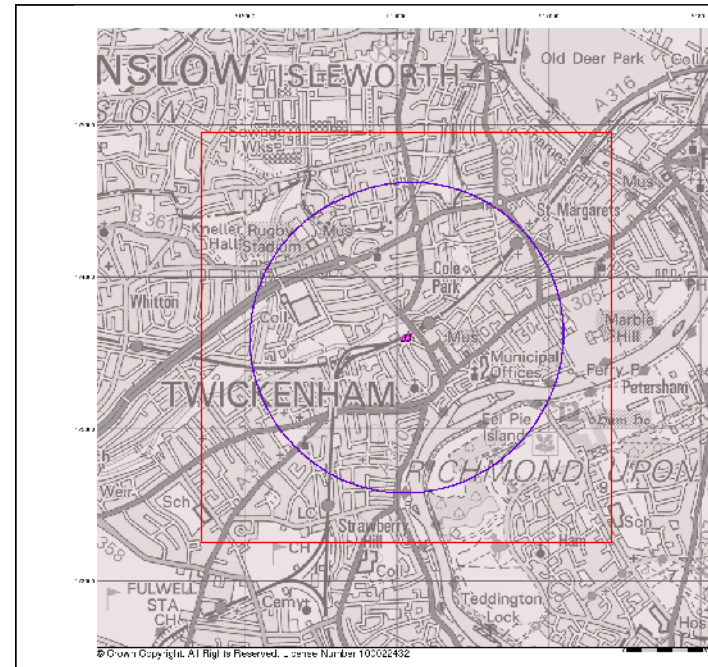
Order Details:
Order Number: 220173317_1.1
Customer Reference: 102135
National Grid Reference: S10060, 179600
Slice: A
Site Area (ha): 0.11
Search Buffer (m): 1000

Site Details:
Site at Twickenham, Richmond upon Thames

Landmark

Tel: 0844 644 9922
Fax: 0844 644 9921
www.landmark.co.uk

v15.0 03.06.2019 Page 3 of 5



Pell Frischmann

Bedrock and Faults

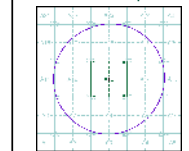
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits of water.

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 Pleistocene, 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 beds). Some of these are linked to other published 1:50,000 Geology datasets, for example, coal seams are part of the bedrock geology; most faults and mineral veins primarily affect the bedrock but out across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



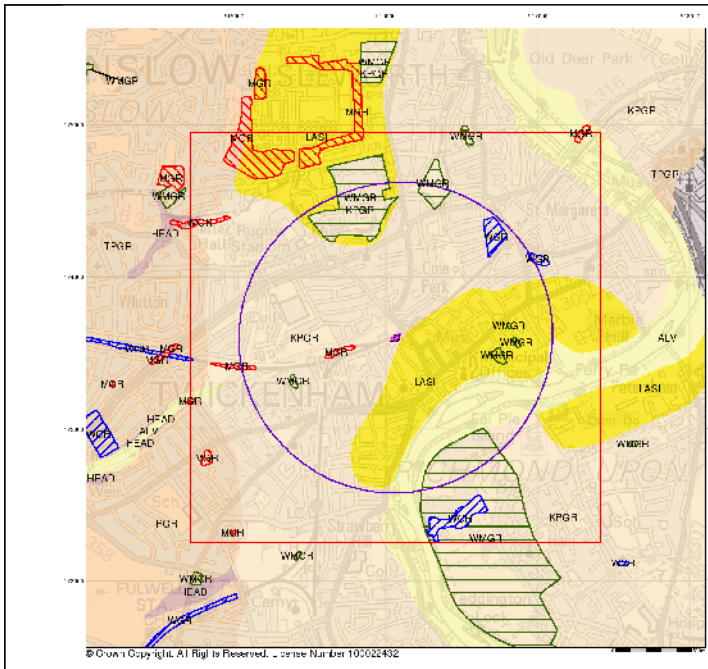
Order Details:
Order Number: 220173317_1.1
Customer Reference: 102135
National Grid Reference: S10060, 179600
Slice: A
Site Area (ha): 0.11
Search Buffer (m): 1000

Site Details:
Site at Twickenham, Richmond upon Thames

Landmark

Tel: 0844 644 9922
Fax: 0844 644 9921
www.landmark.co.uk

v15.0 03.06.2019 Page 4 of 5



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

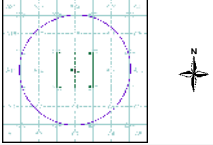
Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

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
 British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:
 Order Number: 220173317_1.1
 Customer Reference: 102135
 National Grid Reference: 510600, 173600
 Slice: A
 Site Area (ha): 0.11
 Search Buffer (m): 1000

Site Details:
 Site at Twickenham, Richmond upon Thames

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
Extreme Flooding from Rivers or Sea without Defences					
	Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (N)	102	2	516056 173723
Extreme Flooding from Rivers or Sea without Defences					
	Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (N)	110	2	516024 173713
Extreme Flooding from Rivers or Sea without Defences					
	Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (NW)	114	2	515965 173688
Flooding from Rivers or Sea without Defences					
	Type: Extent of Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (N)	102	2	516056 173723
Flooding from Rivers or Sea without Defences					
	Type: Extent of Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (N)	110	2	516024 173713
Flooding from Rivers or Sea without Defences					
	Type: Extent of Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NW (NW)	114	2	515965 173688
Flooding from Rivers or Sea without Defences					
	Type: Extent of Flooding from Rivers or Sea without Defences Flood Plan Type: Flood Models Boundary Accuracy: As Supplied	A12NE (NE)	166	2	518191 173752
Areas Benefiting from Flood Defences					
None					
Flood Water Storage Areas					
None					
Flood Defences					
	Type: Flood Defences Reference: Not Supplied	A12NW (N)	101	2	516024 173712
Flood Defences					
	Type: Flood Defences Reference: Not Supplied	A12NW (N)	111	2	516057 173732
OS Water Network Lines					
47	Watercourse Form: Inland river Watercourse Length: 271.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Crane Catchment Name: Thames Priority: 1	A12NW (N)	106	6	516019 173716
OS Water Network Lines					
48	Watercourse Form: Tidal river Watercourse Length: 734.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Priority: 1	ASNE (SE)	522	6	516362 173719
OS Water Network Lines					
49	Watercourse Form: Inland river Watercourse Length: 276.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Crane Catchment Name: Thames Priority: 1	A12SW (N)	648	6	518277 174255

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
OS Water Network Lines					
50	Watercourse Form: Tidal river Watercourse Length: 265.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Priority: 1	ASNE (E)	658	6	516254 172955
OS Water Network Lines					
51	Watercourse Form: Tidal river Watercourse Length: 618.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Priority: 2	ASNE (SE)	658	6	518375 173265
OS Water Network Lines					
52	Watercourse Form: Inland river Watercourse Length: 77.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12E (NW)	737	6	515964 174224
OS Water Network Lines					
53	Watercourse Form: Inland river Watercourse Length: 54.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12E (NW)	737	6	515964 174224
OS Water Network Lines					
54	Watercourse Form: Inland river Watercourse Length: 52.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12E (NW)	793	6	515952 174258
OS Water Network Lines					
55	Watercourse Form: Tidal river Watercourse Length: 276.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Priority: 1	ASNE (SE)	836	6	518688 173240
OS Water Network Lines					
56	Watercourse Form: Inland river Watercourse Length: 319.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (N)	846	6	516318 174439
OS Water Network Lines					
57	Watercourse Form: Inland river Watercourse Length: 15.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Crane Catchment Name: Thames Priority: 1	A12NE (N)	854	6	516358 174442
OS Water Network Lines					
58	Watercourse Form: Tidal river Watercourse Length: 88.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	ASNE (E)	855	6	516123 172728

