

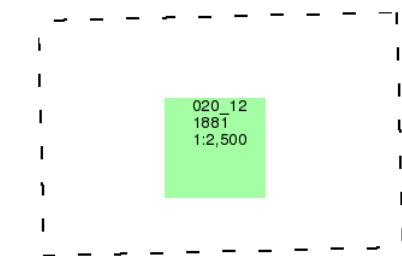
Middlesex

Published 1881

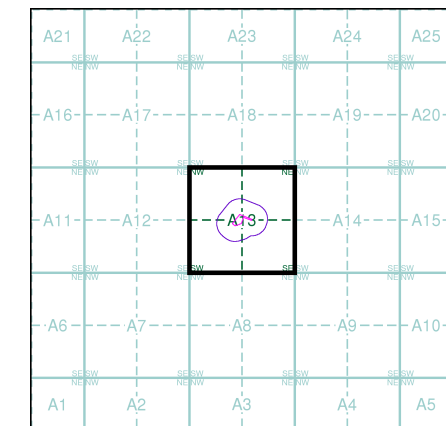
Source map scale - 1:2,500

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 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

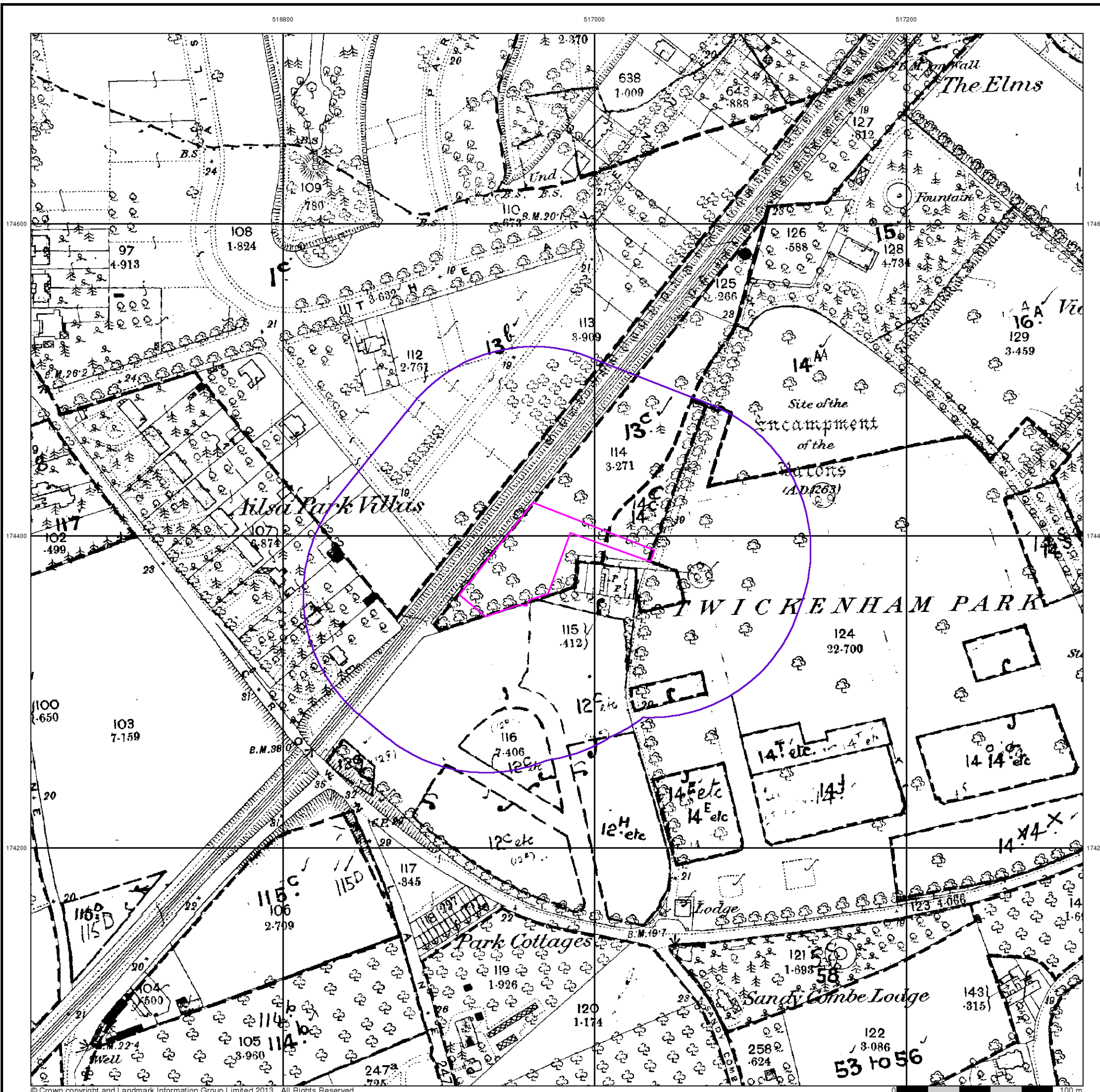


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



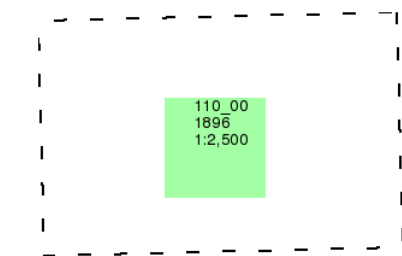
London

Published 1896

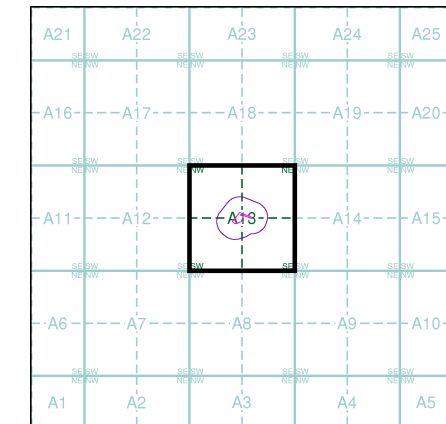
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

