



85 PELL STREET, READING

PHASE I & II GEO-ENVIRONMENTAL ASSESSMENT
FOR
MEGAN RIVERS

Project Ref:
EAL.34.24

Date:
November 2024

Prepared for:
Megan Rivers,
25 Bownham Park,
Rodborough Common,
GL5 5BY

Prepared by:		Daniel Wade <i>Associate</i>
Date:	November 2024	
Version:	1.0	

Executive Summary

This presents the salient points of the report and should not be referred to in isolation. The conclusions and recommendations presented below are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate Regulatory Authorities and / or other organisations (as appropriate) by the Client for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

SUMMARY TABLE: PHASE I & II GEO-ENVIRONMENTAL ASSESSMENT	
SITE:	85 Pell Street, Reading
CLIENT:	Megan Rivers
DATE:	November 2024
REFERENCE	EAL.34.24
DEVELOPMENT PROPOSAL:	Demolition of the existing buildings and construction of a three storey residential flat.
HUMAN HEALTH:	Remediation required – capping of landscaped gardens and CS2 ground gas protection measures.
CONTROLLED WATERS:	Very low risk – no further work considered necessary
GROUND GAS:	CS2 ground gas protection measures.
UST:	The former fuel tanks and fuel lines should be identified and decommissioned/removed.

The executive summary given above is an overview of the key findings and conclusions of the report. There may be other information contained in the body of the report which puts into context the findings of the executive summary. No reliance should be placed on the executive summary until the whole report has been read in full.

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1.0 INTRODUCTION

1.1 PREAMBLE

Erda Associates Ltd. (Erda) has been appointed by Megan Rivers (hereafter referred to as 'the client') to undertake a Phase I & II Site Appraisal to provide a pre-development contamination and geotechnical assessment of the site known as *85 Pell Street, Reading*. Site location and boundary plans are included in **Appendix A**.

The works reported within this document comprise a desktop study and the undertaking of an intrusive ground investigation along with geotechnical testing and chemical analysis.

This document is intended to provide information that will assist decision making by identifying and recommending solutions to ground engineering and contamination issues.

1.2 PROJECT BRIEF

The brief for the Phase I & II Geo-Environmental Assessment incorporates:

- A review and assessment of the site history, with reference to potentially contaminative uses.
- A review of regulatory authority and environmental data relating to the site and its environs.
- A site inspection.
- An appraisal of potential environmental risks.
- Development of a Phase I Conceptual Model
- Provide a strategy for, and to implement, a Phase II Environmental and Geotechnical Assessment.
- To determine any ground related contamination hazards that may affect the proposed development.
- Development of the Phase II Conceptual Model.
- To provide advice on further works required for the reduction of risks to the development and procedures likely to satisfy regulators.

Whilst every effort has been made to pre-empt the likely requirements of the Local Authority and the Environment Agency, they may have specific requirements that will need to be discussed and addressed at a later date.

1.3 DATA REFERENCES

- British Geological Survey Online Geological Mapping.
- BSI (2020), BS 5930:2015+A1 2020 Code of practice for ground investigations.
- CIRIA (2007), C665 Assessing Risks Posed by Hazardous Ground Gases to Buildings.
- PHE-BGS (2011), Joint Indicative Atlas of Radon in Great Britain.
- EA (2020), LCRM: How to assess and manage the risks from land contamination.

1.4 LIMITATIONS

This report has been produced in accordance with industry best practice at the time of writing.

In the production of this report, Erda Associates Ltd., have relied upon information provided by third parties. Erda Associates Ltd cannot accept responsibility for the reliability and authenticity of this information. Erda Associates Ltd. will not be responsible for any opinions which it has expressed, or conclusions which it has drawn, in reliance upon information which is subsequently proven to be inaccurate.

All statements and opinions provided in this report have been reported in good faith and are based on the information gained during, and restrictions imposed by, site investigation techniques used at the time. Erda Associates Ltd cannot be held responsible for conditions not revealed by the investigation.

This report has been prepared for the sole use of the client and shall not be relied upon or transferred to third parties without the express written consent of Erda Associates Ltd. Unauthorised third parties rely upon the information contained within this report at their own risk.

1.5 PROPOSED DEVELOPMENT

The client intends to develop by demolition of the existing buildings and construction of a three storey residential flat.

2.0 PHASE I GEO-ENVIRONMENTAL ASSESSMENT

2.1 SITE SETTING

The site is situated 750m to the south of Reading town centre.

The site is roughly centred at national grid reference SU 71644 72820.

Site location and boundary plans are presented in **Appendix A**.

2.2 SITE HISTORY

Ordnance Survey maps have been reviewed for the years 1879 - 1996. The OS maps are contained in **Appendix B**, for reference.

The summary below identifies the historical features identified on the historical mapping data considered likely to have the potential to affect the site. All distances are approximates.

Date	Identified On-site Hazard	Identified Off-site Hazard
1879	The site is shown as being formed of the rear garden of two residential properties and contains two outbuildings.	The site is set in a predominantly urban setting, with residential housing to the north, east and south. An allotment is present to the west. Reading Tin Works is present 120m to the north east. The River Kennet is 250m to the west. An iron works is present 275m to the west. Katesgrove Kilns (Brick, Tile and Drain Pipes) is present 200m south west.
1899	There has been no significant change to the sites use.	Katesgrove Kilns is no longer present. Reading Tin Works has extended to the west and is now 90m to the north east. Pell Street has been constructed immediately south of the site. The allotments now contain residential housing.
1912	A large building is present centrally in the site.	The iron works is no longer present. A railway line and good depot is present in its place.
1931	The building appears to have been extended to the west.	There has been no significant change to the neighbouring sites use.
1957	The site is illustrated as a garage.	The Tin Works are now labelled as a Works.
1962	The site is shown as being a filling station	The former Tin Works are now a Metal Box Works.
1968	There has been no significant change to the sites use.	The former Tin Works are no longer present, partially constructed over with residential.
1982	There has been no significant change to the sites use.	There has been no significant change to the neighbouring sites use.
1996	There has been no significant change to the sites use.	There has been no significant change to the neighbouring sites use.

Significant Features identified on OS Maps:

On-site hazard: The site was formerly used as a garage and a filling station

Off-site Hazard: Former Tin Works, Iron Works and Kilns all within the general vicinity, but none are thought to pose a significant risk.

2.3 SITE DESCRIPTION

The site was formed of a disused building, located centrally, and recently devegetated land around it which was accessed from Pell Street to the south. Generally, the site was level.

The building was not accessed during the site walkover.

The majority of the site was formed of hardstanding. However, in places this was in poor condition due to vegetation growth.

In the west of the site, small stockpiles of construction materials were present.

Signage present at the site indicates the sites most recent uses were as a salvage yard.

There was no obvious visual or olfactory evidence of contamination.

2.3 ANTICIPATED GEOLOGY

Artificial and/or Made Ground is not reported to be present, however should be anticipated given the sites former uses.

Superficial deposits of the Taplow Gravel Member are reported in the east of the site.