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
OS Water Network Lines					
59	Watercourse Form: Inland river Watercourse Length: 169.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Priority: 1	ASSE (E)	855	6	516123 172728
OS Water Network Lines					
60	Watercourse Form: Inland river Watercourse Length: 319.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Crane Catchment Name: Thames Priority: 1	A12NE (N)	868	6	516336 174457
OS Water Network Lines					
61	Watercourse Form: Inland river Watercourse Length: 424.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Crane Catchment Name: Thames Priority: 1	A12NE (N)	868	6	516336 174457
OS Water Network Lines					
62	Watercourse Form: Inland river Watercourse Length: 12.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (NW)	885	6	515530 174325
OS Water Network Lines					
63	Watercourse Form: Inland river Watercourse Length: 21.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (N)	889	6	515957 174512
OS Water Network Lines					
64	Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (NW)	897	6	515522 174334
OS Water Network Lines					
65	Watercourse Form: Inland river Watercourse Length: 544.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	ASSW (E)	897	6	516050 172683
OS Water Network Lines					
66	Watercourse Form: Inland river Watercourse Length: 15.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (NW)	901	6	515519 174337
OS Water Network Lines					
67	Watercourse Form: Inland river Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (N)	901	6	515519 174337

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
OS Water Network Lines					
68	Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (NW)	916	6	515589 174588
OS Water Network Lines					
69	Watercourse Form: Inland river Watercourse Length: 161.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Priority: 1	A12NE (NW)	921	6	515966 174862
OS Water Network Lines					
70	Watercourse Form: Inland river Watercourse Length: 300.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Duke of Northumberland's River Catchment Name: Thames Priority: 2	A12NW (W)	950	6	515125 173879

Waste

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
Historical Landfill Sites					
71	Location Holder: Not Supplied Location: St. Margarets, Isleworth, Hounslow, London Operator Location: Not Supplied Operator Reference: Not Supplied From Input Date: 31st December 1963 Last Input Date: 31st December 1963 Specified Waste: Deposited Waste including treat Waste Type: Waste Ref: 0 Reg Ref: Not Supplied WPC Ref: 5540038 BGS Ref: Not Supplied Other Ref: BPO037-HO038	A12SW (W)	652	2	515952 174246
Historical Landfill Sites					
72	Location Holder: Wilmont Brothers Location: Isleworth, Hounslow, London Operator Location: Not Supplied Operator Reference: Not Supplied From Input Date: 31st December 1965 Last Input Date: 31st December 1965 Specified Waste: Deposited Waste including treat and industrial Waste Type: Waste Ref: 0 Reg Ref: Not Supplied WPC Ref: 5540035 BGS Ref: Not Supplied Other Ref: BPO037-HO038	A12SW (W)	653	2	515951 174247
Historical Landfill Sites					
73	Location Holder: Not Supplied Location: St. Margarets, Isleworth, Hounslow, London Operator Location: Not Supplied Operator Reference: Not Supplied From Input Date: 31st December 1961 Last Input Date: 31st December 1961 Specified Waste: Not Supplied Type: Waste Ref: 0 Reg Ref: Not Supplied WPC Ref: 5540038 BGS Ref: Not Supplied Other Ref: BPO037-HO038	A12NE (N)	849	2	516315 174442
Licensed Waste Management Facilities (Locations)					
74	Location Number: 40010 Location: Central Depot, Langhorne Drive, Twickenham, Middlesex, TW2 7BG Operator Name: Not Supplied Authority: Environment Agency, Thames Region, North East Area Site Category: Household, Commercial and Industrial Transfer Stations Licence Status: Issued Issued: 18th May 2013 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Renewed: Not Supplied IPPC Reference: Not Supplied Provisional Authority: Located by supplier to within 10m	A12SW (W)	835	2	515208 173484
Local Authority Landfill Coverage					
	Name: London Borough of Richmond upon Thames Has no landfill sites to supply		0	7	516064 173604
Local Authority Landfill Coverage					
	Name: London Borough of Hounslow Has no landfill sites to supply		648	4	515876 174234
Potentially Infiltrated Land (Non-Water)					
75	Bearing Ref: SW Use: Unknown Filled Ground (PL, quarry etc) Date of Mapping: 1992	A12SW (SW)	711	-	515382 173308

Waste

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
Potentially Infiltrated Land (Non-Water)					
76	Bearing Ref: N Use: Unknown Filled Ground (PL, quarry etc) Date of Mapping: 1992	A12SW (N)	712	-	515385 174256
Potentially Infiltrated Land (Non-Water)					
77	Bearing Ref: SE Use: Unknown Filled Ground (PL, quarry etc) Date of Mapping: 1992	ASSW (SE)	890	-	516355 172803

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
BGS 1:625,000 Soils Geology					
	Description: Thames Group	A12NE (NE)	0	1	516064 173604
BGS Estimated Soil Chemistry					
	No site available				
BGS Recorded Mineral Sites					
78	Site Name: Talsarkanham Gravel Pit Location: Talsarkanham, Surrey Source: British Geological Survey, National Geoscience Information Service Reference: 144159 Type: Capped Operator: Unknown Operator Operator Location: Not Supplied Geology: Sand and Gravel Provisional Authority: Located by supplier to within 10m	A12SW (SW)	714	1	515383 173286
BGS Recorded Mineral Sites					
79	Site Name: Magdon Sand & Ballast Works Location: Magdon, Isleworth, Middlesex Source: British Geological Survey, National Geoscience Information Service Reference: 19677 Type: Open Status: Capped Operator: Wilmont Ready Mix Concrete Ltd Operator Location: Not Supplied Geology: Sand and Gravel Provisional Authority: Located by supplier to within 10m	A12NW (N)	801	1	515760 174360
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51670, 173629 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 15.90 mg/kg Cadmium Measured: 1.00 mg/kg Chromium Measured: 76.60 mg/kg Lead Measured: 509.40 mg/kg Nickel Measured: 22.60 mg/kg Concentration:	A12NE (NE)	271	1	516270 173629
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51618, 173502 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 20.00 mg/kg Cadmium Measured: 0.70 mg/kg Chromium Measured: 58.20 mg/kg Lead Measured: 380.60 mg/kg Nickel Measured: 23.60 mg/kg Concentration:	A12NE (E)	293	1	516188 173502
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51624, 173777 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 18.80 mg/kg Cadmium Measured: 0.30 mg/kg Chromium Measured: 79.90 mg/kg Lead Measured: 264.90 mg/kg Nickel Measured: 19.30 mg/kg Concentration:	A12NE (NW)	357	1	516274 173777
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51676, 173643 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 0.80 mg/kg Cadmium Measured: 69.10 mg/kg Chromium Measured: 79.90 mg/kg Lead Measured: 26.80 mg/kg Nickel Measured: 26.80 mg/kg Concentration:	A12NE (E)	687	1	516765 173643