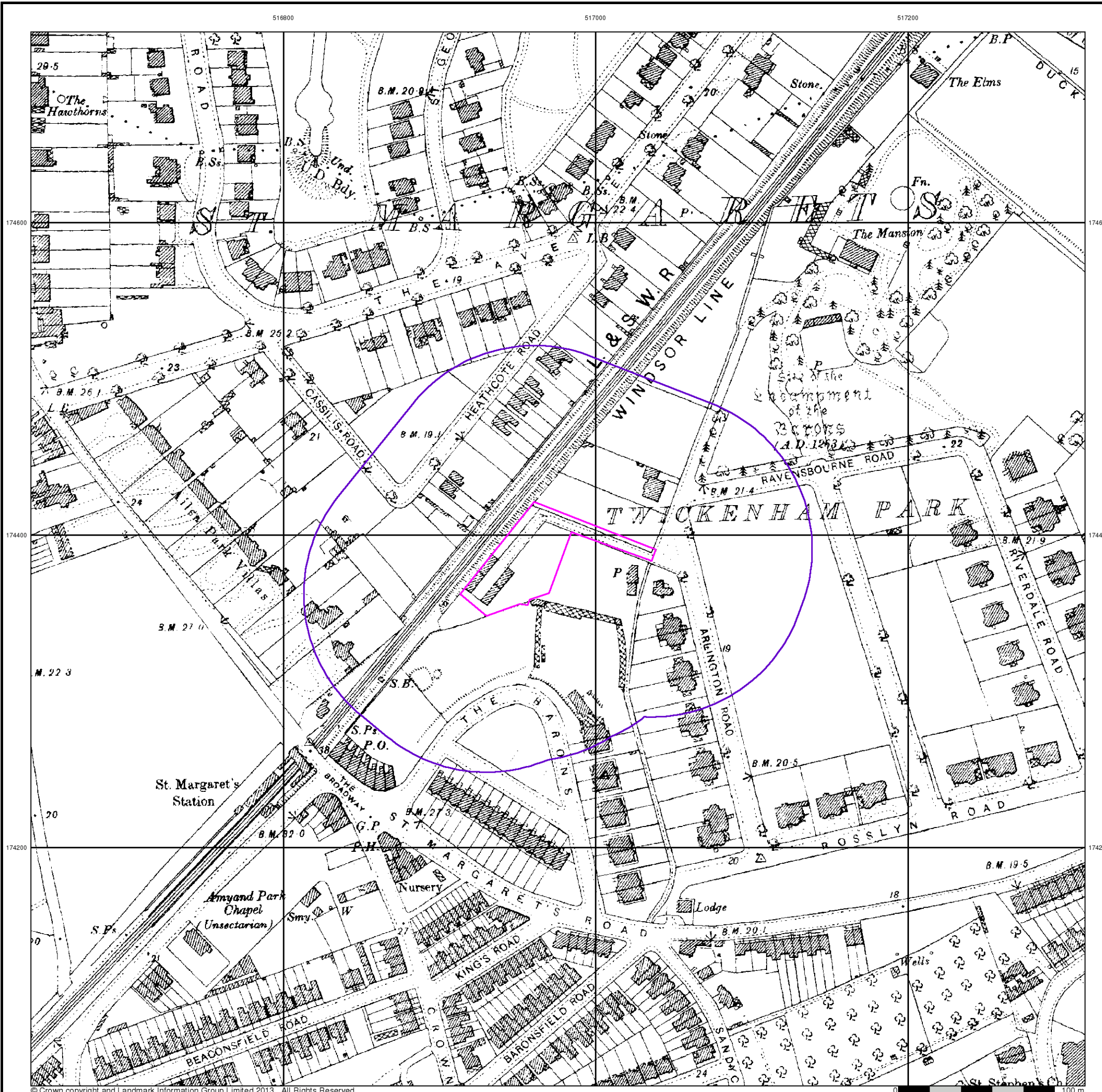


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



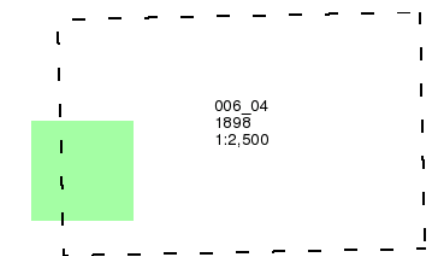
Surrey

Published 1898

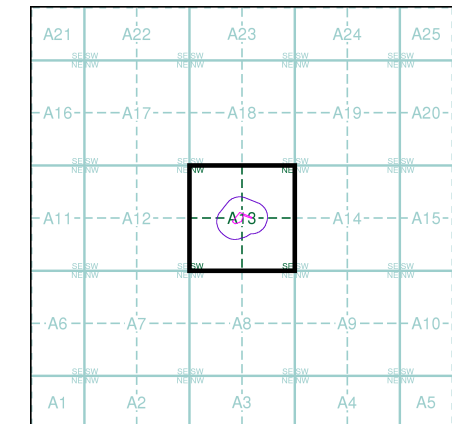
Source map scale - 1:2,500

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

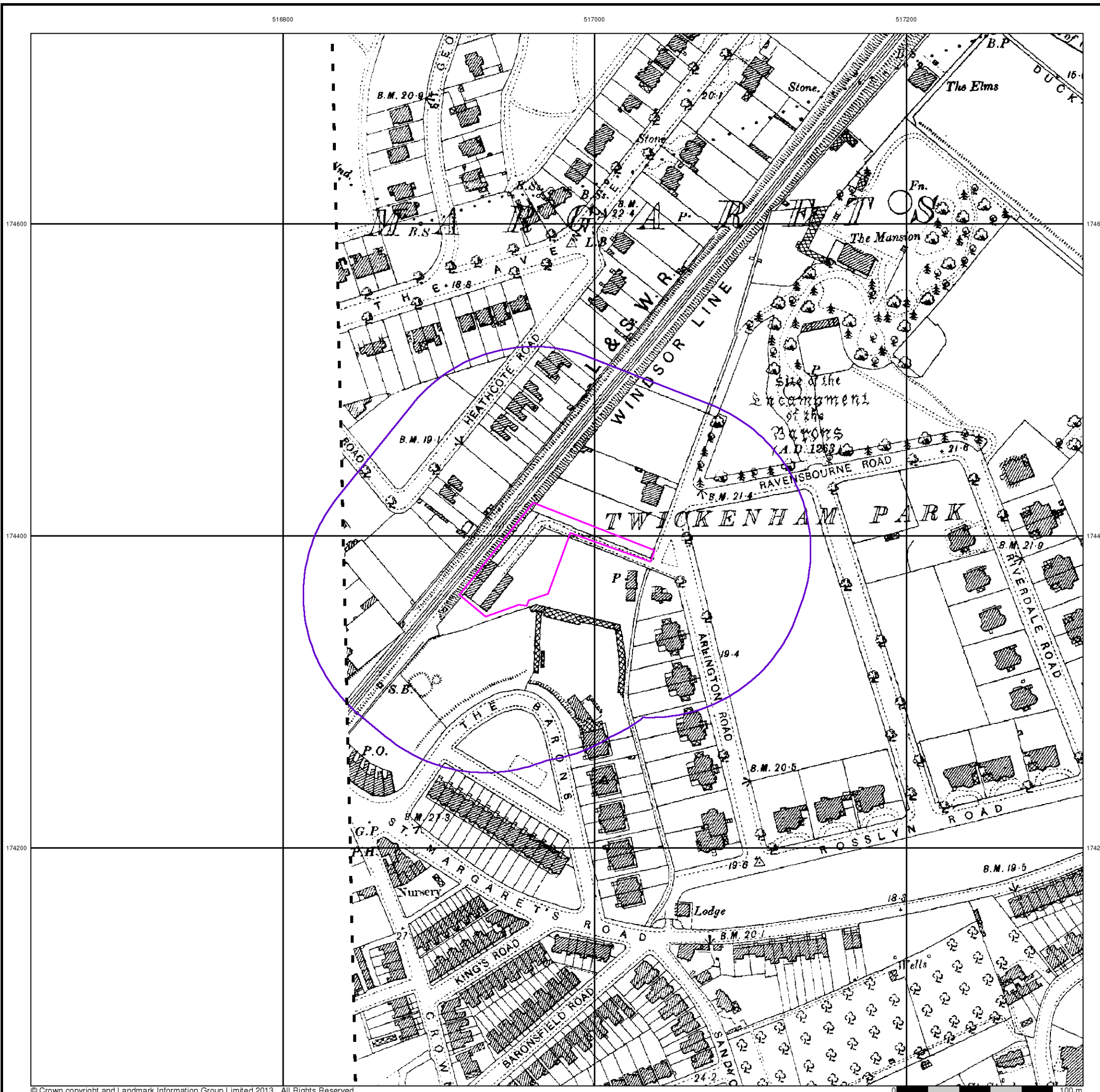


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



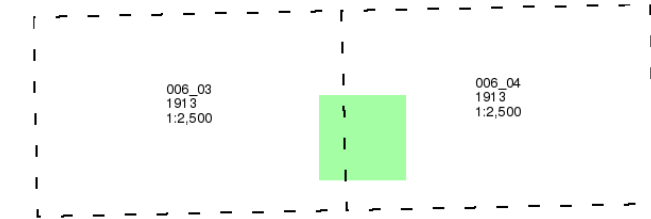
Surrey

Published 1913

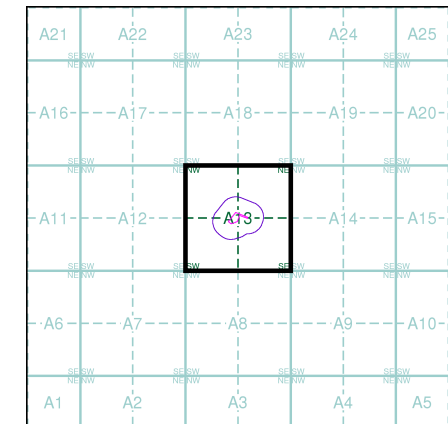
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