A solid strata geology of the Lambeth Group (clay, silt and sand) is reported across the site. This strata generally consists of beds of mudstone, sandstone and siltstone with thin coal seams.

To the north, the Seaford Chalk Formation and Newhaven Chalk Formation is recorded.

2.4 HYDROGEOLOGY

The Superficial deposits are designated as a Secondary A Aquifer.

The Lambeth Group is designated as a Secondary A Aquifer.

The Seaford Chalk Formation and Newhaven Chalk Formation, to the north are recorded as Principal Aquifers.

2.5 HYDROLOGY

The River Kennet is present 250m to the west.

2.6 COAL MINING

The south of the site is located outside of a Coal Authority designated Development High Risk Area and therefore no further assessment is considered necessary.

2.7 LANDFILLS

The nearest landfill is shown 725m to the south east of the of the site.

2.8 RADON GAS ASSESSMENT

The site is located in an area where between 1% and 3% of properties are affected by Radon.

Therefore, no Radon protection measures are considered necessary.

3.0 PHASE I CONCEPTUAL MODEL

3.1 SOURCE-PATHWAY-RECEPTOR

The conceptual model for the site considers the development proposal for residential without produce end use and the preceding information.

The site's former uses, as well as the neighbouring sites uses are considered in respect to potential contaminative sources.

Pathways for the end user of the site include direct contact (dermal) with potentially contaminated soil dust; ingestion and inhalation of potentially contaminated soil dust; inhalation of potential ground gas and fibres.

The primary receptors for the site are construction workers and end users of the site (residents).

Potential contaminants of concern for the end user include, Heavy Metals, PAHs, TPH CWG, and asbestos fibres.

There is also a moderate to low to moderate risk of ground gases (carbon dioxide & methane).

For the controlled waters environment, the primary receptor is the Secondary A Aquifer (Taplow Gravel Member & Lambeth Group) underlying the site.

Potential contaminants of concern for the environment include Heavy Metals, PAHs, TPH CWG.

The primary pathway for controlled waters is the leaching and vertical migration of potential contaminants through the vadose zone to the saturated zone.

The development of the conceptual model is illustrated on Figure 3.1.

Figure 3.1 Phase I Conceptual Site Model.

HUMAN HEALTH			
Source	Pathway	Receptor	Level of Risk/Recommended Action
Made Ground and/or natural strata contaminated from historical land uses.	Indoor and outdoor inhalation of soil dust, the ingestion of, and dermal contact with, potentially contaminated soil and soil dust and inhalation of fibres.	End users.	Moderate to high risk: Phase II Ground Investigation recommended
		Construction workers.	
Ground gases (methane & carbon dioxide)	Potential inhalation of ground gas/ vapours.	End users.	A significant potential off site source has not been identified, however further assessment is recommended to determine the on-site risks. Phase II Ground Investigation recommended
Radon	Potential inhalation of Radon	End user	No radon protection measures necessary
Made Ground and/or natural strata contaminated from historical land uses	Water pipes.	End users.	Moderate to high risk: Phase II Ground Investigation recommended
Made Ground and/or natural strata contaminated from historical land uses.	Leaching of contaminants and vertical or horizontal migration to the groundwater/surface water features.	Secondary A Aquifer (Taplow Gravel Member & Lambeth Group)	Moderate to high risk: Phase II Ground Investigation recommended
		River Kennet	Very low risk; Sufficient distance from the site

4.0 PHASE II GROUND INVESTIGATION

4.1 FIELDWORK

The Phase II intrusive investigation was undertaken on the 11th October 2024 under the supervision of a suitably qualified engineer and in general accordance with the Code of Practice for Site Investigations BSI (2020), BS 5930:2015+A1 2020.

The Phase II investigation works incorporated the following:

- The advancing of five window sample boreholes to a maximum depth of 5.0mbgl.
- The analysis of six soil samples for a standard 'CLEA' screening suite and selected site specific determinands.

The exploratory hole logs are contained in **Appendix B**.

4.2 RATIONALE

The Phase II investigation has been designed to facilitate an assessment of the general ground conditions across the site, including contaminant sources, pathways and receptors. The investigation has also been designed in consideration of the current site layout and access restrictions, the development proposal and health and safety issues.

4.3 LABORATORY ANALYSIS & TESTING

Selected soil samples were analysed at specialist environmental and geotechnical laboratories as detailed in the following sections.

4.4 Chemical Analysis

A total six samples were sent for analysis at a UKAS/MCERTS accredited laboratory. The samples were screened for heavy metals, PAHs, TPH CWG, asbestos, water-soluble sulphate and pH. The soil analysis results are contained within **Appendix C**.

Sample ID	Depth (mbgl)	Strata	Suite
WS1	0.3	Made Ground	CLEA & TPH CWG
WS2	0.3		CLEA
WS3	0.2		CLEA & TPH CWG
WS4	0.4		CLEA
WS5	0.7		CLEA & TPH CWG

5.0 GROUND CONDITIONS

The intrusive investigation has generally revealed that significant volumes of Made Ground was present from across the site, underlain by Taplow Gravel Member deposits. In some places, solid strata deposits of Seaford and Newhaven Chalk Members were recorded.

For full details, refer to Appendix B.

5.1 MADE GROUND

At surface across the site either concrete or tarmac was present.

Beneath this, Made Ground deposits were recorded, which extended in depths between 1.6m and 2.5m in depth.

This material was varied laterally and vertically, but tended to comprise a gravelly very sandy silty clay with gravels including flint, brick and concrete.

Furthermore, a predominantly granular layer was recorded towards the base of the Made Ground, however generally comprised the same materials.

There was no olfactory evidence of contamination nor was there any evidence of hydrocarbon staining.

5.2 SUPERFICIAL STRATA

Beneath Made Ground deposits, in all boreholes, suspected deposits of the Taplow Gravel Member were noted. In WS1 these deposits were not bottomed out. The base of the deposits was recorded between 3.8m and 5.3m in WS2 to WS5.

This deposit varied in composition, which is common for a fluvial deposit.

The Taplow Gravel Member was recorded as; a slightly sandy gravelly silty clay, a slightly gravelly very sandy silty clay and a very sandy very clayey gravel.

The density and consistency of the deposit was also varied with soft through to firm and loose to medium dense deposits all recorded.

Gravels tended to be fine to coarse, subangular to subrounded flint.

5.3 SOLID STRATA

Suspected weathered top horizons of the Seaford and Newhaven Chalk were recorded in WS2 to WS5.

Recovered as a CIRIA Grade Dm, the deposit was a structureless chalk composed of a white gravelly silt, where the gravels were fine to coarse, weak low-density chalk with flints.

5.4 FIELD OBSERVATIONS

Significant depths of Made Ground in all locations, however obvious signs of contamination were absent and putrescible material was not recorded.

5.5 GROUNDWATER

Groundwater was not encountered in any boreholes.

6.0 CONTAMINATION ASSESSMENT

Tier 1 Assessment Criteria for human health with regard to contamination within soils have been produced with reference to values published in LQM/CIEH S4UL and DEFRA's C4SLs. The Tier 1 Assessment Criteria are contained in **Appendix D**.