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51574, 173274 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 16.30 mg/kg Cadmium Measured: 0.60 mg/kg Chromium Measured: 56.20 mg/kg Lead Measured: 355.90 mg/kg Nickel Measured: 19.50 mg/kg Concentration:	A12SW (SW)	398	1	515794 173274
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51638, 174588 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 25.20 mg/kg Cadmium Measured: 1.00 mg/kg Chromium Measured: 78.00 mg/kg Lead Measured: 456.20 mg/kg Nickel Measured: 40.00 mg/kg Concentration:	A12SE (NE)	638	1	516389 174188
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51678, 173723 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 18.70 mg/kg Cadmium Measured: 0.50 mg/kg Chromium Measured: 70.20 mg/kg Lead Measured: 473.30 mg/kg Nickel Measured: 29.90 mg/kg Concentration:	A12NW (E)	643	1	516278 173723
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51674, 174210 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 0.80 mg/kg Cadmium Measured: 59.60 mg/kg Chromium Measured: 149.60 mg/kg Lead Measured: 16.20 mg/kg Nickel Measured: 16.20 mg/kg Concentration:	A12SW (W)	678	1	515744 174210
BGS Measured Urban Soil Chemistry					
	Source: British Geological Survey, National Geoscience Information Service Site: 51676, 173643 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured: 0.80 mg/kg Cadmium Measured: 69.10 mg/kg Chromium Measured: 79.90 mg/kg Lead Measured: 26.80 mg/kg Nickel Measured: 26.80 mg/kg Concentration:	A12NE (E)	687	1	516765 173643