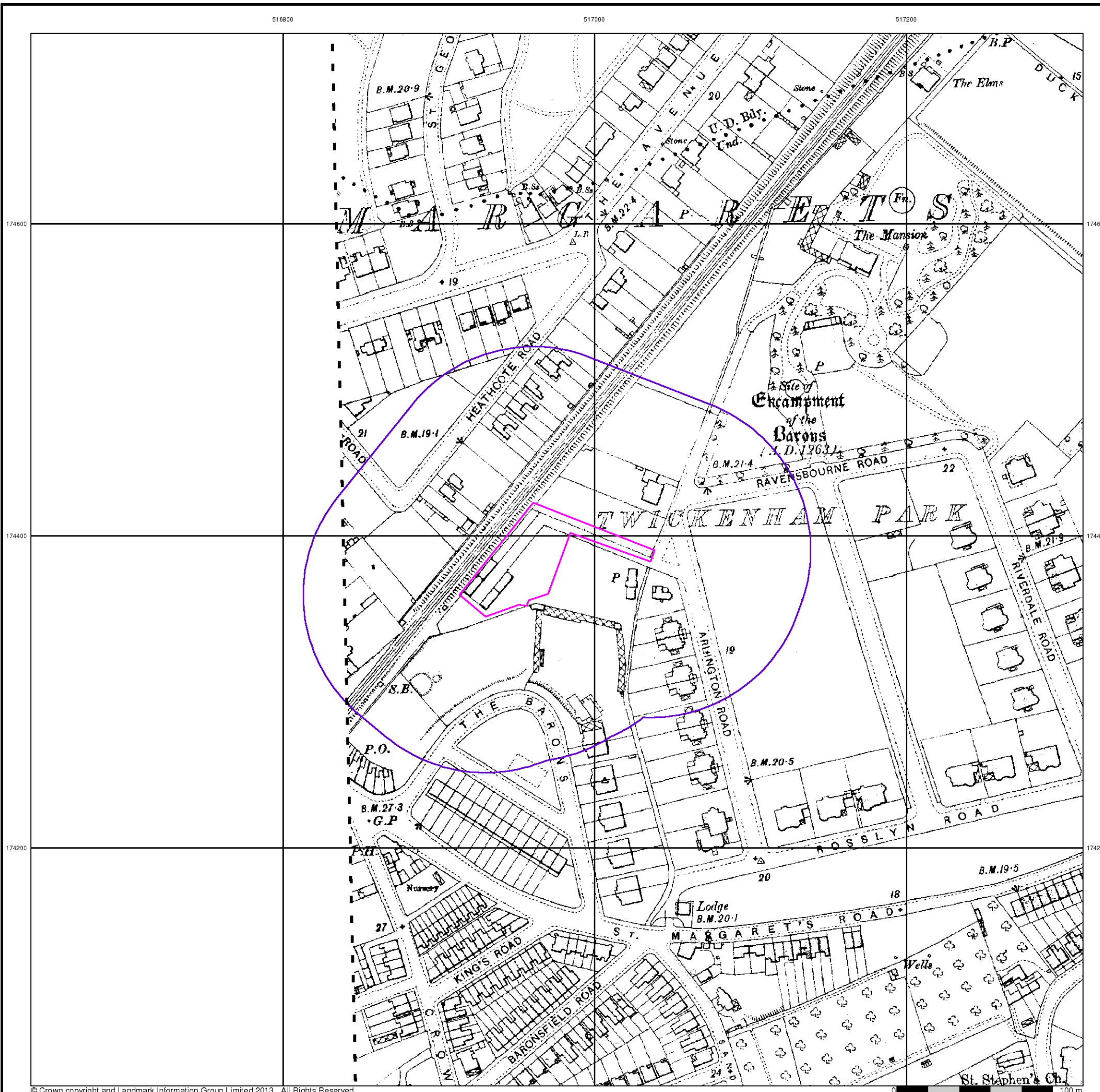


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



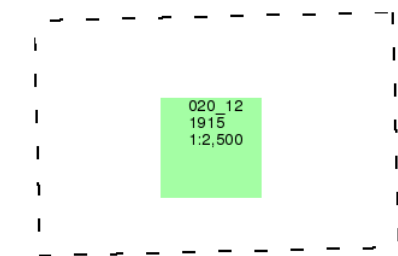
Middlesex

Published 1915

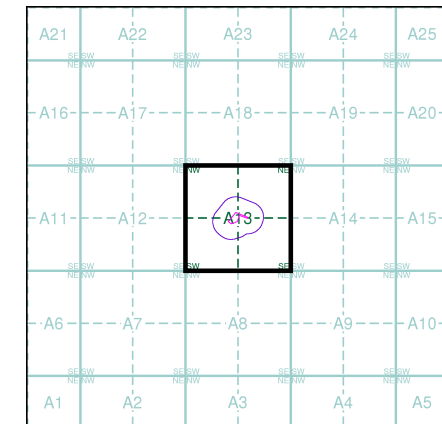
Source map scale - 1:2,500

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

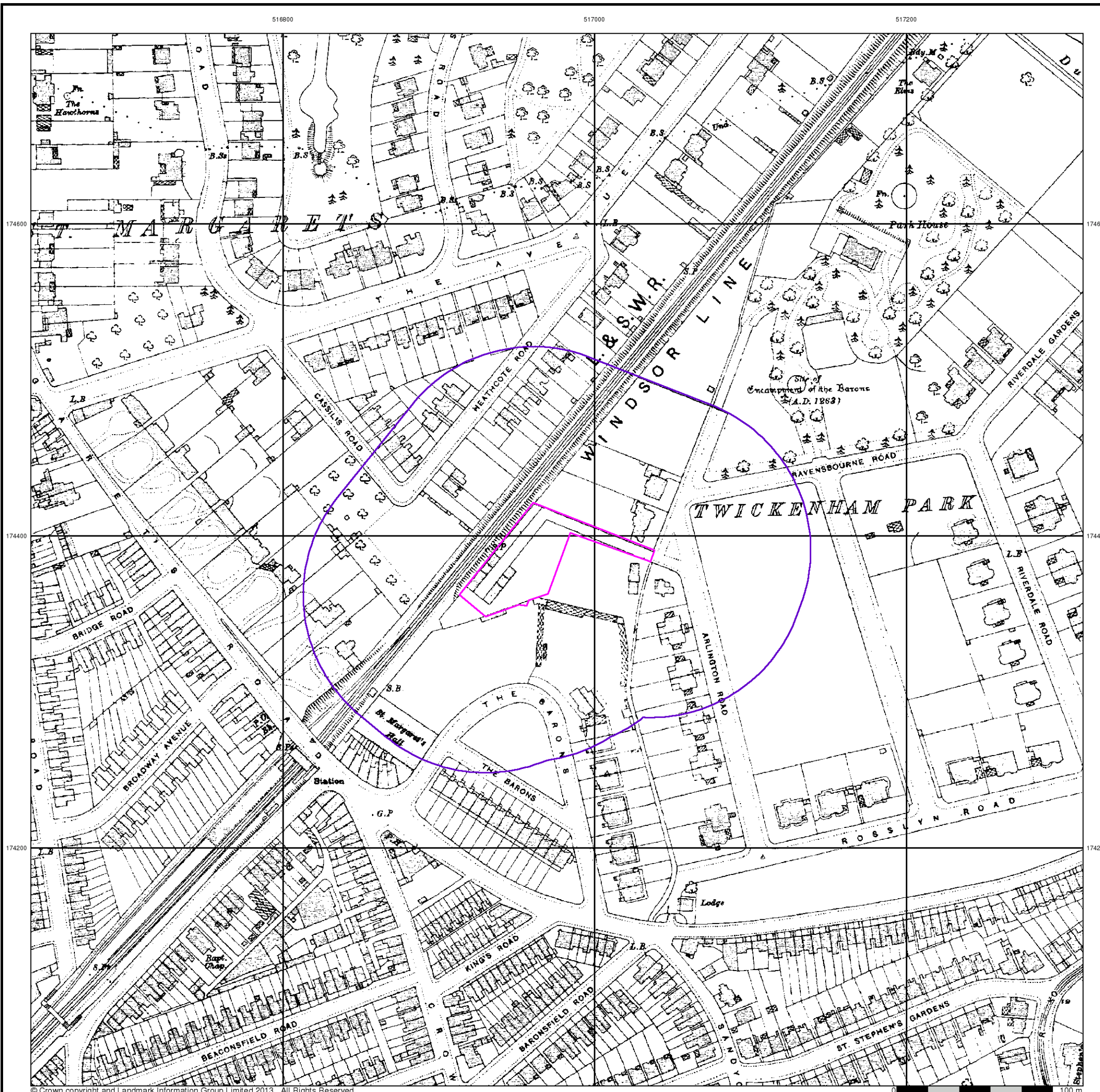


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



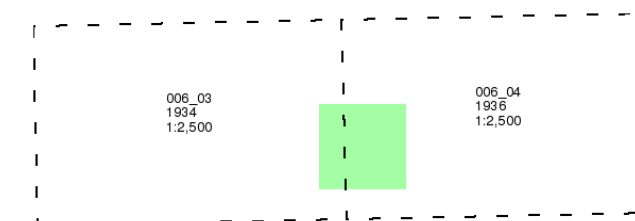
Surrey

Published 1934 - 1936

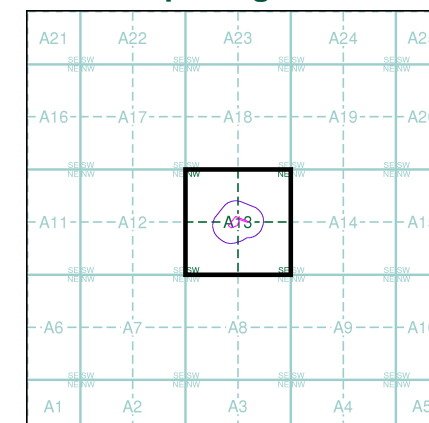
Source map scale - 1:2,500

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

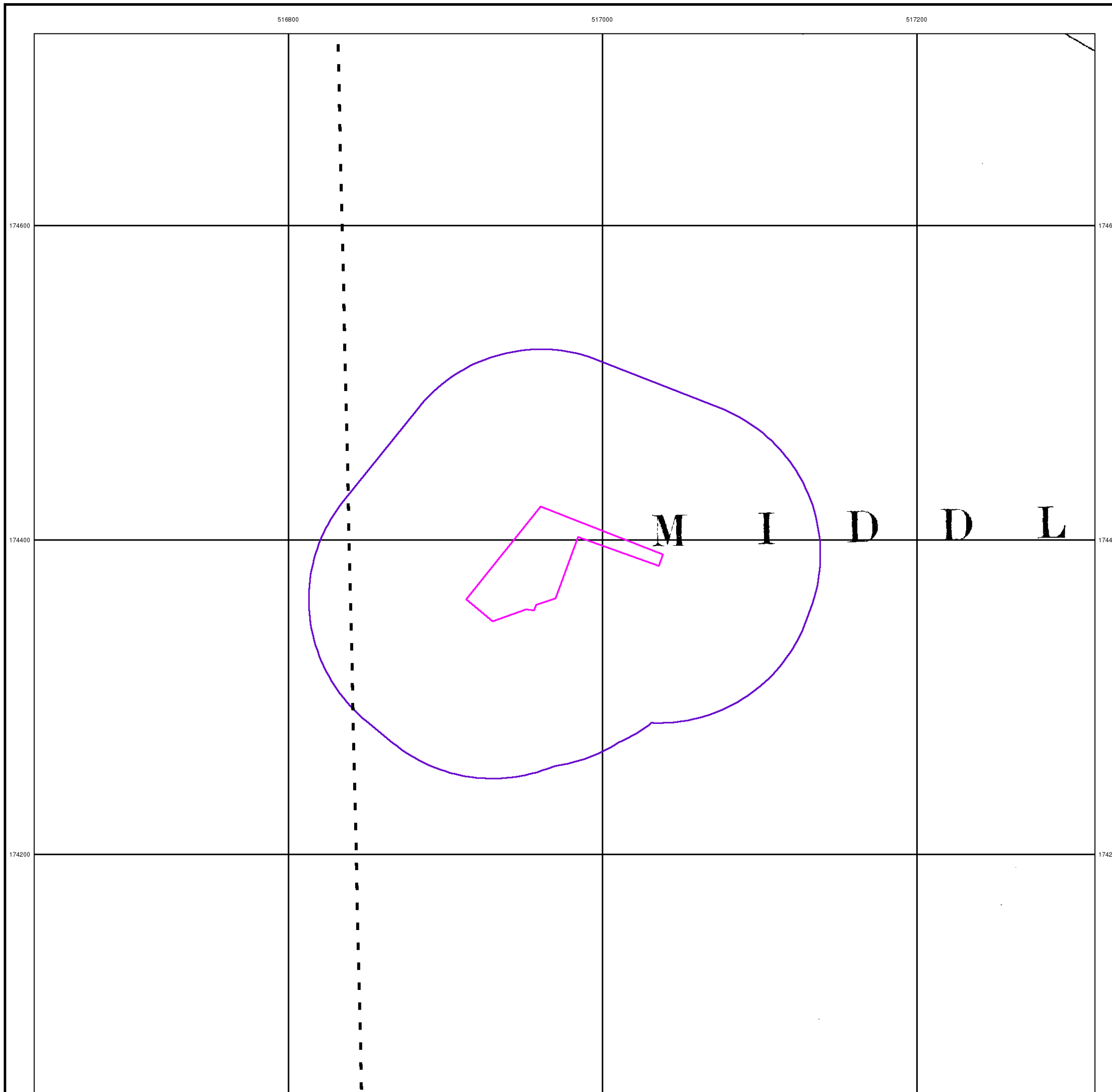


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



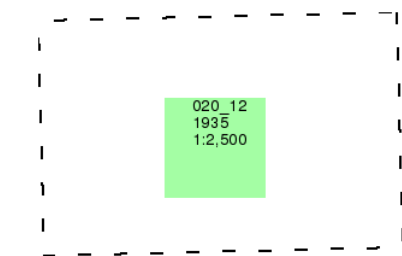
Middlesex

Published 1935

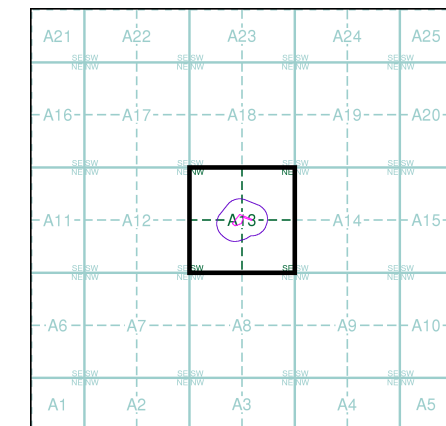
Source map scale - 1:2,500

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

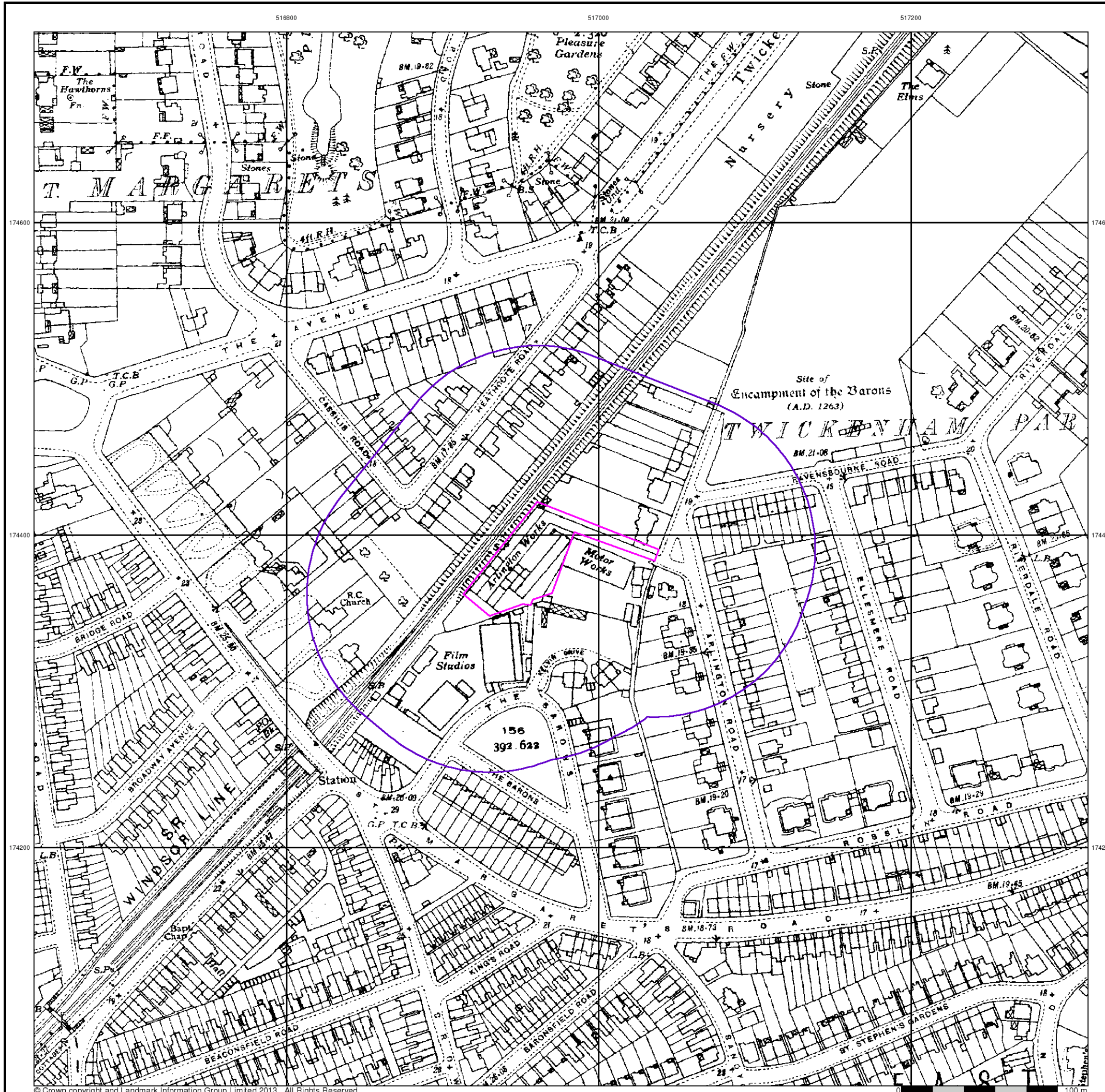


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Historical Aerial Photography

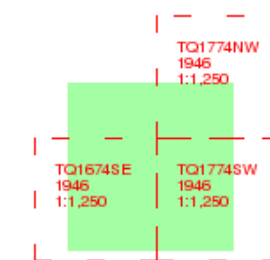
Published 1946

Source map scale - 1:1,250