The laboratory analysis results were assessed against the assessment criteria for a residential without produce end use. A SOM of 1% has been adopted for the PAH analysis.

6.1 HUMAN HEALTH

An assessment of the analysis results for metals and inorganics contained in **Appendix C**, revealed that the majority of contaminants were present at concentrations below the respective threshold, however some contaminants exceeded these thresholds, as detailed below.

Sample Ref.	Depth (mbgl)	Soil Type	Contaminant	Concentration (mg/kg)	Screening Value (mg/kg)
WS1	0.3	Made Ground	Lead	518	310
WS2	0.3	Made Ground	Lead	873	310
			Mercury	2.0	1.2*
WS3	0.2	Made Ground	Lead	389	310
WS4	0.4	Made Ground	Lead	917	310
			Mercury	1.8	1.2*
WS5	0.7	Made Ground	Lead	1100	310
			Mercury	1.4	1.2*

*Screening value based on elemental Mercury

Lead and Mercury are both contaminants commonly associated with former fuelling stations.

Due to the widespread presence of Lead and to a lesser extent Mercury, remedial measures will be necessary to protect the end user.

6.1.1 Hydrocarbon or VOC/SVOC Contamination

No exceedances were recorded related to hydrocarbons.

6.1.2 Asbestos

Asbestos fibres were not detected in any samples.

6.1.3 Ground Gas

A ground gas monitoring programme and risk assessment has not been undertaken as part of this investigation.

However, based on the presence of deep Made Ground across the site, as a precaution ground gas protection measures should be installed.

It is therefore recommended that CS2 ground gas protection measures are adopted. These typically comprise;

A CS2 classification requires the use of either;

- A reinforced cast in situ suspended floor slab with minimal penetrations.
- Carbon dioxide, methane and Radon resistant membrane
- Laps and joints bonded as per manufacturers details.
- All services entries sealed

Or if Precast beam and block is to be used;

- A passive sub floor dispersal layer conforming to at least 'good performance'.
- This should be in the form of either: a clear void, polystyrene void former blanket, geocomposite void former blanket or no-fines gravel layer.
- Gas membrane as above.

6.2 CONTROLLED WATERS

Whilst elevated concentrations of Lead and Mercury were recorded when compared against human health standards, the risk to controlled waters is considered very low.

This is based on the presence of a predominantly cohesive layer beneath the Made Ground. This will act to limit the potential mobilisation and migration of contaminants out of the Made Ground.

Furthermore, groundwater was not recorded in any of the boreholes.

7.0 PHASE II CONCEPTUAL SITE MODEL

7.1 SOURCE-PATHWAY-RECEPTOR

The conceptual model for the site considers the development proposal for residential without produce end use and the preceding information.

The site's former uses, as well as the neighbouring sites uses are considered in respect to potential contaminative sources.

Pathways for the end user of the site include direct contact (dermal) with potentially contaminated soil dust; ingestion and inhalation of potentially contaminated soil dust; inhalation of ground gas.

The primary receptors for the site are construction workers and end users of the site (workers).

Widespread Lead was present across the site along with some instances of Mercury.

Deep Made Ground deposits were recorded across the site, which may act a ground gas source.

Remedial measures in the form of capping of landscaped areas and CS2 ground gas protection measures should be adopted.

Furthermore, the location of the former tanks and fuel lines should be identified and decommissioned or removed where appropriate.

For the controlled waters environment, the primary receptor is the Secondary A Aquifer (Taplow Gravel Member) and Principal Aquifer (Seaford Chalk Formation and Newhaven Chalk Formation) underlying the site.

The primary pathway for controlled waters is the leaching and vertical migration of potential contaminants through the vadose zone to the saturated zone.

Widespread Lead was present across the site along with some instances of Mercury, however the presence of a predominantly cohesive layer beneath the Made Ground will act to limit the potential mobilisation and migration of contaminants out of the Made Ground.

No further work is considered necessary to protect controlled waters (other than the actions relating to human health)

The development of the conceptual model is illustrated on Figure 8.1.

Figure 7.1: Phase II Conceptual Site Model

HUMAN HEALTH			
Source	Pathway	Receptor	Level of Risk/Recommended Action
Widespread presence of Lead and some Mercury	Indoor and outdoor inhalation of soil dust, the ingestion of, and dermal contact with, potentially contaminated soil and soil dust and inhalation of fibres.	End users.	Moderate to high risk; All landscaped areas will require capping with at least 300mm of a clean material. Alternatively, permanent capping can be adopted.
		Construction workers.	Furthermore, the former fuel tanks and fuel lines should be identified and decommissioned/removed.
Deep Made Ground – possible source of Carbon Dioxide and Methane	Potential inhalation of ground gas/ vapours.	End users.	Moderate risk; As a precaution, CS2 ground gas measures should be adopted.
Widespread presence of Lead and some Mercury	Water pipes.	End users.	Moderate risk; Barrier pipe is recommended
No significant concentrations of contamination recorded.	Leaching of contaminants and vertical migration to the groundwater.	Secondary A Aquifer (Taplow Gravel Member) and Principal Aquifer (Seaford Chalk Formation and Newhaven Chalk Formation)	Very low risk: The presence of a predominantly cohesive layer beneath the Made Ground will act to limit the potential mobilisation and migration of contaminants out of the Made Ground.

8.0 RISK MANAGEMENT & REMEDIATION

Previous sections have quantified the risk posed to identified receptors, which in some instances, require remediation to protect or reduce levels of risk. The following section details measures and recommendations for dealing with risks associated with soil and ground gas contamination in respect to the development proposal for a commercial/industrial end use.

8.1 REMEDIATION TO PROTECT END USERS

Soils - Capping

Due to the presence of Lead and Mercury within Made Ground, remediation will be required for all landscaped areas.

A minimum of 300mm capping material will be required in proposed soft landscaping areas. Capping will not be required in areas of proposed hardstanding (e.g., driveways or building footprints).

Importation of clean soil (topsoil/subsoil) will be required for the formation of the capping layer. The testing requirements for imported soils are shown in Table 3 below.

It may be possible to use site won natural strata as part of the capping layer, however this would be subject to additional supplementary testing.

Table 9.1 – Testing requirement for imported soils

Type	Number of Samples	Testing Schedule
Greenfield Source	Minimum of 3 or 1 per 150m ³ (whichever is greater)	Heavy Metals, PAH and asbestos
Brownfield Source	Minimum of 3 or 1 per 50m ³ (whichever is greater)	Heavy Metals, PAH, TPH CWG and asbestos

Topsoil and sub soil should not be imported to site unless it has been approved in writing by the Local Planning Authority.

Following placement of the capping layer, capping inspections will also be required in order to demonstrate to the Local Planning Authority that the above recommendations have been satisfactorily carried out.

Ground gases

CS2 ground gas protection measures are required in the structure.

Details of CS2 ground gas protection measures are given in Section 6.1.3

Installation of the membranes will require inspection by a competent person.

Former tanks (UST)

The status of the former tank or tanks is not currently known and therefore it should be assumed the tanks are still present on site.