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	Contemporary Trade Directory Entries Name: 67 Holly Road, Tackenhaven, TW1 4HF Location: Holly Road, Tackenhaven, TW1 4HF Classification: Carpets & Upholstery Cleaners Status: Inactive Postional Accuracy: Manually positioned to the address	ARNE (E)	401		518114 73184
101	Contemporary Trade Directory Entries Name: Fofos Location: 10 Heath Road, Tackenhaven, TW1 4BZ Classification: Photographic Processors Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	416		518113 73186
101	Contemporary Trade Directory Entries Name: 22 Heath Road, Tackenhaven, TW1 4BZ Location: 22 Heath Road, Tackenhaven, TW1 4BZ Classification: Jewellery Manufacturers & Repairs Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	420		518081 73161
101	Contemporary Trade Directory Entries Name: 20 Heath Road, Tackenhaven, TW1 4BZ Location: 20 Heath Road, Tackenhaven, TW1 4BZ Classification: Hair Dressers & Hair Stylists Status: Inactive Postional Accuracy: Manually positioned to the address	ARNE (E)	421		518085 73180
101	Contemporary Trade Directory Entries Name: M E L Dry Cleaners Location: 40 Heath Road, Tackenhaven, TW1 4BZ Classification: Dry Cleaners Status: Active Postional Accuracy: Automatically positioned to the address	ARNE (E)	422		518077 73189
101	Contemporary Trade Directory Entries Name: Local Cleaning Tackenhaven Ltd Location: 1 Heath Road, Tackenhaven, TW1 4AW Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	453		518144 73187
101	Contemporary Trade Directory Entries Name: Shell Service Station Location: 61, Richmond Road, Tackenhaven, TW1 3AB Classification: Fuel Stations Status: Inactive Postional Accuracy: Automatically positioned to the address	A14SW (E)	384		518459 73208
101	Contemporary Trade Directory Entries Name: Lenecker Camera And Lens Hire Location: 57a York Road, Tackenhaven, TW1 3P Classification: Photographic Equipment & Supplies - Manufacturers Status: Inactive Postional Accuracy: Automatically positioned to the address	A14SW (E)	385		518443 73484
101	Contemporary Trade Directory Entries Name: Peta Fibre Blends Location: 5-11, Richmond Road, Tackenhaven, TW1 3AB Classification: Textile Finishing Status: Active Postional Accuracy: Automatically positioned to the address	A14SW (E)	393		518465 73499
101	Contemporary Trade Directory Entries Name: Centurion Location: 36 Heath Road, Tackenhaven, TW1 3AJ Classification: La-Body Repairs Status: Inactive Postional Accuracy: Manually positioned in the vicinity of the address	A12SE (E)	393		518351 73314
101	Contemporary Trade Directory Entries Name: C F N I H R Location: 15, Church Street, Tackenhaven, TW1 3NL Classification: Laboratories Status: Inactive Postional Accuracy: Automatically positioned to the address	A12SE (SE)	398		518490 73316
101	Contemporary Trade Directory Entries Name: Centre Of Tackenhaven Location: 8-11, Church Street, Tackenhaven, TW1 3NJ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	A12SE (E)	409		518388 73330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
104	Contemporary Trade Directory Entries Name: Jackson Printing Location: 85, Whitton Road, Tackenhaven, TW1 1BT Classification: Carpets & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	A12SW (NW)	415		518789 73540
101	Contemporary Trade Directory Entries Name: Ptasheh International Ltd Location: 105 London Road, Tackenhaven, TW1 1EJ Classification: Concrete Products Status: Inactive Postional Accuracy: Automatically positioned to the address	A12SE (W)	427		518113 73460
101	Contemporary Trade Directory Entries Name: Scaum Thermal Systems Ltd Location: 40c Heath Road, Tackenhaven, TW1 4BZ Classification: Air Conditioning Equipment & Systems Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (E)	428		518047 73162
101	Contemporary Trade Directory Entries Name: Heaton Kingsmill Ltd Location: 40c Heath Road, Tackenhaven, TW1 4BZ Classification: Textile Finishing Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (E)	428		518047 73162
101	Contemporary Trade Directory Entries Name: B&E Aircon Location: 40c Heath Road, Tackenhaven, Middlesex, TW1 4BZ Classification: Air Conditioning Equipment & Systems Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (E)	428		518047 73162
101	Contemporary Trade Directory Entries Name: The Menological Society Location: 12, Baylis Mews, Tackenhaven, TW1 3HQ Classification: Scientific Apparatus & Instruments - Manufacturers Status: Inactive Postional Accuracy: Automatically positioned to the address	A14NW (NE)	437		518644 73888
101	Contemporary Trade Directory Entries Name: Callaghan Interiors Location: 60 Heath Road, Tackenhaven, TW1 4BX Classification: Carpets & Vinyl Coverings Status: Inactive Postional Accuracy: Manually positioned to the address	ARNW (E)	447		518593 73138
101	Contemporary Trade Directory Entries Name: Rubin S Bakalouss Location: 52 Heath Road, Tackenhaven, TW1 4BX Classification: Dairies Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (E)	448		518587 73136
101	Contemporary Trade Directory Entries Name: News Centre Location: 52-64 Heath Rd, Tackenhaven, Middlesex, TW1 4BX Classification: Commercial Cleaning Services Status: Inactive Postional Accuracy: Automatically positioned to the address or location	ARNE (E)	448		518587 73136
101	Contemporary Trade Directory Entries Name: Lonkax Ltd Location: 36 Heath Road, Tackenhaven, TW1 4AW Classification: Textile Products - Manufacturers Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (E)	476		518025 73165
101	Contemporary Trade Directory Entries Name: Zarin Time Co (GB) Ltd Location: 17 Heath Road, Tackenhaven, TW1 4AW Classification: Clocks & Watches - Manufacturers & Wholesalers Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	463		518695 73119
101	Contemporary Trade Directory Entries Name: Pack & Seal Location: 45, King Street Parade, King Street, Tackenhaven, TW1 3GG Classification: Freight Forwarders Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	471		518189 73130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
110	Contemporary Trade Directory Entries Name: Wash Cleaners Location: 45, King Street Parade, King Street, Tackenhaven, TW1 3GG Classification: Carpets & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	471		518189 73130
110	Contemporary Trade Directory Entries Name: Prosealing Location: 45, King Street Parade, King Street, Tackenhaven, TW1 3GG Classification: Dry Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	471		518189 73130
110	Contemporary Trade Directory Entries Name: 55 King St Pk, King St, Tackenhaven, Middlesex, TW1 3GG Location: 55 King St Pk, King St, Tackenhaven, Middlesex, TW1 3GG Classification: Electrical Appliances - Repairs Status: Inactive Postional Accuracy: Automatically positioned to the address or location	ARNE (E)	496		518184 73102
110	Contemporary Trade Directory Entries Name: Marjorie Pans Location: 55, King Street Parade, King Street, Tackenhaven, TW1 3GG Classification: Textile Finishing Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	497		518185 73102
111	Contemporary Trade Directory Entries Name: Ash Washing Machine Services Location: 113, Amoyed Park Rd, Tackenhaven, Middlesex, TW1 3HP Classification: Washing Machines - Servicing & Repairs Status: Inactive Postional Accuracy: Automatically positioned to the address	A14NW (NE)	494		518529 73855
111	Contemporary Trade Directory Entries Name: A S & A Appliances Location: 110, Amoyed Park Road, Tackenhaven, TW1 3HP Classification: Washing Machines - Servicing & Repairs Status: Inactive Postional Accuracy: Automatically positioned to the address	A14NW (NE)	494		518529 73855
111	Contemporary Trade Directory Entries Name: A S & A Appliances Location: 110, Amoyed Park Road, Tackenhaven, TW1 3HP Classification: Washing Machines - Servicing & Repairs Status: Inactive Postional Accuracy: Automatically positioned to the address	A14NW (NE)	495		518529 73858
112	Contemporary Trade Directory Entries Name: Y-Cam Location: 61, Heath Road, Tackenhaven, Middlesex, TW1 4AW Classification: Computer Manufacturers Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (E)	496		518578 73088
112	Contemporary Trade Directory Entries Name: Eurotel Location: 71, Heath Road, Tackenhaven, TW1 4AW Classification: Dry Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (E)	501		518529 73084
113	Contemporary Trade Directory Entries Name: Loshell Landscapes Location: 115, Heath Road, Tackenhaven, TW1 4BW Classification: Landscaping & Landscapes Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (E)	498		518503 73147
113	Contemporary Trade Directory Entries Name: Tackenhaven Cleaners Location: 105, Richmond Road, Tackenhaven, Middlesex, TW1 4AZ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address or location	ARNW (SW)	523		518528 73107
113	Contemporary Trade Directory Entries Name: Tackenhaven Cleaners Location: 105a, Heath Road, Tackenhaven, TW1 4AZ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SW)	523		518528 73107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	Contemporary Trade Directory Entries Name: Wash Cleaners Location: 105a, Heath Road, Tackenhaven, TW1 4AZ Classification: Carpet & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SW)	523		518528 73107
114	Contemporary Trade Directory Entries Name: Bohm Kitchens Tackenhaven Location: 114-116, Heath Road, Tackenhaven, TW1 4BW Classification: Kitchen Furniture Manufacturers Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SW)	504		518788 73146
114	Contemporary Trade Directory Entries Name: Clean Trax Exhausts Location: 134, Heath Road, Tackenhaven, TW1 4BN Classification: Tint Dyeing Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (SW)	530		518752 73163
114	Contemporary Trade Directory Entries Name: Alan's Cleaners Tackenhaven Location: 111-113, Heath Road, Tackenhaven, TW1 4AH Classification: Domestic Services - Domestic Status: Inactive Postional Accuracy: Manually positioned to the address or location	ARNW (SW)	553		518784 73106
114	Contemporary Trade Directory Entries Name: Cleaners Tackenhaven Location: Keston Way, 111, Heath Road, Tackenhaven, TW1 4AF Classification: Cleaning Services - Domestic Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SW)	553		518784 73106
115	Contemporary Trade Directory Entries Name: Arava Dry Cleaners Location: 59, Richmond Road, Tackenhaven, TW1 3AW Classification: Dry Cleaners Status: Active Postional Accuracy: Automatically positioned to the address	A14SW (E)	508		518568 73597
115	Contemporary Trade Directory Entries Name: Kadella Location: 61, Richmond Road, Tackenhaven, TW1 3AB Classification: Dry Cleaners Status: Inactive Postional Accuracy: Manually positioned to the address	A14SW (E)	509		518601 73269
116	Contemporary Trade Directory Entries Name: Marita Hill Finishes Location: 70, Richmond Road, Tackenhaven, TW1 3BE Classification: Finishes & Mantelpieces Status: Active Postional Accuracy: Automatically positioned to the address	A14SW (E)	558		518660 73897
117	Contemporary Trade Directory Entries Name: Eurotel Location: 90, Whitton Road, Tackenhaven, TW1 1BZ Classification: Dry Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	A17SE (NW)	531		518708 74016
118	Contemporary Trade Directory Entries Name: Tanya's Mazda Location: 67, Richmond Road, Tackenhaven, Middlesex, TW1 4AW Classification: Car Dealers Status: Inactive Postional Accuracy: Automatically positioned to the address or location	ARNW (E)	535		518528 73083
119	Contemporary Trade Directory Entries Name: Pressing Needs Location: 8, Tackenhaven, Middlesex, TW1 1DA Classification: Ironing & Home Laundry Services Status: Active Postional Accuracy: Automatically positioned to the address	A18SW (NW)	546		518787 74073
120	Contemporary Trade Directory Entries Name: Eurotel Location: 142, Heath Road, Tackenhaven, TW1 4BN Classification: Catering Equipment Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	552		518701 73151