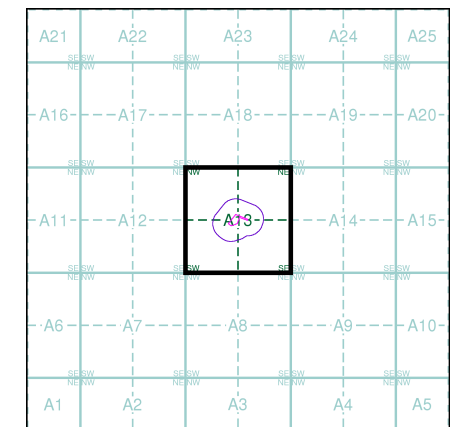
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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Map Name(s) and Date(s)



Historical Aerial Photography - Segment A13



Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Ordnance Survey Plan

Published 1960

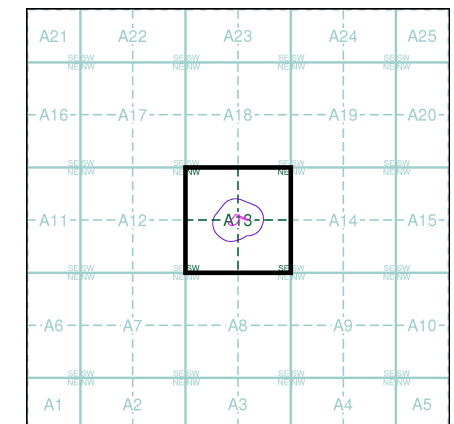
Source map scale - 1:1,250

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)

| | |
|-----------------------------|-----------------------------|
| TQ1674NE 1960 1:1,250 | TQ1774NW 1960 1:1,250 |
| TQ1674SE 1960 1:1,250 | TQ1774SW 1960 1:1,250 |

Historical Map - Segment A13

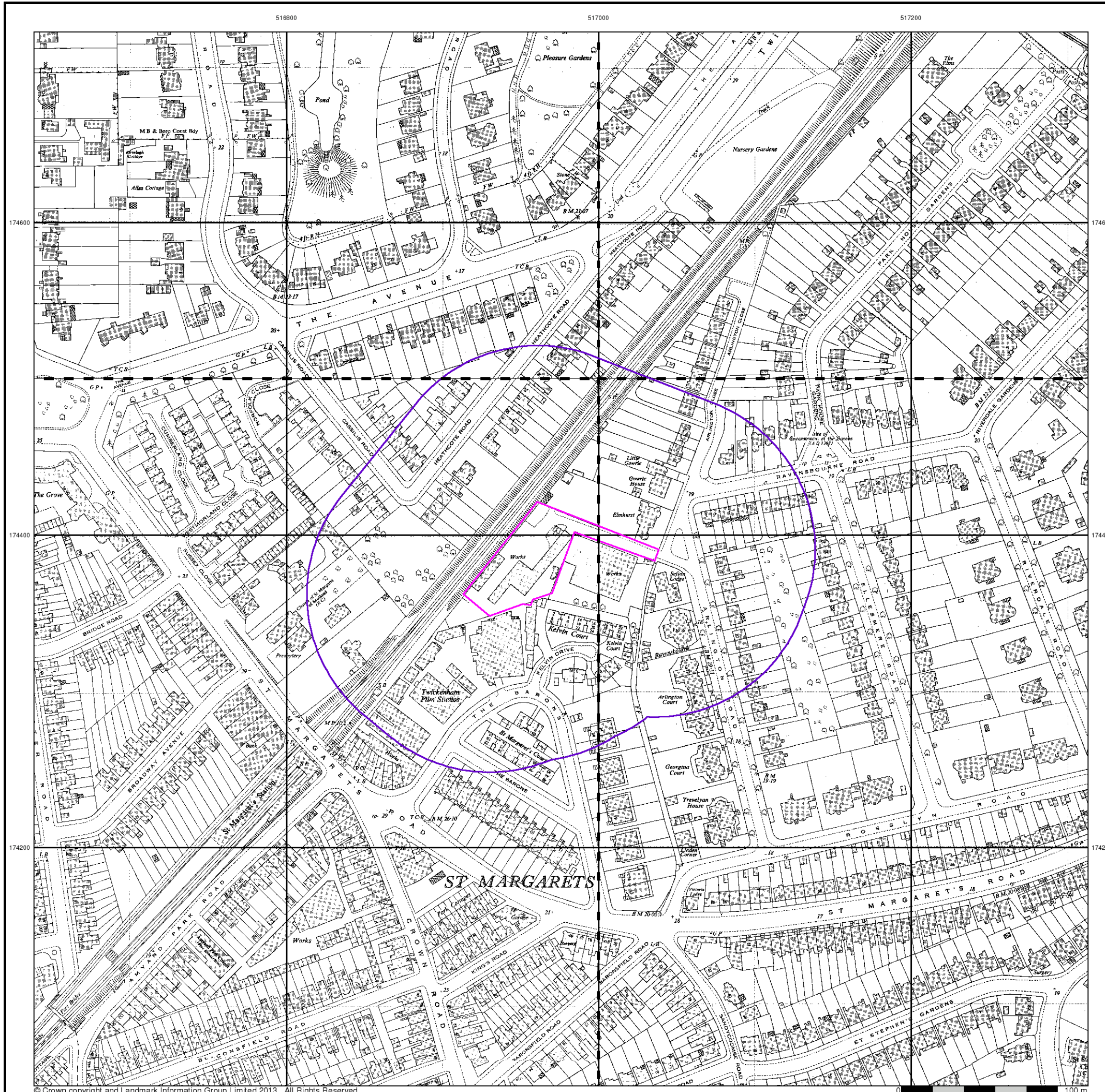


Order Details

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 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Ordnance Survey Plan

Published 1960

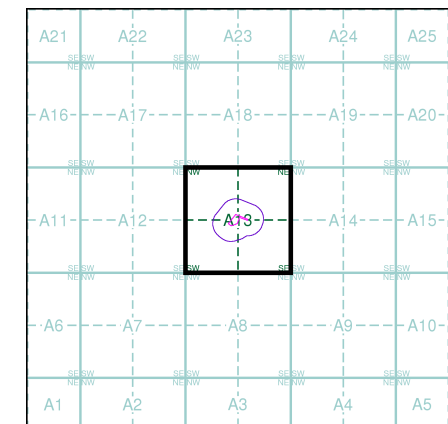
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

| | |
|---------------------------|---------------------------|
| TQ1674 1960 1:2,500 | TQ1774 1960 1:2,500 |
|---------------------------|---------------------------|