It is therefore recommended that, during the early stages of the construction phase, the location of the tanks and associated infrastructure (i.e. fuel lines) is identified and recorded.

Should the tanks still be present, they will require either full decommissioning by a competent person(s) or preferably removed from site.

The soils around tanks should also be subject to additional soil sampling to determine the suitability for these soils to remain on site or not.

8.2 REMEDIATION TO PROTECT CONTROLLED WATERS

No further work considered necessary.

8.3 REMEDIATION TO PROTECT CONSTRUCTION WORKERS

Significant risk to construction workers is not anticipated.

However, basic PPE for all workers (overalls, gloves and dust masks if required) and wash facilities/personal hygiene should be provided as a precautionary measure.

8.4 WASTE MANAGEMENT

A waste classification has not been undertaken as part of this assessment.

However, it is considered possible that waste soils (Made Ground) may attract a higher rate of landfill tax. A full waste classification should be undertaken in accordance to the Environment Agency's WM3 and advice sought from the proposed waste receiver.

9.0 RECOMMENDATIONS

Recommendations for further assessment of the site include:

- Remediation is necessary to make the site safe for the proposed end user. Capping of landscaped areas with a clean material and the use of CS2 ground gas protection measures are required.
- The current status of the UST(s) is not known. Therefore, further work is required in order to locate these and if necessary, decommission/remove them from site. Supplementary contamination sampling may be necessary.
- A remediation method statement should be prepared to detail the aforementioned remedial measures in detail.
- Geotechnical testing has not been undertaken as part of this investigation; however, it is recommended that a geotechnical assessment is carried out to with foundation design, noting the presence of deep Made Ground.

10.0 CONCLUSIONS

This Phase I & II geo-environmental assessment has illustrated that the proposed development of the site with a residential without produce end use poses a significant risk to end users of the site, however if the recommendations within this report are followed, the site can be made safe for the proposed end user.

Appendix A



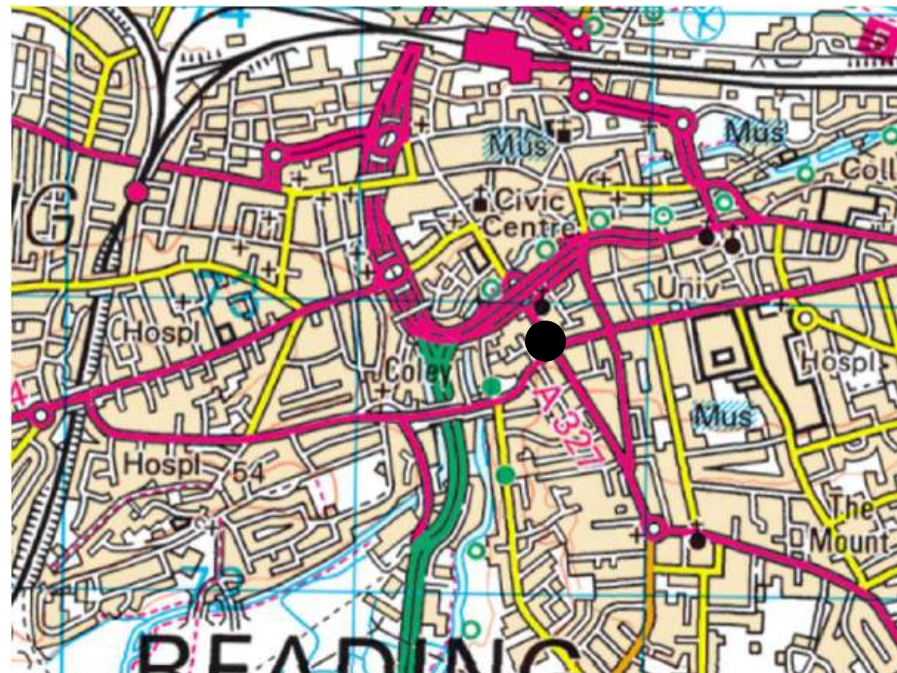


KEY:

● Approximate Site Location

85 Pell St, Reading RG1 2NP

DO NOT SCALE



TITLE:

Site Location Plan

PROJECT:

Pell St, Reading

PROJECT No:

EAL.34.24

DATE:

10/2024

SCALE :

NTS

DRAWN :

DW

DWG No:

Figure 1



KEY:



Site Boundary



DO NOT SCALE



TITLE:

Site Layout

PROJECT:

Pell St, Reading

PROJECT No:

EAL.34.24

DATE:

10/2024

SCALE:

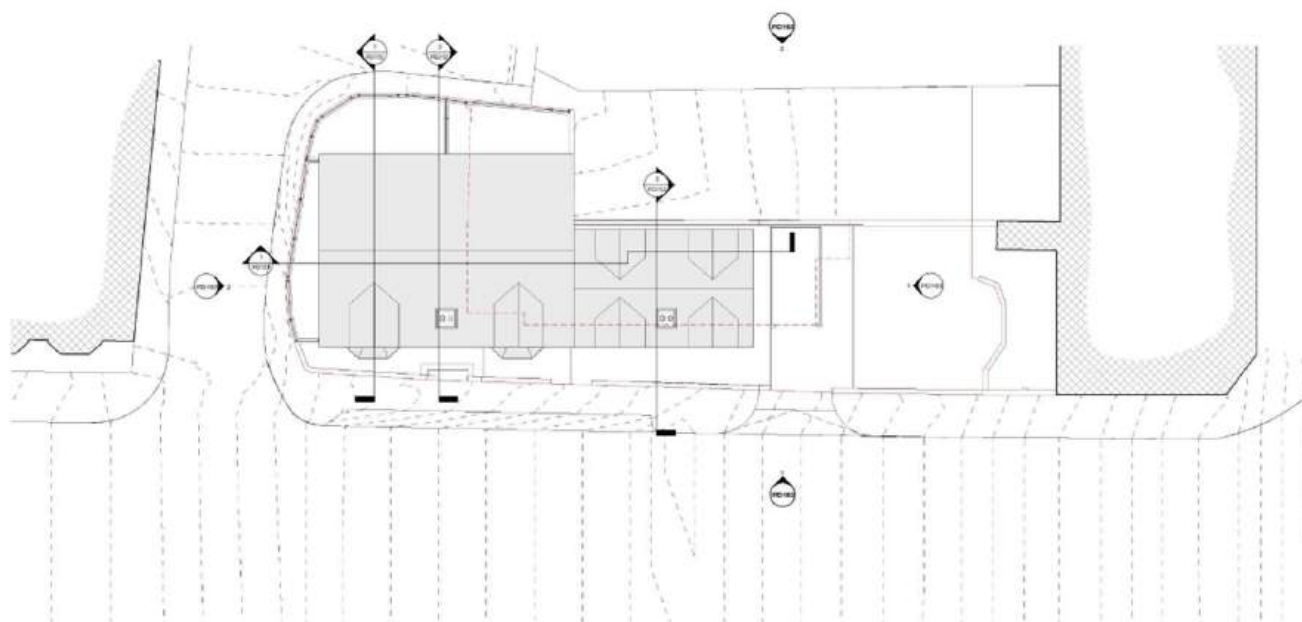
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DRAWN:

DW

DWG No:

Figure 2



KEY:

DO NOT SCALE



TITLE:

Development Proposal

PROJECT:

Pell St, Reading

PROJECT No:

EAL.34.24

DATE:

10/2024

SCALE :

NTS

DRAWN :

DW

DWG No:

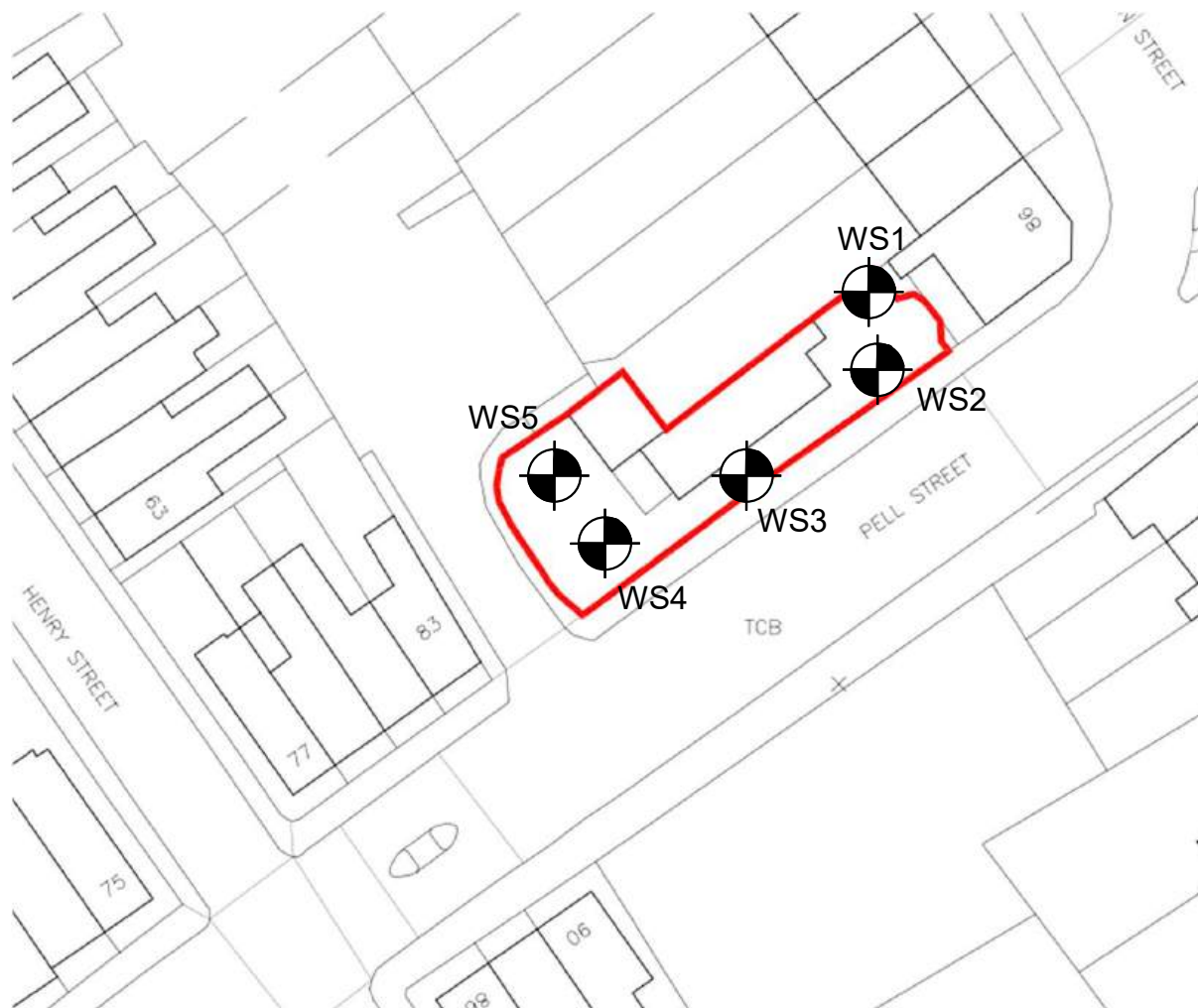
Figure 3



KEY:



WS Borehole



DO NOT SCALE



TITLE:

Exploratory Hole Location Plan

PROJECT:

Pell St, Reading

PROJECT No:

EAL.34.24

DATE:

10/2024

SCALE :

NTS

DRAWN :

DW

DWG No:

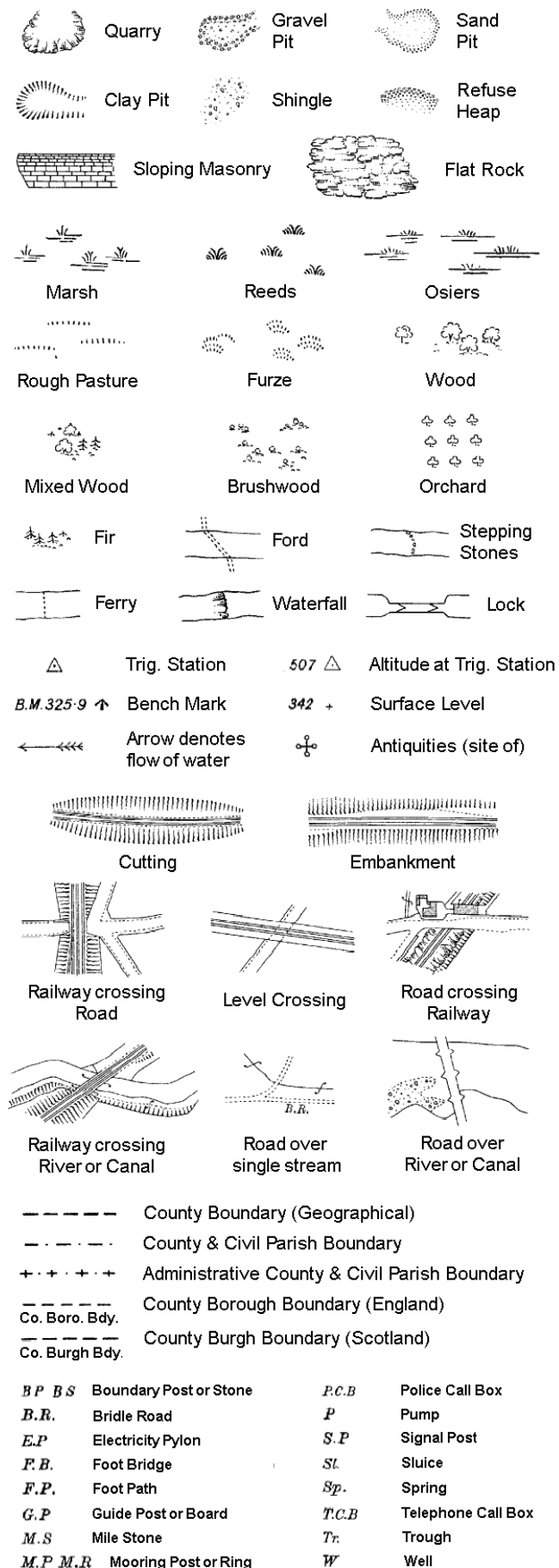
Figure 4

Appendix B

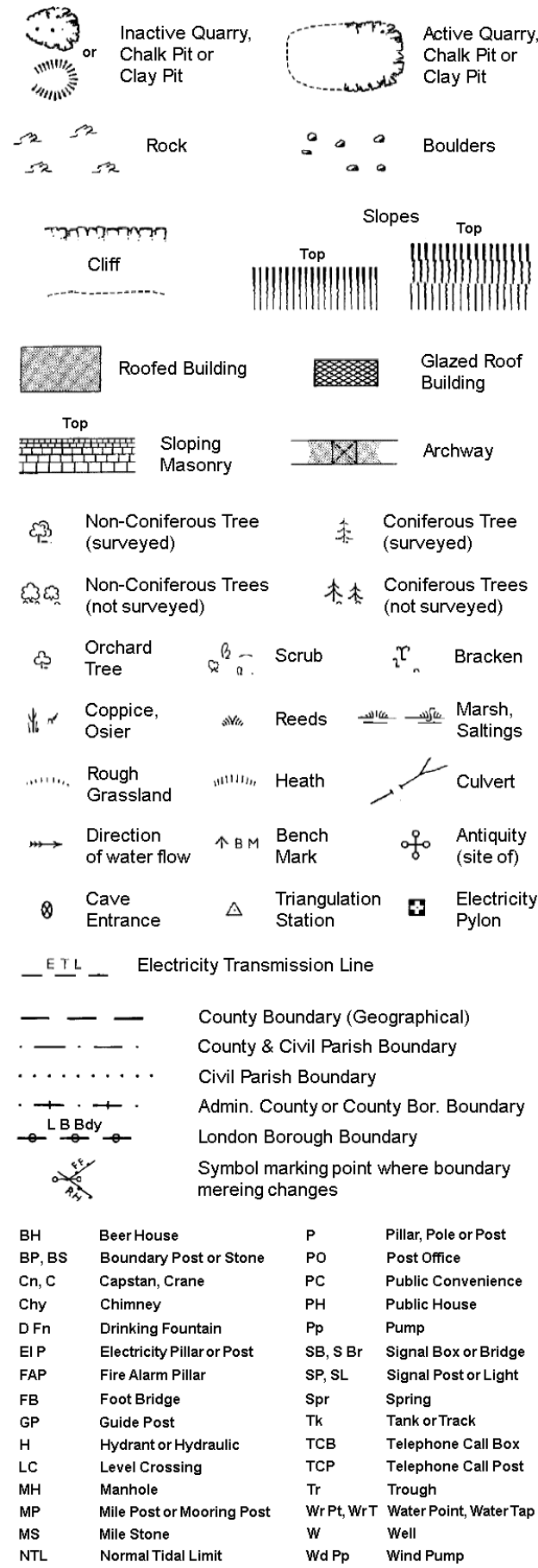


Historical Mapping Legends

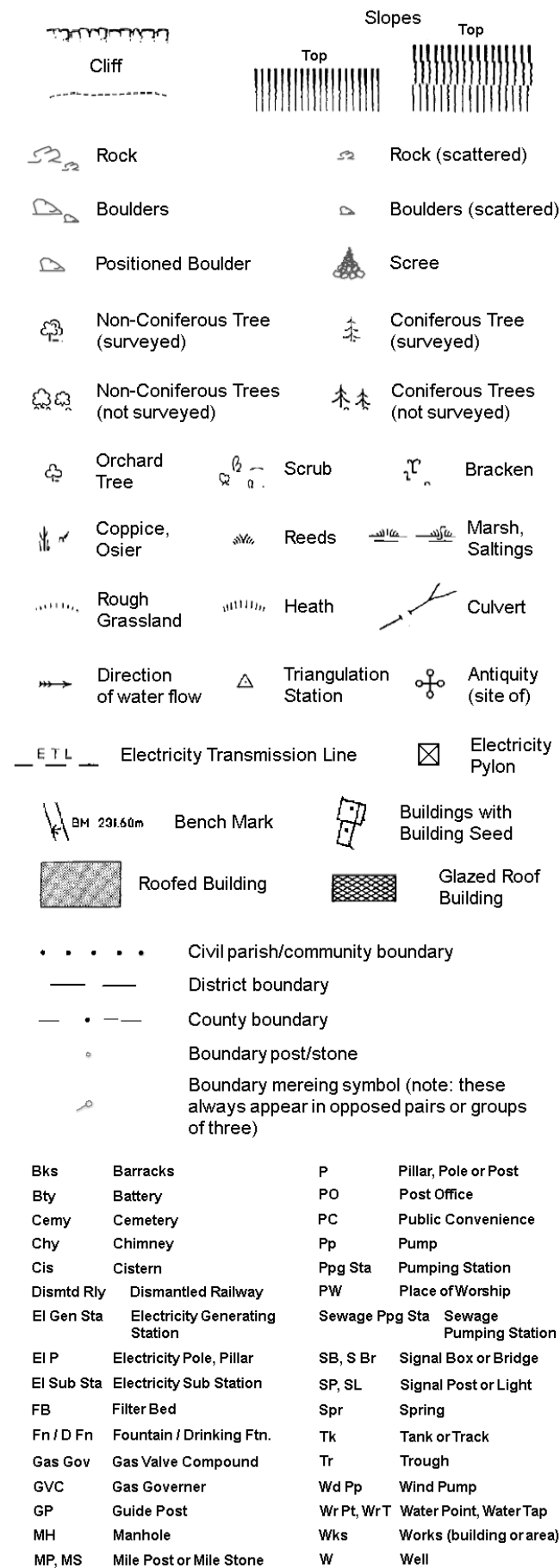
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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



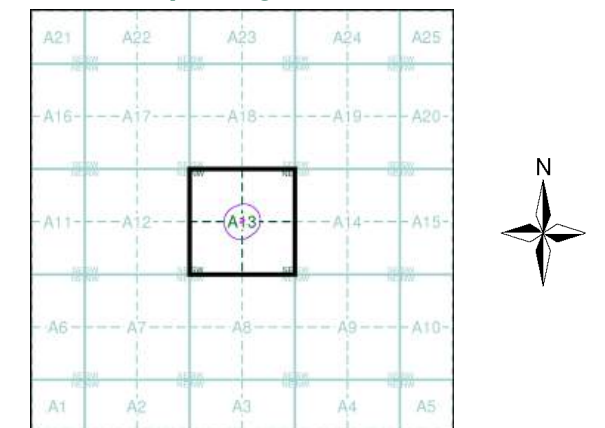
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Berkshire	1:2,500	1879	2
Berkshire	1:2,500	1899	3
Berkshire	1:2,500	1912	4
Berkshire	1:2,500	1931	5
Ordnance Survey Plan	1:1,250	1957 - 1958	6
Ordnance Survey Plan	1:2,500	1958	7
Ordnance Survey Plan	1:1,250	1962 - 1969	8
Ordnance Survey Plan	1:1,250	1968 - 1982	9
Ordnance Survey Plan	1:2,500	1971	10
Additional SIMs	1:1,250	1972 - 1988	11
Supply of Unpublished Survey Information	1:1,250	1973	12
Additional SIMs	1:1,250	1978 - 1992	13
Ordnance Survey Plan	1:1,250	1980 - 1988	14
Additional SIMs	1:1,250	1982 - 1987	15
Large-Scale National Grid Data	1:1,250	1993	16
Large-Scale National Grid Data	1:1,250	1995	17
Large-Scale National Grid Data	1:1,250	1996	18
Large-Scale National Grid Data	1:1,250	1996	19
Historical Aerial Photography	1:2,500	1999	20