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	Contemporary Trade Directory Entries Name: Wash Cleaners Location: 113, Heath Road, Tackenhaven, TW1 4AZ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SW)	571		518742 73209
120	Contemporary Trade Directory Entries Name: M K G 3000 Location: 113, Heath Road, Tackenhaven, Middlesex, TW1 4AZ Classification: Car Dealers Status: Active Postional Accuracy: Automatically positioned to the address	ARNW (SW)	571		518742 73209
120	Contemporary Trade Directory Entries Name: Scene Security Dispensary Of Tackenhaven Location: 121, Heath Road, Tackenhaven, TW1 4AZ Classification: Agricultural Engines Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	582		518713 73105
121	Contemporary Trade Directory Entries Name: 146 Heath Road, Tackenhaven, TW1 4BN Location: 146 Heath Road, Tackenhaven, TW1 4BN Classification: Dry Cleaners Status: Active Postional Accuracy: Automatically positioned to the address	ARNE (SW)	589		518078 73149
121	Contemporary Trade Directory Entries Name: Quixima Cleaning Location: 5, Frush Park, Tackenhaven, TW1 4DB Classification: Commercial Cleaning Services Status: Inactive Postional Accuracy: Automatically positioned to the address	ATNE (SW)	572		518568 73181
121	Contemporary Trade Directory Entries Name: 148, Heath Road, Tackenhaven, Middlesex, TW1 4BN Location: 148, Heath Road, Tackenhaven, Middlesex, TW1 4BN Classification: Veterinary Equipment Manufacturers Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	578		518670 73146
121	Contemporary Trade Directory Entries Name: The Purr Cat Location: A-2, Heath Road, Tackenhaven, TW1 4JA Classification: Pet Services Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	577		518546 73146
121	Contemporary Trade Directory Entries Name: Quixima Contractors Location: 26, Lavender Way, TW20ENHAM, TW1 4JA Classification: Commercial Cleaning Services Status: Inactive Postional Accuracy: Automatically positioned to the address	ATNE (SW)	577		518546 73187
121	Contemporary Trade Directory Entries Name: At Trade Detergents & Dry Res Treatments Location: 152, Heath Road, Tackenhaven, Middlesex, TW1 4BN Classification: Detergents & Dry Res Treatments Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	583		518660 73145
121	Contemporary Trade Directory Entries Name: PPG Cleaners Tackenhaven Location: 124, Heath Road, Tackenhaven, TW1 4BN Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	584		518580 73145
122	Contemporary Trade Directory Entries Name: Ed Pie Bouldry Ltd Location: Ed Pie Island, Tackenhaven, Middlesex, TW1 3DY Classification: Pools, Docks & Harbours Status: Active Postional Accuracy: Manually positioned to the address or location	ARNW (SE)	582		516475 73172
122	Contemporary Trade Directory Entries Name: Ed Pie Island Stevedores Ltd Location: Ed Pie Island, Tackenhaven, TW1 3DY Classification: Stevedores Status: Active Postional Accuracy: Manually positioned to the address or location	ARNE (SW)	583		516478 73172

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
122	Contemporary Trade Directory Entries Name: Wash Cleaners Location: Ed Pie Island, Tackenhaven, TW1 3DY Classification: Pools, Docks & Harbours Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNW (SE)	583		516475 73172
122	Contemporary Trade Directory Entries Name: Nicholas Dixon Location: Ed Pie Island, Tackenhaven, Middlesex, TW1 3DY Classification: Antiques - Repairing & Restoring Status: Active Postional Accuracy: Manually positioned within the geographical locality	ARNW (SE)	594		518465 73146
122	Contemporary Trade Directory Entries Name: 91-93, Richmond Road, Tackenhaven, TW1 3AW Location: 91-93, Richmond Road, Tackenhaven, TW1 3AW Classification: Garage Services Status: Active Postional Accuracy: Automatically positioned to the address	A14NW (E)	599		518689 73878
124	Contemporary Trade Directory Entries Name: Labellon Location: Electrolux House, 15, Loo Road, Tackenhaven, TW1 4JH Classification: Electrical Engineering Systems Manufacturers Status: Inactive Postional Accuracy: Manually positioned within the geographical locality	ARNE (SW)	603		518087 73216
125	Contemporary Trade Directory Entries Name: Waste Collection Location: Electrolux House, 15, Loo Road, Tackenhaven, TW1 4JH Classification: Waste Disposal Services Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	616		518568 73192
125	Contemporary Trade Directory Entries Name: Electrolux House, 15, Loo Road, Tackenhaven, Middlesex, TW1 4JH Location: Electrolux House, 15, Loo Road, Tackenhaven, Middlesex, TW1 4JH Classification: Psters Status: Inactive Postional Accuracy: Manually positioned to the address or location	ARNE (SW)	616		518568 73192
125	Contemporary Trade Directory Entries Name: Bifno Location: Electrolux House, 15, Loo Road, Tackenhaven, Middlesex, TW1 4JH Classification: Electrical Engineering Systems Manufacturers Status: Inactive Postional Accuracy: Manually positioned to the address or location	ARNE (SW)	616		518568 73192
125	Contemporary Trade Directory Entries Name: Bifno Location: Electrolux House, 15, Loo Road, Tackenhaven, TW1 4JH Classification: Electrical Engineering Systems Manufacturers Status: Inactive Postional Accuracy: Manually positioned to the address or location	ARNE (SW)	616		518568 73192
125	Contemporary Trade Directory Entries Name: Everlogg Facilities Ltd Location: Baines Ho, 4 Eder Rd, Tackenhaven, Middlesex, TW1 4JN Classification: Facilities & Filing Services Status: Inactive Postional Accuracy: Manually positioned to the address or location	ARNE (SW)	617		518567 73191
125	Contemporary Trade Directory Entries Name: W B Autos Location: 3-5, Eder Road, Tackenhaven, TW1 4JJ Classification: Vehicle Repairs & Maintenance Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	641		518746 73046
125	Contemporary Trade Directory Entries Name: R Pans Location: 3-5, Eder Road, Tackenhaven, TW1 4JJ Classification: Psters Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	641		518575 73146
125	Contemporary Trade Directory Entries Name: 3-5, Eder Road, Tackenhaven, Middlesex, TW1 4JJ Location: 3-5, Eder Road, Tackenhaven, Middlesex, TW1 4JJ Classification: Air Compressors Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	642		518575 73146

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	Contemporary Trade Directory Entries Name: Wash Cleaners Location: Wash Cleaners Ltd, 105, Richmond Road, Tackenhaven, TW1 4R Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	643		518582 73158
125	Contemporary Trade Directory Entries Name: Tackenhaven Plating Group Ltd Location: 7-9, Heath Road, Tackenhaven, TW1 4JJ Classification: Metal Finishing Services Status: Active Postional Accuracy: Automatically positioned to the address	ARNE (SW)	653		518560 73146
125	Contemporary Trade Directory Entries Name: Pancy Cleaners & Son Ltd Location: 2, Cole Road, Tackenhaven, TW1 4P Classification: Pet Food & Animal Products Status: Inactive Postional Accuracy: Automatically positioned to the address	ARNE (SW)	655		518571 73131
126	Contemporary Trade Directory Entries Name: Ed Pie Bouldry Location: Ed Pie Island, Tackenhaven, Middlesex, TW1 3DY Classification: Pools, Docks & Harbours Status: Inactive Postional Accuracy: Manually positioned within the geographical locality	ARNW (SE)	616		516480 73108
127	Contemporary Trade Directory Entries Name: Marble Cleaning Services Location: 17, Heath Road, Tackenhaven, TW1 3AJ Classification: Cleaning Services - Domestic Status: Inactive Postional Accuracy: Automatically positioned to the address	A14NW (E)	624		518705 73744
128	Contemporary Trade Directory Entries Name: Sanpro Transformers Location: Unit 24, 37, Hamilton Road, Tackenhaven, Middlesex, TW2 6SN Classification: Transformers Status: Inactive Postional Accuracy: Automatically positioned to the address	A12SE (W)	628		518443 73883
128	Contemporary Trade Directory Entries Name: Chuffell Location: 37, Hamilton Road, Tackenhaven, Middlesex, TW2 6SN Classification: Engineering Status: Inactive Postional Accuracy: Manually positioned to the address or location	A12SE (W)	628		518443 73883