Historical Map - Segment A13

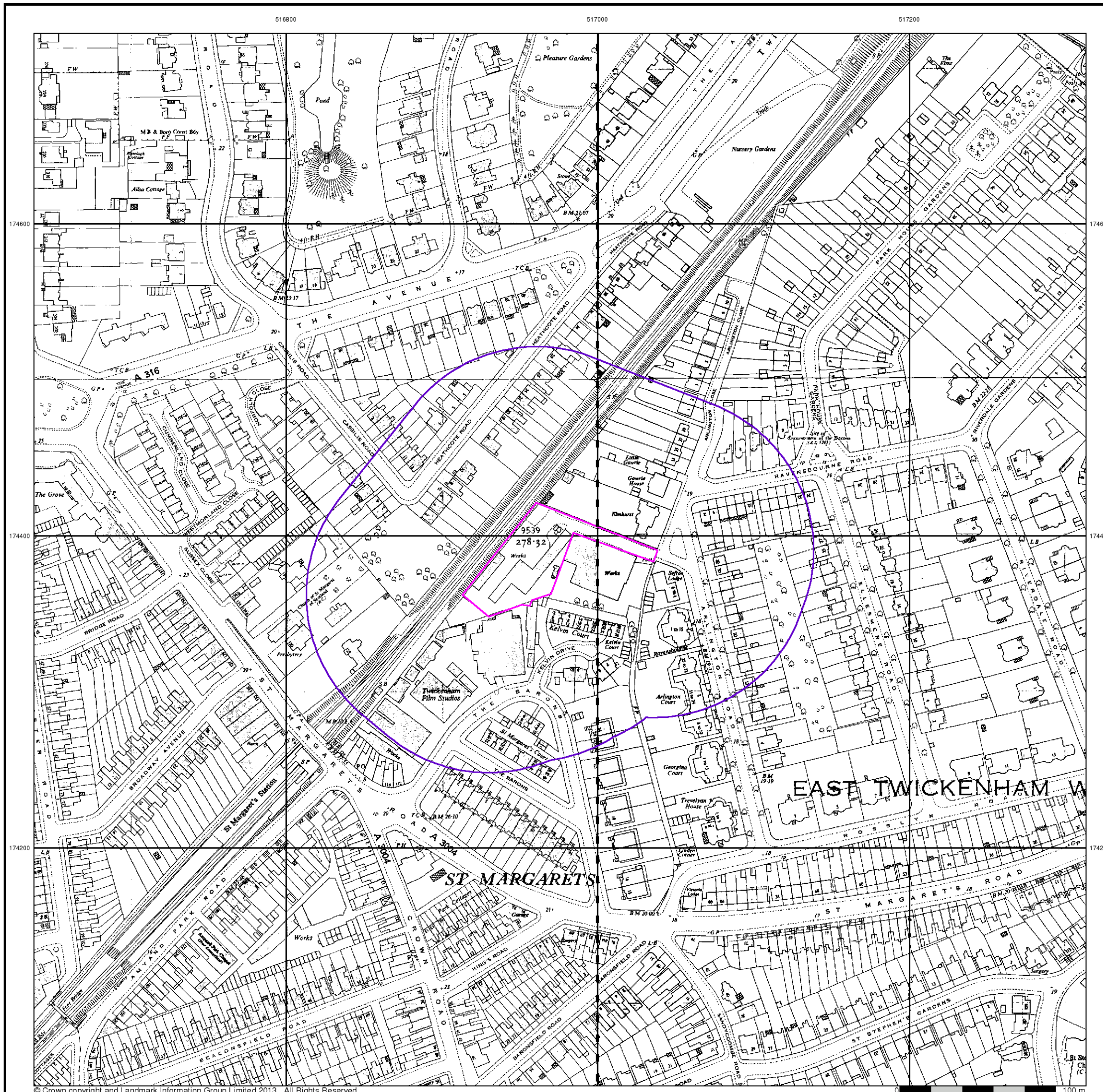


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Ordnance Survey Plan

Published 1973 - 1979

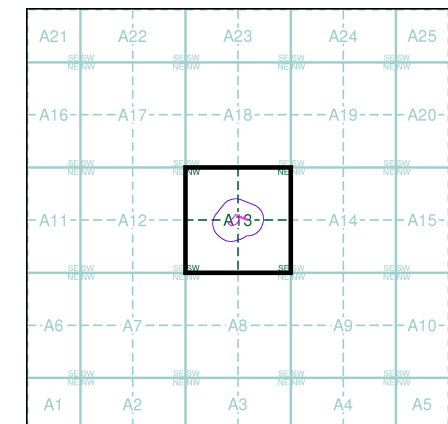
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

| | | |
|----------|------|---------|
| TQ1674NE | 1979 | 1:1,250 |
| TQ1674SE | 1973 | 1:1,250 |

Historical Map - Segment A13

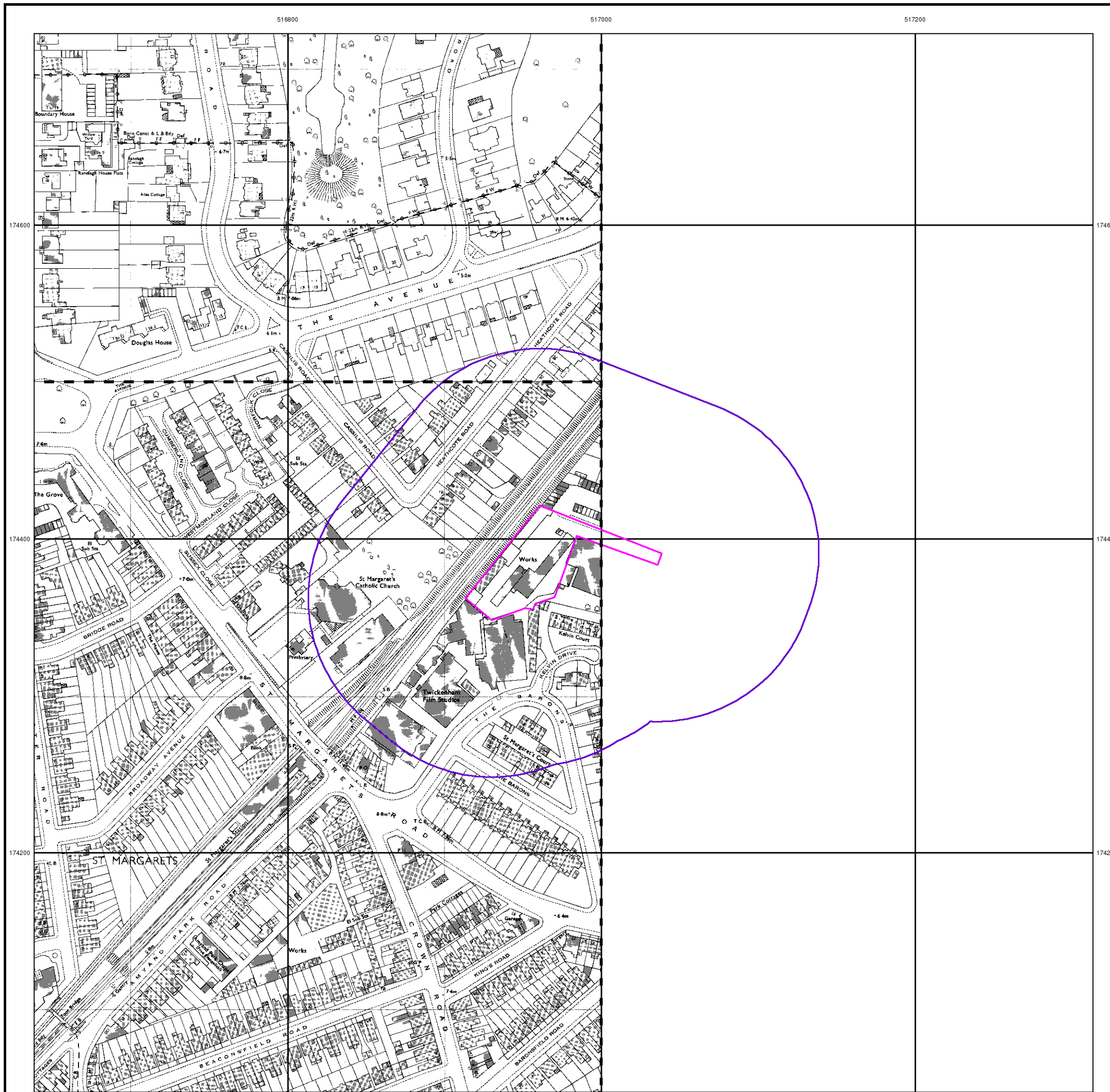


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Supply of Unpublished Survey Information

Published 1973

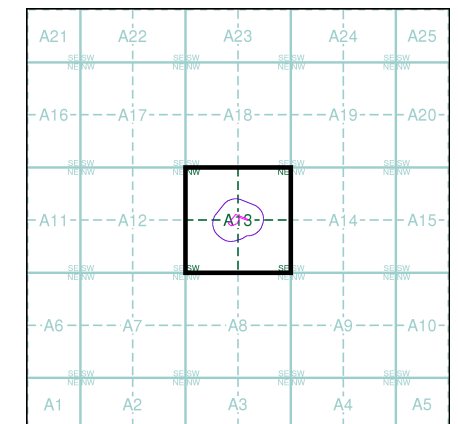
Source map scale - 1:1,250

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)

| | |
|-----------------------------|-----------------------------|
| TQ1674NE 1973 1:1,250 | TQ1774NW 1973 1:1,250 |
| TQ1774SW 1973 1:1,250 | |

Historical Map - Segment A13



Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



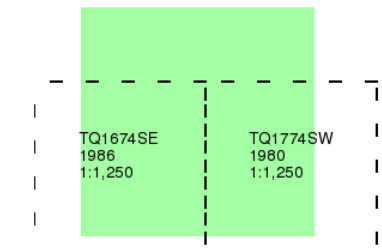
Additional SIMs

Published 1980 - 1986

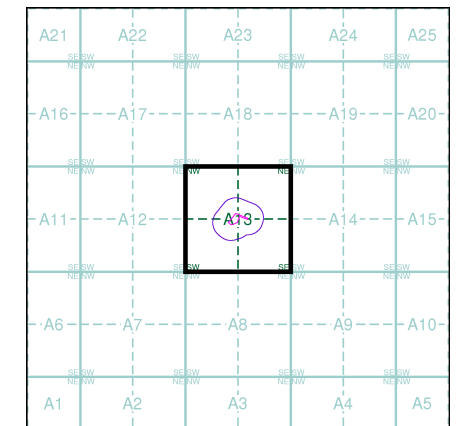
Source map scale - 1:1,250

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

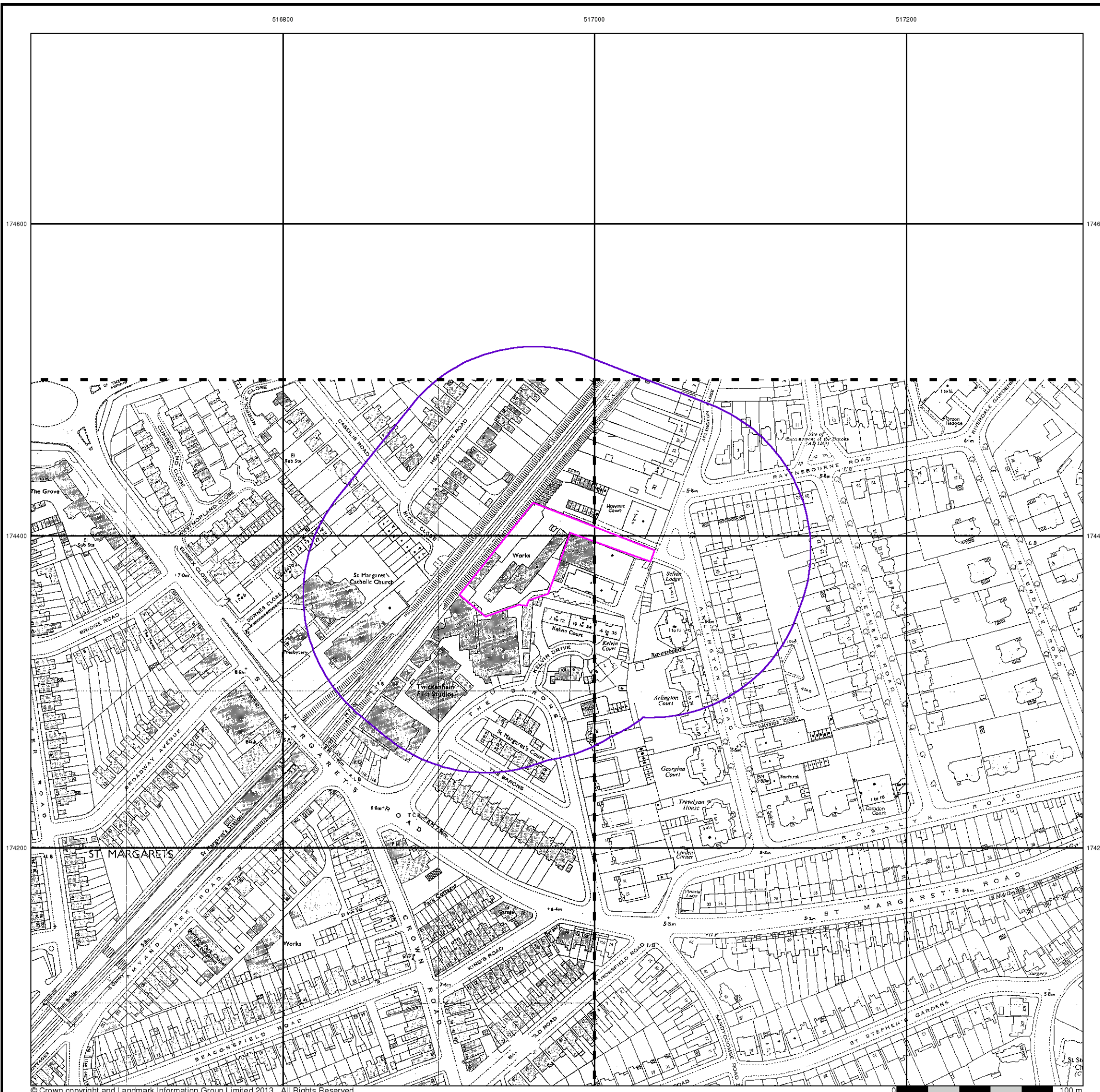


Order Details

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 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



516800

517000

517200

174600

174600

174400

174400

174200

174200



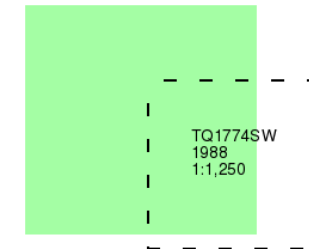
Additional SIMs

Published 1988

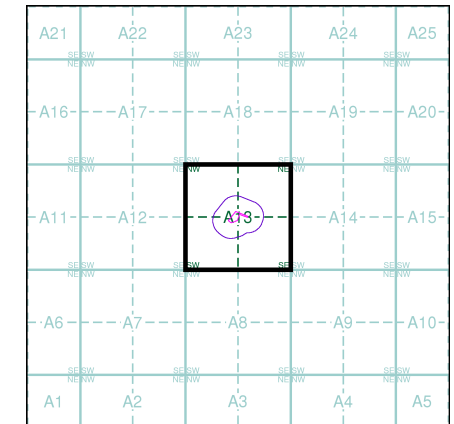
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

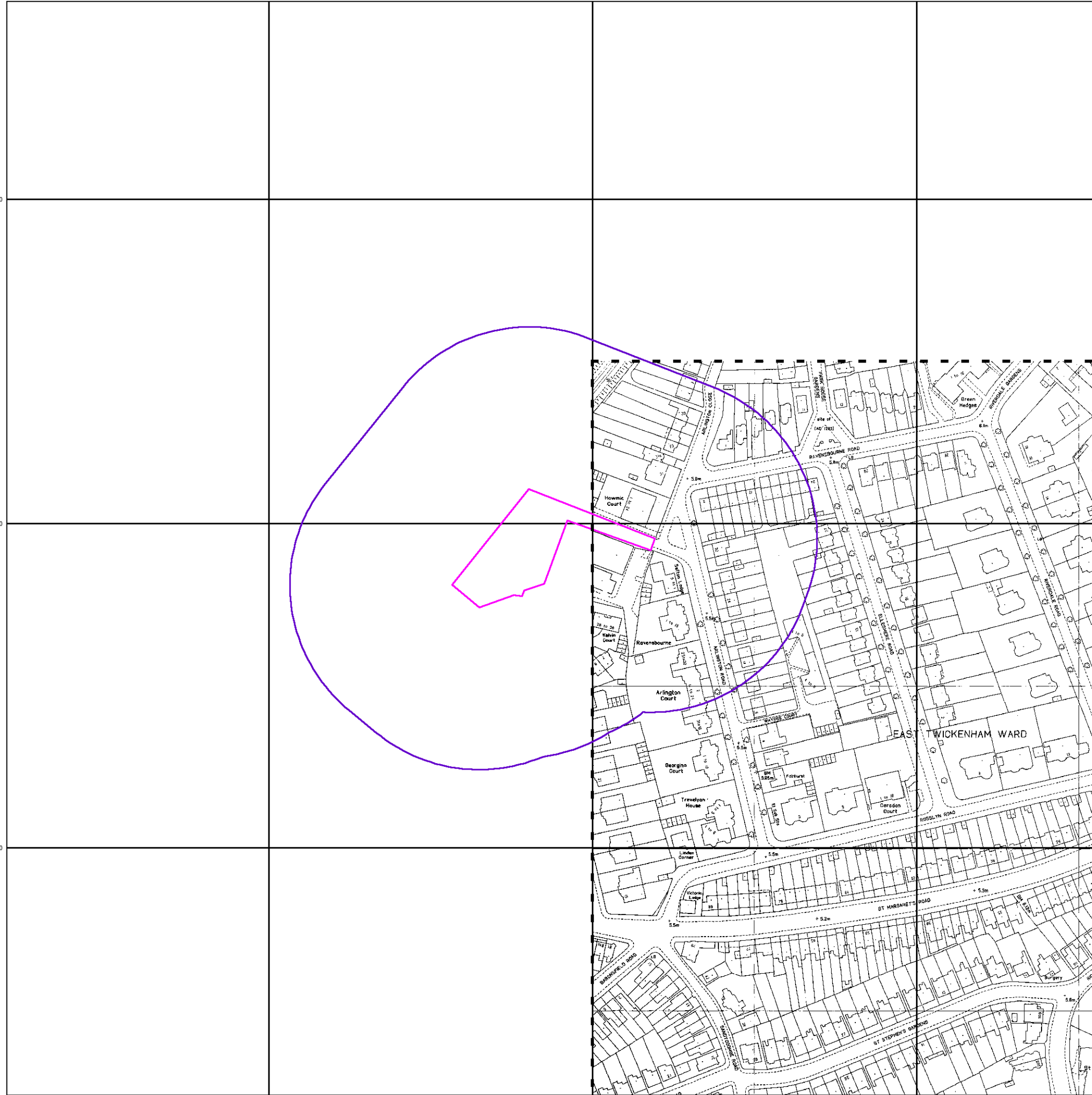
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Customer Ref: LP851
National Grid Reference: 516970, 174380
Slice: A
Site Area (Ha): 0.33
Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



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



Large-Scale National Grid Data

Published 1991

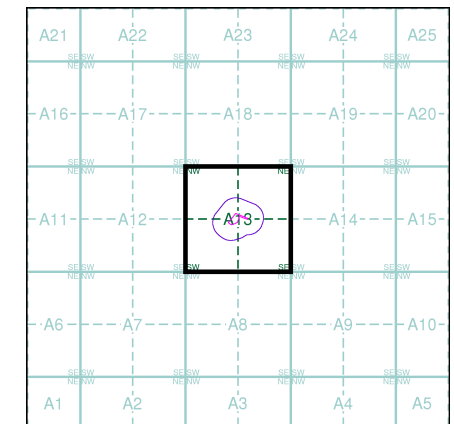
Source map scale - 1:1,250

'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)

| | |
|-----------------------------|-----------------------------|
| TQ1674NE 1991 1:1,250 | TQ1774NW 1991 1:1,250 |
| TQ1674SE 1991 1:1,250 | TQ1774SW 1991 1:1,250 |