Industrial Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
223	Points of Interest - Manufacturing and Production Name: Works Location: TY1 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18EE (NE)	874	8	518852 74134	
224	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18EE (NE)	880	8	518857 74138	
225	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	878	8	515193 73337	
225	Points of Interest - Manufacturing and Production Name: Works Location: TY2 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	878	8	515193 73337	
226	Points of Interest - Manufacturing and Production Name: Works Location: TY1 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	886	8	518975 73706	
227	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	897	8	515314 73569	
227	Points of Interest - Manufacturing and Production Name: Works Location: TY2 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	898	8	515314 73567	
228	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18NW (NE)	945	8	518486 73468	
228	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18NW (NE)	975	8	518546 74487	
228	Points of Interest - Manufacturing and Production Name: Works Location: TY1 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18NW (NE)	980	8	518852 74489	
229	Points of Interest - Manufacturing and Production Name: Association of Independent Tour Operators Location: Satis to 30 Phelps House 133B, St Margarets Road, Tuckersham, TW11 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	947	8	518772 74283	
229	Points of Interest - Manufacturing and Production Name: Appleton Commercial Services Ltd Location: A74 The Mares, Bridge Road, Tuckersham, TW11 8F Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18NW (NE)	948	8	518721 73434	

Industrial Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
230	Points of Interest - Manufacturing and Production Name: Works Location: TY2 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	956	8	515220 73202	
230	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	957	8	515219 73201	
230	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	987	8	515191 73079	
230	Points of Interest - Manufacturing and Production Name: Works Location: TY2 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	992	8	515188 73278	
231	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	110	8	518926 73727	
231	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NW (NW)	116	8	518969 73863	
232	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	113	8	518971 73705	
232	Points of Interest - Public Infrastructure Name: Tuckersham Station Location: Mary S Terrace, TW1 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halls Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	113	8	518971 73706	
232	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	124	8	518477 73735	
232	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	203	8	518222 73771	
233	Points of Interest - Public Infrastructure Name: Tuckersham Police Station Location: 41 London Road, Tuckersham, TW11 3BY Category: Police Stations Class Code: Police Stations Positional Accuracy: Positioned to an adjacent address or location	A18SE (SE)	207	8	518191 73423	
233	Points of Interest - Public Infrastructure Name: Metropolitan Police Station Location: Central and Local Government Category: Police Stations Class Code: Police Stations Positional Accuracy: Positioned to an adjacent address or location	A18SE (SE)	207	8	518191 73423	

Industrial Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
233	Points of Interest - Public Infrastructure Name: Barking Island Location: 41 London Road, Tuckersham, TW11 3BY Category: Central and Local Government Class Code: Public Buildings Positional Accuracy: Positioned to an adjacent address or location	A18SE (SE)	207	8	518191 73423	
234	Points of Interest - Public Infrastructure Name: Oak Lane Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A18SE (E)	301	8	518386 73566	
234	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A18SE (E)	313	8	518398 73567	
234	Points of Interest - Public Infrastructure Name: Shell Dale Lane Location: 5-11 Richmond Road, Tuckersham, TW11 3AB Category: Petrol and Fuel Stations Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to an adjacent address or location	A18SW (E)	384	8	518469 73508	
234	Points of Interest - Public Infrastructure Name: Shell Dale Lane Location: 5-11 Richmond Road, Tuckersham, TW11 3AB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to an adjacent address or location	A18SW (E)	384	8	518469 73508	
234	Points of Interest - Public Infrastructure Name: TW1 Location: 5-11 Richmond Road, Tuckersham, TW11 3AB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to an adjacent address or location	A18SW (E)	384	8	518469 73508	
235	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Water, Buses and Dams Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	311	8	518322 73833	
235	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	389	8	518346 73791	
236	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (NE)	476	8	518384 74014	
237	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Water, Buses and Dams Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18EE (NE)	530	8	518328 74208	
237	Points of Interest - Public Infrastructure Name: Water Location: TW1 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18EE (N)	582	8	518250 74171	
238	Points of Interest - Public Infrastructure Name: TW2 Location: TW2 Category: Water, Buses and Dams Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18W (W)	583	8	518468 73495	

Industrial Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
239	Points of Interest - Public Infrastructure Name: Barking Island Location: Elmstone House 15, Lion Road, Tuckersham, TW11 4JH Category: Central and Local Government Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	616	8	518588 73192	
239	Points of Interest - Public Infrastructure Name: Barking Island Location: Elmstone House 15, Lion Road, Tuckersham, TW11 4JH Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	616	8	518588 73192	
240	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Water, Buses and Dams Class Code: Water Positional Accuracy: Positioned to an adjacent address or location	A18E (N)	693	8	518365 74273	
241	Points of Interest - Public Infrastructure Name: TW2 Location: TW2 Category: Water, Buses and Dams Class Code: Water Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	710	8	518337 73460	
242	Points of Interest - Public Infrastructure Name: Barking Island Location: 101 Heath Road, Tuckersham, TW2 5TX Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	727	8	518507 73200	
243	Points of Interest - Public Infrastructure Name: TW1 Location: TW1 Category: Water, Buses and Dams Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18E (N)	905	8	518370 74485	
243	Points of Interest - Public Infrastructure Name: TW7 Location: TW7 Category: Water, Buses and Dams Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	906	8	518337 74466	
244	Points of Interest - Public Infrastructure Name: Water Location: TW2 Category: Water Class Code: Water, Buses and Dams Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	909	8	518190 73281	
245	Points of Interest - Public Infrastructure Name: St Margarets London Rail Station Location: St Margarets Road, TW11 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halls Positional Accuracy: Positioned to an adjacent address or location	A18E (NE)	957	8	518812 74254	
245	Points of Interest - Public Infrastructure Name: St Margarets London Rail Station Location: St Margarets Road, TW11 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halls Positional Accuracy: Positioned to an adjacent address or location	A18E (NE)	957	8	518812 74254	
246	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Recreational Positional Accuracy: Positioned to an adjacent address or location	A18SE (SE)	288	8	518184 73295	
247	Points of Interest - Recreational and Environmental Name: Not Supplied Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18E (NE)	465	8	518388 73994	

Industrial Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
247	Points of Interest - Recreational and Environmental Name: Playground Location: Langford Place, TW1 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18E (NE)	471	8	518388 73990	
247	Points of Interest - Recreational and Environmental Name: Playground Location: Langford Place, TW1 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18E (NE)	473	8	518389 73992	
248	Points of Interest - Recreational and Environmental Name: What Lane, TW1 Location: Recreational Category: Playgrounds Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	8E (S)	493	8	518247 73128	
249	Points of Interest - Recreational and Environmental Name: Playground Location: Camfield Way, TW2 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	653	8	518379 73563	
250	Points of Interest - Recreational and Environmental Name: Playground Location: TW1 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	671	8	518762 74206	
250	Points of Interest - Recreational and Environmental Name: Not Supplied Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	672	8	518762 74207	
251	Points of Interest - Recreational and Environmental Name: Playground Location: Sunningmoor Road, TW7 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	983	8	518394 73463	

Sensitive Land Use						
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR	
252	Local Nature Reserves Name: Han Lands Location: Multiple Area Category: Natural England Source: Natural England Designation Date: 1st January 1982	A8NE (SE)	687	9	518386 72986	