Historical Map - Segment A13

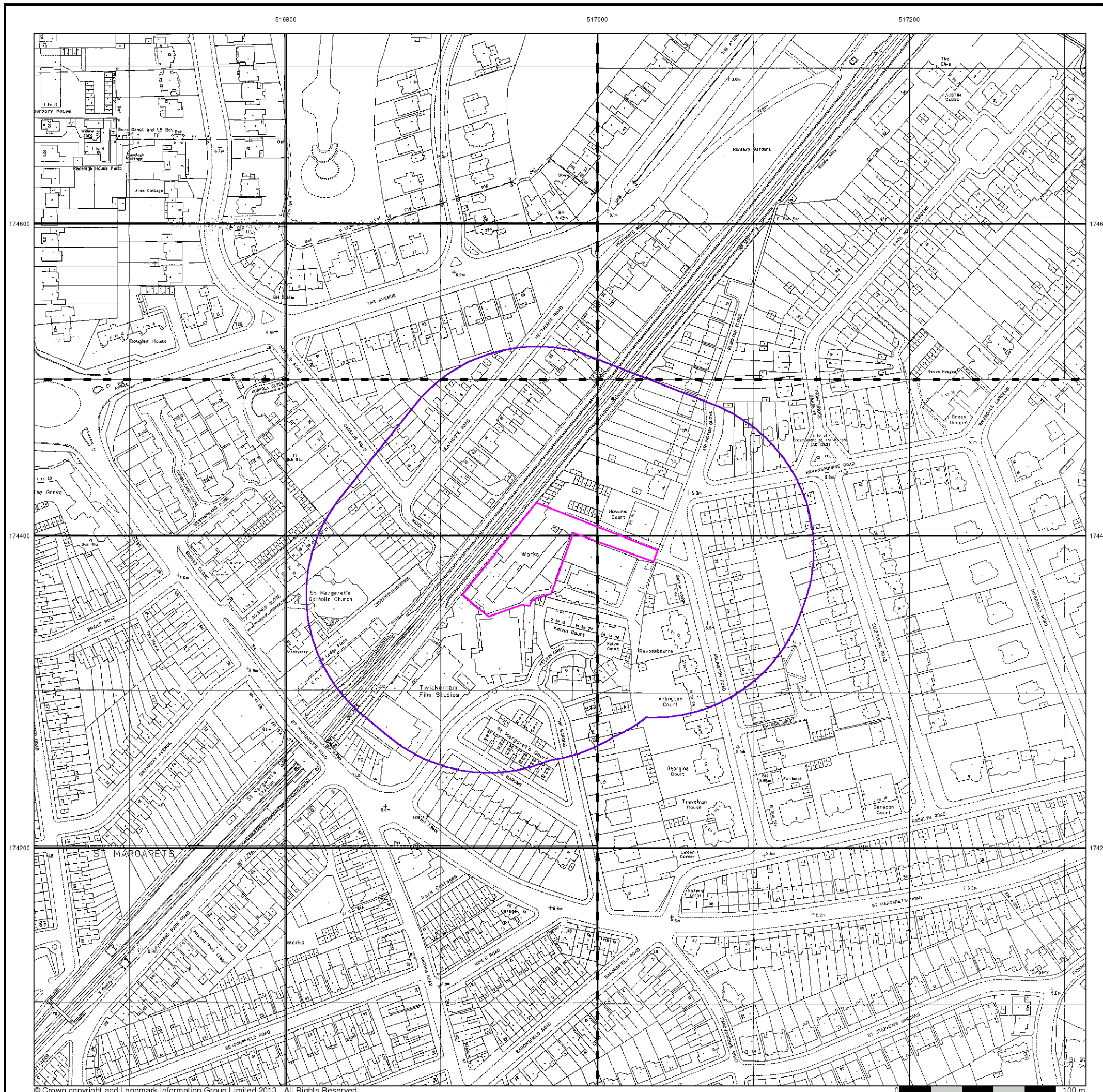


Order Details

Order Number: 62647315_1_1
 Customer Ref: LP851
 National Grid Reference: 516970, 174380
 Slice: A
 Site Area (Ha): 0.33
 Search Buffer (m): 100

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road, TWICKENHAM, TW1 2BB



Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Prepared For

Sharpe's Recycle Oil Ltd
Arlington Works
Arlington Road
Twickenham
TW1 2BB

Client Details

Mrs H Smith, Leap Environmental Ltd, The Atrium
Business Centre, Curtis Road, Dorking, Surrey, RH4 1XA

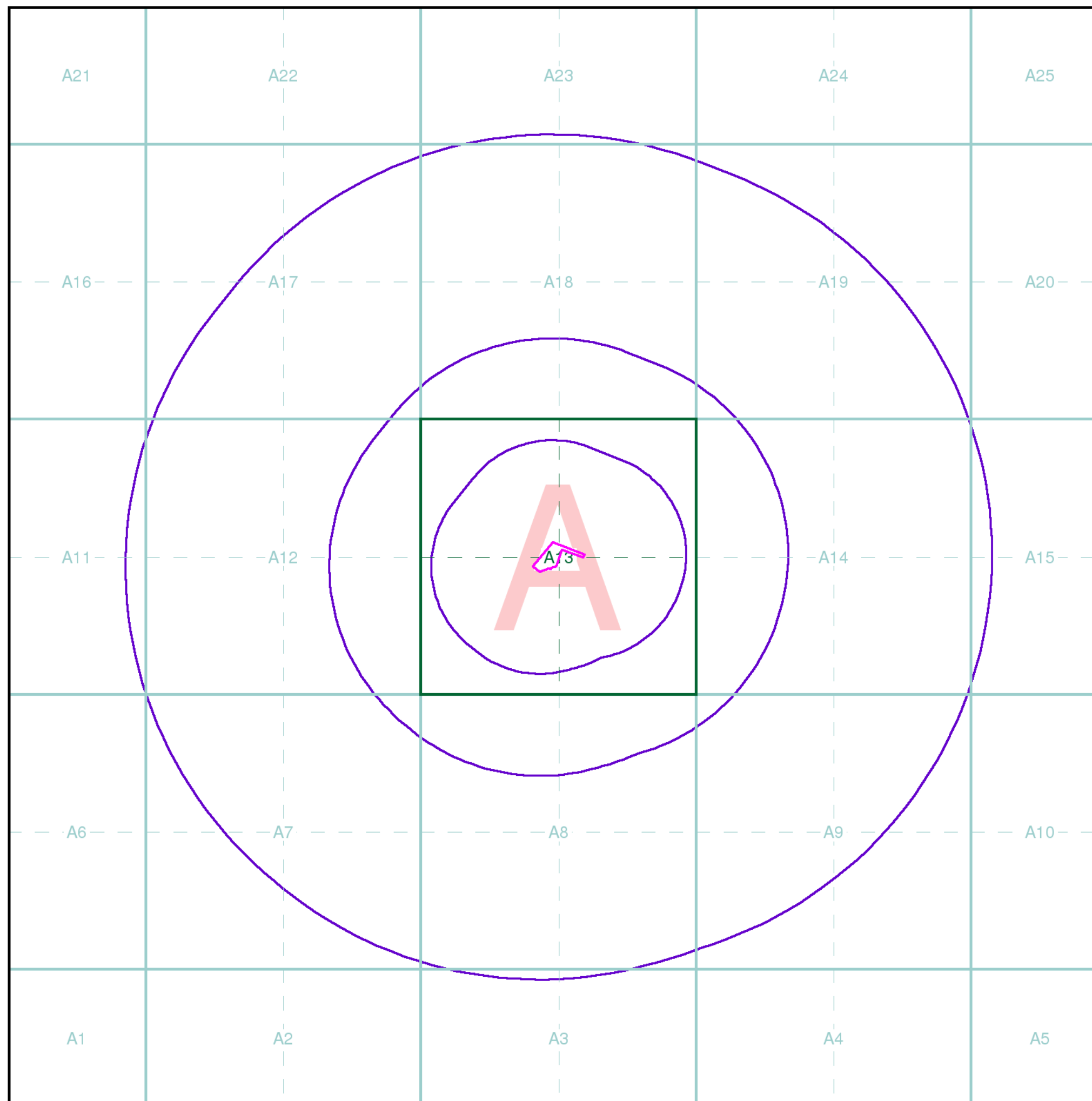
Order Details

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Customer Ref: LP851
National Grid Reference: 516960, 174380
Site Area (Ha): 0.33
Search Buffer (m): 1000

Site Details

Sharpe Refinery Services, Arlington Works, 23 Arlington Road,
TWICKENHAM, TW1 2BB

Full Terms and Conditions can be found on the following link:
<http://www.landmarkinfo.co.uk/Terms/Show/515>



APPENDIX D

Qualitative Risk
Assessment Model

QUALITATIVE RISK ASSESSMENT MODEL

The Qualitative Risk Assessment Model used is based upon that developed by the NHBC¹ (2008) which is itself developed from (DOE, 1995) A Guide to Risk Assessment and Risk Management for Environmental Protection; and the Statutory Guidance on Contaminated Land (Defra, September 2006). The methodology is based on that presented in CIRIA² C552 2001; but differs in terms of the definitions of classification of consequence, which include a consideration of immediacy of hazards.

The key to the classification is that the designation of risk is based upon the consideration of both:

- A) the magnitude of the potential consequence (i.e. severity) [takes into account both the potential severity of the hazard and the sensitivity of the receptor]
- B) the magnitude of probability (i.e. likelihood) [takes into account both the presence of the hazard and receptor and the integrity of the pathway]

These are defined in the tables on the following pages:

Table I Classification of Consequence

| Classification | Definition | Examples |
|----------------|---|--|
| Severe | <p>Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990 Part 2a, if exposure occurs.</p> <p>Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce.</p> <p>Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population.</p> <p>Catastrophic damage to crops, buildings or property.</p> | <p>Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.</p> <p>Major fish kill in surface water from large spillage of contaminants from site.</p> <p>Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity).</p> <p>Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).</p> |
| Medium | <p>Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990 Part 2A if exposure occurs.</p> <p>Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce.</p> <p>Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long term maintenance of the population.</p> <p>Significant damage to crops, buildings or property.</p> | <p>Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.</p> <p>Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability.</p> <p>Ingress of contaminants through plastic potable water pipes/</p> |

¹Guidance for the Safe Development of Housing on Land Affected by Contamination R&S66: 2008 Annex 4

²C552 Contaminated Land Risk Assessment, A Guide to Good Practice

| | | |
|--------------|---|---|
| Mild | <p>Exposure to human health unlikely to lead to “significant harm”.</p> <p>Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce.</p> <p>Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change on its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population.</p> <p>Minor damage to crops, buildings or property.</p> | <p>Exposure could lead to slight short-term effects (e.g. mild skin rash).</p> <p>Surface spalling of concrete.</p> |
| Minor | <p>No measurable effect on humans.</p> <p>Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems.</p> <p>Repairable effects or damage to buildings, structures and services.</p> | <p>The loss of plants in a landscaping scheme.</p> <p>Discolouration of concrete.</p> |

*For these purposes disease is to be taken to mean an unhealthy condition of the body or a part off it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only in so far as it is attributable to the effects on the body of the person concerned.