Agency & Hydrological				Version	Update Cycle
Contaminated Land Register Entries and Notices					
Royal Borough of Kingston upon Thames - Environmental Health Department	April 2013	Annual Rolling Update			
Speltone Borough Council - Environmental Health Department	April 2014	Annual Rolling Update			
London Borough of Wandsworth - Environmental Health Department	January 2013	Annual Rolling Update			
London Borough of Merton - Environmental Health Department	January 2015	Annual Rolling Update			
London Borough of Hounslow - Contaminated Land Section	May 2014	Annual Rolling Update			
London Borough of Ealing - Environmental Health and Trading Standards Division	October 2013	Annual Rolling Update			
Elmbridge Borough Council - Environmental Health Department	September 2013	Annual Rolling Update			
London Borough of Richmond upon Thames - Planning and Review Department	September 2014	Annual Rolling Update			
Discharge Consents					
Environment Agency - Thames Region	July 2019	Quarterly			
Enforcement and Prohibition Notices					
Environment Agency - Thames Region	March 2013	Annual Rolling Update			
Integrated Pollution Prevention and Control					
Environment Agency - Thames Region	October 2008	Variable			
Local Authority Pollution Prevention and Control					
Environment Agency - South East Region - Kent & South London Area	July 2019	Quarterly			
Environment Agency - South East Region - North East Thames Area	July 2019	Quarterly			
Environment Agency - South East Region - West Thames Area	July 2019	Quarterly			
Environment Agency - Thames Region - West Thames Area	July 2019	Quarterly			
Local Authority Integrated Pollution Prevention and Control					
London Borough of Wandsworth - Environmental Health Department	August 2014	Variable			
Elmbridge Borough Council - Environmental Health Department	December 2014	Variable			
Speltone Borough Council - Environmental Health Department	December 2014	Variable			
London Borough of Hounslow - Environmental Health Department	February 2013	Variable			
London Borough of Richmond upon Thames - Environmental Health Department	January 2015	Variable			
London Borough of Ealing - Environmental Health and Trading Standards Division	June 2015	Variable			
Royal Borough of Kingston upon Thames - Environmental Health Department	June 2016	Variable			
London Port Health Authority - Environmental Services	October 2014	Variable			
London Borough of Merton - Environmental Health Department	September 2014	Variable			
Local Authority Pollution Prevention and Controls					
London Borough of Wandsworth - Environmental Health Department	August 2014	Annual Rolling Update			
Elmbridge Borough Council - Environmental Health Department	December 2014	Annual Rolling Update			
Speltone Borough Council - Environmental Health Department	December 2014	Annual Rolling Update			
London Borough of Hounslow - Environmental Health Department	February 2013	Annual Rolling Update			
London Borough of Richmond upon Thames - Environmental Health Department	January 2015	Annual Rolling Update			
London Borough of Ealing - Environmental Health and Trading Standards Division	June 2015	Annual Rolling Update			
Royal Borough of Kingston upon Thames - Environmental Health Department	June 2016	Annual Rolling Update			
London Port Health Authority - Environmental Services	October 2014	Annual Rolling Update			
London Borough of Merton - Environmental Health Department	September 2014	Annual Rolling Update			
Local Authority Pollution Prevention and Control Enforcements					
Elmbridge Borough Council - Environmental Health Department	April 2013	Variable			
London Borough of Wandsworth - Environmental Health Department	August 2014	Variable			
Speltone Borough Council - Environmental Health Department	December 2014	Variable			
London Borough of Hounslow - Environmental Health Department	February 2013	Variable			
London Borough of Richmond upon Thames - Environmental Health Department	January 2015	Variable			
London Borough of Ealing - Environmental Health and Trading Standards Division	June 2015	Variable			
Royal Borough of Kingston upon Thames - Environmental Health Department	June 2016	Variable			
London Port Health Authority - Environmental Services	October 2014	Variable			
London Borough of Merton - Environmental Health Department	September 2014	Variable			
Nearest Surface Water Feature					
Ordnance Survey	January 2019	Quarterly			
Pollution Incidents to Controlled Waters					
Environment Agency - Thames Region	September 1999	Not Applicable			

Agency & Hydrological				Version	Update Cycle
Prosecutions Relating to Authorised Processes					
Environment Agency - Thames Region	March 2013	Annual Rolling Update			
Prosecutions Relating to Controlled Waters					
Environment Agency - Thames Region	March 2013	Annual Rolling Update			
Registered Radioactive Substances					
Environment Agency - Thames Region	June 2016	Annual Rolling Update			
River Quality					
Environment Agency - Head Office	July 2012	Not Applicable			
River Quality Biology Sampling Points					
Environment Agency - Head Office	July 2012	Annually			
River Quality Chemistry Sampling Points					
Environment Agency - Head Office	July 2012	Annually			
Substantiated Pollution Incident Register					
Environment Agency - South East Region - Kent & South London Area	July 2019	Quarterly			
Environment Agency - South East Region - North East Thames Area	July 2019	Quarterly			
Environment Agency - South East Region - West Thames Area	July 2019	Quarterly			
Environment Agency - Thames Region - North East Area	July 2019	Quarterly			

Agency & Hydrological	Version	Update Cycle
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	July 2019	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - West Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	July 2018 July 2018 July 2018 July 2018 July 2018	Quarterly Quarterly Quarterly Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - West Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	July 2019 July 2019 July 2019 July 2019 July 2019	Quarterly Quarterly Quarterly Quarterly Quarterly
Local Authority Landfill Coverage Elmbridge Borough Council - Environmental Health Department London Borough of Ealing London Borough of Hounslow - Environmental Health Department London Borough of Merton - Environmental Health Department London Borough of Richmond upon Thames London Borough of Wandsworth - Environmental Health Department Royal Borough of Kingston upon Thames - Environmental Health Department Spelthorne Borough Council - Environmental Health Department Surrey County Council	May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites London Borough of Wandsworth - Environmental Health Department Elmbridge Borough Council - Environmental Health Department London Borough of Ealing London Borough of Hounslow - Environmental Health Department London Borough of Merton - Environmental Health Department London Borough of Richmond upon Thames Spelthorne Borough Council - Environmental Health Department Surrey County Council Royal Borough of Kingston upon Thames - Environmental Health Department	April 2003 May 2000 May 2000 May 2000 May 2000 May 2000 October 2018 October 2018 September 2003	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	June 2015 March 2003	Not Applicable Not Applicable