Table 2 Classification of probability

| Category | Definition | Examples |
|------------------------|--|--|
| High Likelihood | There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution. | <p>A) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden.</p> <p>B) Ground/groundwater contamination could be present from chemical works, containing a number of USTs, having been in operation on the same site for over 50 years.</p> |
| Likely | There is a pollutant linkage and all the elements are present and in the right place which means that it is probably that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long-term. | <p>A) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5 – 1m in a residential garden, or the top 0.5m in public open space.</p> <p>B) Ground/groundwater contamination could be present from an industrial site containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.</p> |
| Low Likelihood | There is pollutant linkage and circumstances are possible under which an event could occur. However it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term. | <p>A) Elevated concentrations of toxic contaminants are present in soils at depths >1m in a residential garden, or 0.5 – 1m in public open space.</p> <p>B) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990s containing a UST in operation over the last 10 years – the tank is double skinned but there is no integrity testing or evidence of leakage</p> |
| Unlikely | There is a pollutant linkage but circumstances are such that it is improbably that an event would occur even in the very long-term. | <p>A) Elevated concentrations of toxic contamination are present below hardstanding.</p> <p>B) Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.</p> |

Risk is then classified as a product of the magnitude of the potential consequence and the likelihood of it coming about as follows:

Table 3. The classification of risk

| | | Consequence | | | |
|--------------------------|-----------------|-------------------|-------------------|-------------------|---------------|
| | | Severe | Medium | Mild | Minor |
| Probability (Likelihood) | High likelihood | Very high risk | High risk | Moderate risk | Low risk |
| | Likely | High risk | Moderate risk | Moderate/low risk | Low risk |
| | Low likelihood | Moderate risk | Moderate/low risk | Low risk | Very low risk |
| | Unlikely | Moderate/low risk | Low risk | Very low risk | Very low risk |

Description of the classified risks

Very high risk

There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence there severe harm to a designated receptor is already occurring. Realisation of the risk is likely o present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short term.

High risk

Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short term and are likely over the longer term.

Moderate risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.

Low risk

It is possible that harm could arise to a designated receptor from identified hazard, but it is unlikely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier

would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.

Very low risk

It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.

No potential risk

There is no potential risk if no pollution linkage has been established.

| Definitions | |
|--------------------------|---|
| Hazard | A property or situation which in certain circumstances could lead to harm. [The properties of different hazards must be assessed in relation to their potential to affect the various different receptors]. |
| Risk | A combination of the probability or frequency of the occurrences of a defined hazard AND the magnitude of the consequence of that occurrence. |
| Probability | The mathematical expression of the chance of a particular event in a given period of time [e.g. probability of 0.2 is equivalent to 20% or a 1 in 5 chance]. |
| Likelihood | Probability; the state or fact of being likely. |
| Consequences | The adverse effects (or harm) arising from a defined hazard which impairs the quality of the environment or human health in the short or longer term. |
| Pollution Linkage | An identified pathway is capable of exposing a receptor to a contaminant and that contaminant is capable of harming the receptor. |

| Contaminant | Receptor | Route ¹ | Pathway ¹ | Likelihood of Occurrence ² | Severity of Consequence ² | Risk Classification ³ | Notes |
|---|---------------------------------|---|--|---------------------------------------|--------------------------------------|----------------------------------|---|
| Polyaromatic Hydrocarbons, Petroleum Hydrocarbons, VOCs and SVOCs | Future Residents | 1 | Ingestion of soil | Likely | Medium | Moderate risk | Pathways involving dermal contact are more likely to occur, though would have less severe consequences. The severity of the consequences is generally related to the levels of contamination present, which has been estimated from what we have determined about the site from the desk study. |
| | | 2 | Ingestion of household dust | Likely | Medium | Moderate risk | |
| | | 3 | Ingestion of contaminated vegetables | Low likelihood | Medium | Moderate/low risk | |
| | | 4 | Ingestion of soil attached to vegetables | Low likelihood | Medium | Moderate/low risk | |
| | | 5 | Dermal contact with soil | High likelihood | Mild | Moderate risk | |
| | | 6 | Dermal contact with household dust | High likelihood | Mild | Moderate risk | |
| | | 7 | Inhalation of fugitive soil dust | Likely | Medium | Moderate risk | |
| | | 8 | Inhalation of fugitive household dust | Likely | Medium | Moderate risk | |
| | | 9 | Inhalation of vapours outside | Low likelihood | Medium | Moderate/low risk | |
| | | 10 | Inhalation of vapours inside | Likely | Medium | Moderate risk | |
| | Future Residents and Neighbours | | Inhalation of vapours via contaminated groundwater plume | Low likelihood | Medium | Moderate/low risk | Inhalation of vapours is considered to be of low likelihood due to the nature of the product handled at the site. |
| | Construction workers | 1 | Ingestion of soil | Low likelihood | Medium | Moderate/low risk | The risk posed to construction workers is considered to be moderate as the potential exposure and dust generation could be high. However, the exposure duration is anticipated to be short and risks could be mitigated through good construction practises and hygiene measures. |
| 5 | | Dermal contact with soil | High likelihood | Mild | Moderate risk | | |
| 7 | | Inhalation of fugitive soil dust | Likely | Medium | Moderate risk | | |
| 9 | | Inhalation of vapours outside | Low likelihood | Medium | Moderate/low risk | | |
| | Groundwater | | Intergranular flow of free product | Likely | Mild | Moderate/low risk | The risk is considered to be moderate and the sensitivity of the receiving aquifer is fairly low. Given the urban nature of the site and the limited saturated aquifer thickness, the potential for potable groundwater abstraction is low. |
| | | Rainwater infiltration and leaching of contaminated soils | Likely | Mild | Moderate/low risk | | |
| | Surface water | | Rainwater infiltration and leaching, intergranular flow via groundwater to controlled waters | Low likelihood | Medium | Moderate/low risk | It is unlikely groundwater from the site will significantly impact the River Thames as it is positioned over 400m from the site. There are no onsite or nearby surface water resources identified, |

| Contaminant | Receptor | Route ¹ | Pathway ¹ | Likelihood of Occurrence ² | Severity of Consequence ² | Risk Classification ³ | Notes | |
|--------------|---|--------------------|---|--|--------------------------------------|----------------------------------|---|---|
| | | | Surface water run-off | Unlikely | Mild | Very low risk | and any that exist are likely to be of low sensitivity. | |
| | Material construction of buildings and infrastructure | | Contact of building materials, including water supply pipes with contaminated soils and/or contaminated groundwater | Likely | Medium | Moderate risk | Underground structures will be in prolonged contact with the ground. The risk should be assessed and mitigated through appropriate design. | |
| Heavy Metals | Future Residents | 1 | Ingestion of soil | Likely | Medium | Moderate risk | Pathways involving dermal contact are more likely to occur, though would have less severe consequences. The severity of the consequences is generally related to the levels of contamination present, which has been estimated from what we have determined about the site from the desk study. | |
| | | 2 | Ingestion of household dust | Likely | Medium | Moderate risk | | |
| | | 3 | Ingestion of contaminated vegetables | Low likelihood | Medium | Moderate/low risk | | |
| | | 4 | Ingestion of soil attached to vegetables | Low likelihood | Medium | Moderate/low risk | | |
| | | 5 | Dermal contact with soil | High likelihood | Mild | Moderate risk | | |
| | | 6 | Dermal contact with household dust | High likelihood | Mild | Moderate risk | | |
| | | 7 | Inhalation of fugitive soil dust | Likely | Medium | Moderate risk | | |
| | | 8 | Inhalation of fugitive household dust | Likely | Medium | Moderate risk | | |
| | Construction workers | 1 | Ingestion of soil | Low likelihood | Medium | Moderate/low risk | The risk posed to construction workers is considered to be moderate as the potential exposure and dust generation could be high. However, the exposure duration is anticipated to be short and risks could be mitigated through good construction practises and hygiene measures. | |
| | | 5 | Dermal contact with soil | High likelihood | Mild | Moderate risk | | |
| | | 7 | Inhalation of fugitive soil dust | Likely | Medium | Moderate risk | | |
| | Groundwater | | | Rainwater infiltration and leaching of contaminated soils | Low likelihood | Mild | Low risk | Mobilisation of metals is low, accept in acidic conditions. |
| | Surface water | | | Rainwater infiltration and leaching, intergranular flow via groundwater to controlled waters | Low likelihood | Medium | Moderate/low risk | Mobilisation of metals is low, accept in acidic conditions. |

| Contaminant | Receptor | Route ¹ | Pathway ¹ | Likelihood of Occurrence ² | Severity of Consequence ² | Risk Classification ³ | Notes |
|-------------|----------------------|--------------------|---------------------------------------|---------------------------------------|--------------------------------------|----------------------------------|--|
| | | | Surface water run-off | Unlikely | Mild | Very low risk | |
| Asbestos | Future Residents | 7 | Inhalation of fugitive soil dust | Likely | Severe | High risk | Consequences of asbestos inhalation even at very low concentrations have the potential to be severe. |
| | | 8 | Inhalation of fugitive household dust | Likely | Severe | High risk | |
| | Construction workers | 7 | Inhalation of fugitive soil dust | Likely | Severe | High risk | Consequences of asbestos inhalation even at very low concentrations have the potential to be severe. |

Notes to table:

1. Classification of human exposure pathways (routes) from *The CLEA model, Research and Development Publication CLR10.*
2. Classification of Probability and Consequence from *CIRIA C552 Contaminated land risk assessment, a guide to good practice 2001*
3. Risk Classification from *DETR Guidelines for Environmental Risk Assessment and Management, 2000*

APPENDIX E

Site Photographs



Plate 1: View of the tank farm from the site entrance



Plate 2: Storage of process chemicals