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	July 2019	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - West Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	July 2018 July 2018 July 2018 July 2018 July 2018	Quarterly Quarterly Quarterly Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - West Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	July 2019 July 2019 July 2019 July 2019 July 2019	Quarterly Quarterly Quarterly Quarterly Quarterly
Local Authority Landfill Coverage Elmbridge Borough Council - Environmental Health Department London Borough of Ealing London Borough of Hounslow - Environmental Health Department London Borough of Merton - Environmental Health Department London Borough of Richmond upon Thames London Borough of Wandsworth - Environmental Health Department Royal Borough of Kingston upon Thames - Environmental Health Department Spelthorne Borough Council - Environmental Health Department Surrey County Council	May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites London Borough of Wandsworth - Environmental Health Department Elmbridge Borough Council - Environmental Health Department London Borough of Ealing London Borough of Hounslow - Environmental Health Department London Borough of Merton - Environmental Health Department London Borough of Richmond upon Thames Spelthorne Borough Council - Environmental Health Department Surrey County Council Royal Borough of Kingston upon Thames - Environmental Health Department	April 2003 May 2000 May 2000 May 2000 May 2000 May 2000 October 2018 October 2018 September 2003	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	June 2015 March 2003	Not Applicable Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Elmbridge Borough Council London Borough of Ealing London Borough of Hounslow London Borough of Merton London Borough of Richmond upon Thames London Borough of Wandsworth - Technical Services Royal Borough of Kingston upon Thames Spelthorne Borough Council - Planning Department Surrey County Council London Port Health Authority - Environmental Services	February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008	Variable Variable Variable Variable Variable Variable Variable Variable Variable Annual Rolling Update
Planning Hazardous Substance Consents Elmbridge Borough Council London Borough of Ealing London Borough of Hounslow London Borough of Merton London Borough of Richmond upon Thames London Borough of Wandsworth - Technical Services Royal Borough of Kingston upon Thames Spelthorne Borough Council - Planning Department Surrey County Council London Port Health Authority - Environmental Services	February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008	Variable Variable Variable Variable Variable Variable Variable Variable Variable Annual Rolling Update

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

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2019	Quarterly
Fuel Station Entries Castrol Ltd - Esso/Espar	September 2019	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	September 2019	Quarterly
Points of Interest - Education and Health PointX	September 2019	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2019	Quarterly
Points of Interest - Public Infrastructure PointX	September 2019	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2019	Quarterly
Underground Electrical Cables National Grid	December 2015	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	August 2018	Bi-Annually
Areas of Adopted Green Belt Elmbridge Borough Council London Borough of Ealing London Borough of Hounslow London Borough of Richmond upon Thames Royal Borough of Kingston upon Thames Spelthorne Borough Council	March 2019 March 2019 March 2019 March 2019 March 2019 March 2019	As notified As notified As notified As notified As notified As notified
Areas of Unadopted Green Belt Elmbridge Borough Council London Borough of Ealing London Borough of Hounslow London Borough of Richmond upon Thames Royal Borough of Kingston upon Thames Spelthorne Borough Council	March 2019 March 2019 March 2019 March 2019 March 2019 March 2019	As notified As notified As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	June 2019	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	March 2019	Bi-Annually
Marine Nature Reserves Natural England	July 2019	Bi-Annually
National Nature Reserves Natural England	July 2019	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest Natural England	March 2019	Bi-Annually
Special Areas of Conservation Natural England	June 2019	Bi-Annually
Special Protection Areas Natural England	April 2019	Bi-Annually
World Heritage Sites Historic England	July 2019	Bi-Annually

A selection of organisations who provide data within this report

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

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	London Borough of Richmond upon Thames - Environmental Health Department 4 Waldegrave Road, Teddington, Middlesex, TW11 8EN	Telephone: 020 8891 1411 Fax: 020 8891 7762 Website: www.richmond.gov.uk
4	London Borough of Hounslow - Environmental Health Department Civic Centre, Lampton Road, Hounslow, Middlesex, TW3 4DN	Telephone: 020 8863 2000 Website: www.hounslow.gov.uk
5	Environment Agency - Head Office Rio House, Waterside Drive, Astec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
6	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerenquiries@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
7	London Borough of Richmond upon Thames Civic Centre, 44 York Street, Twickenham, Middlesex, TW2 3BZ	Telephone: 020 8891 1411 Fax: 020 8891 7762 Website: www.richmond.gov.uk
8	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
9	Natural England County Hall, Spethley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
10	Historic England 1 Waterhouse Square, 138 - 142 Holborn, London, EC1N 2ST	Telephone: 0370 333 0607 Email: customers@historicengland.org.uk Website: www.historicengland.org.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833951 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerenquiries@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

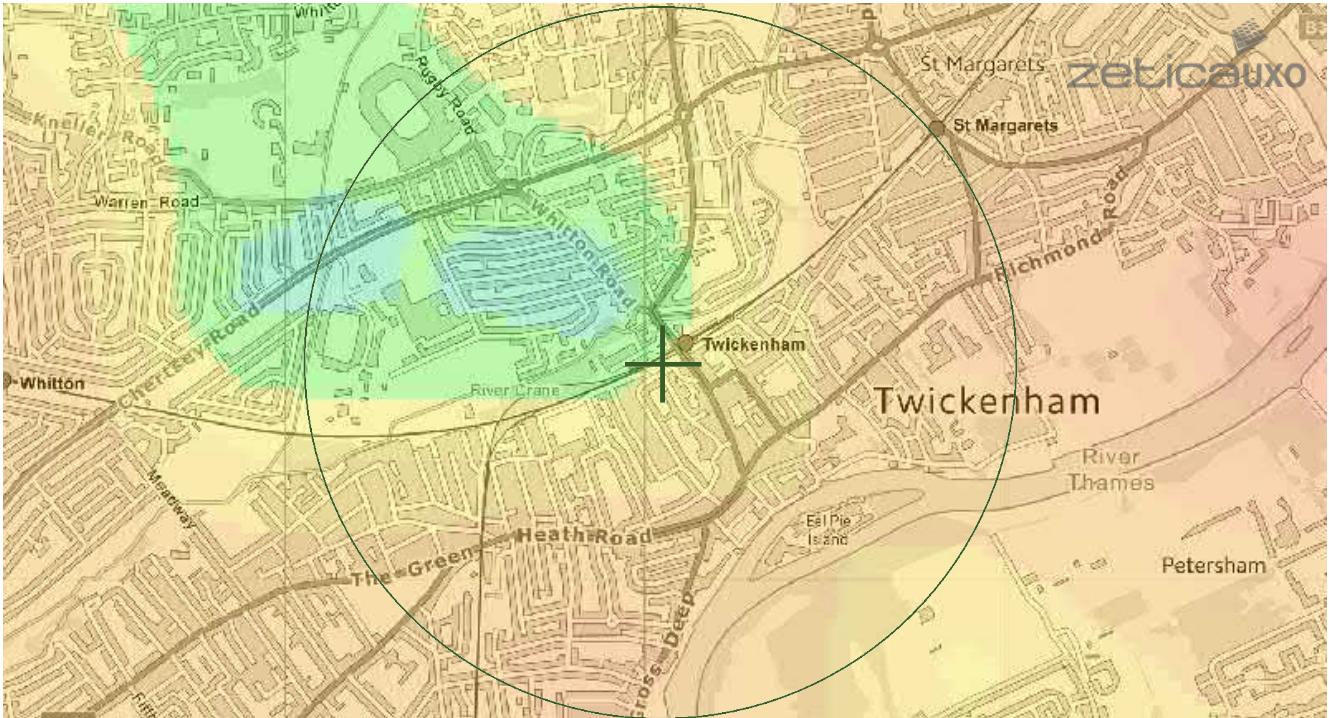
Appendix C

UXB Map from Zetica

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 516055,173606



LEGEND

London Bomb Risk



- | | | | | | |
|--|-----------|--|----------|--|-------------------|
| | military | | industry | | UXO find |
| | transport | | dock | | Luftwaffe targets |
| | utilities | | other | | abandoned bombs |

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

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

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

Relative UXB risk across London

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

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

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

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

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

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

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

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

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

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

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

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

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

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

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

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