Historical Map - Segment A13



Order Details

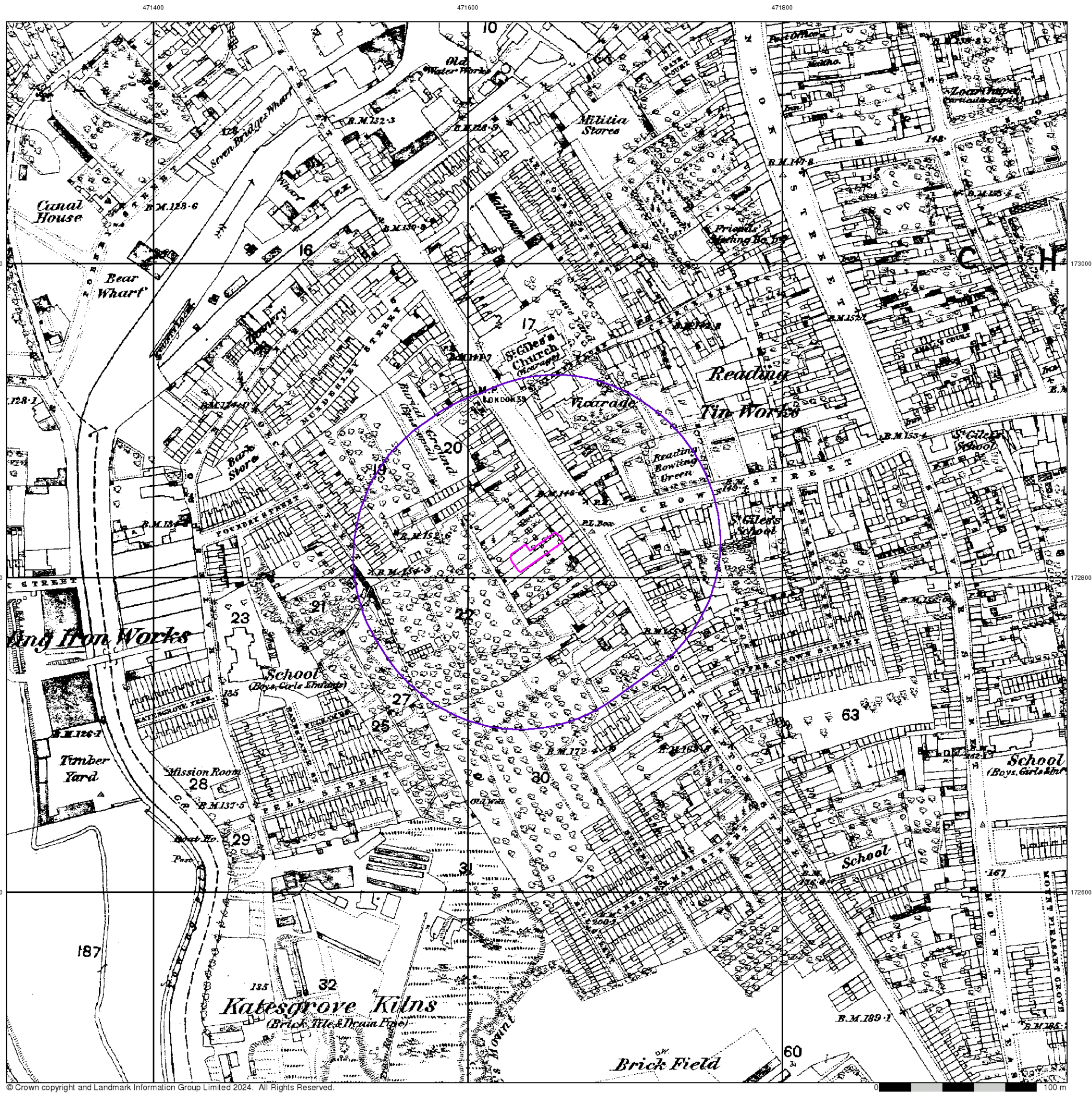
Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP

Landmark®
INFORMATION GROUP

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



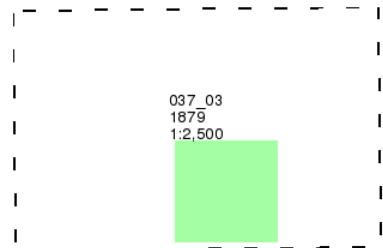
Berkshire

Published 1879

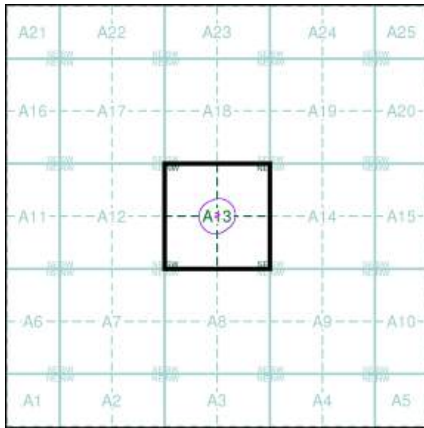
Source map scale - 1:2,500

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

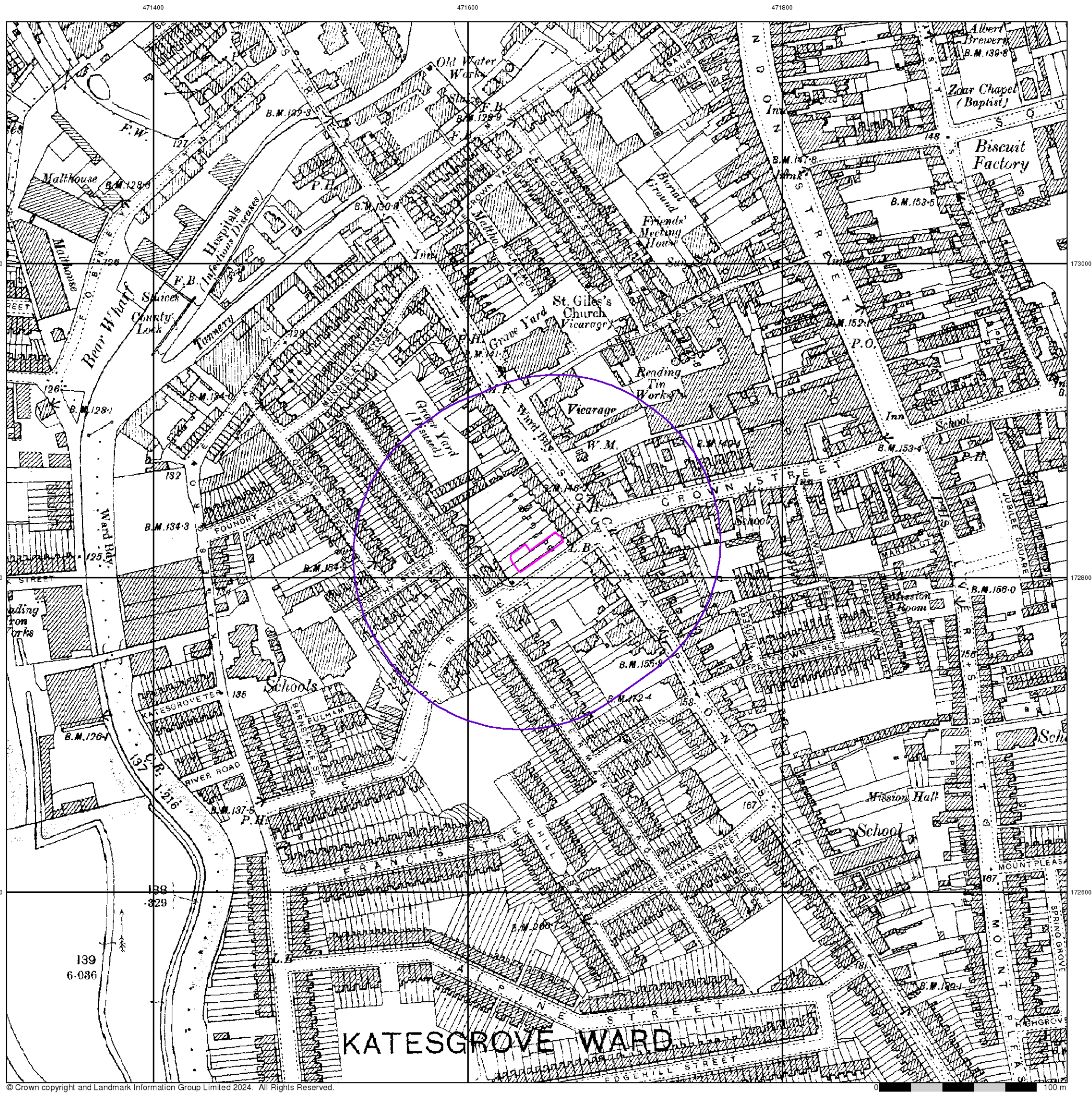


Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP



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Berkshire

Published 1899

Source map scale - 1:2,500

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Map Name(s) and Date(s)

037_03

1899

1:2,500

Historical Map - Segment A13

A21A22A23A24A25

A16A17A18A19A20

A11A12A13A14A15

A6A7A8A9A10

A1A2A3A4A5

N

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

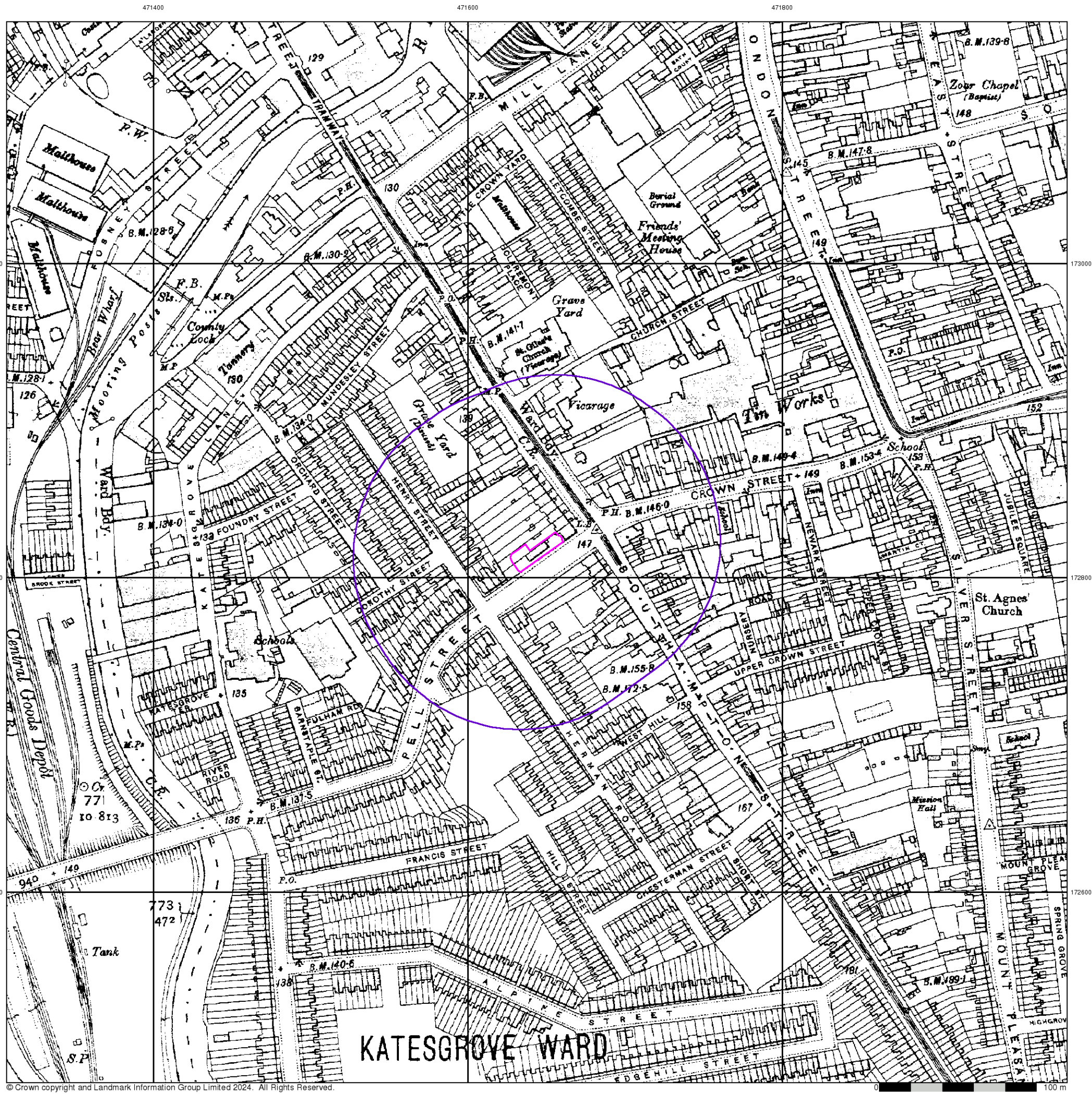
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Berkshire

Published 1912

Source map scale - 1:2,500

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Map Name(s) and Date(s)

037_03

1912

1:2,500

Historical Map - Segment A13

A21A22A23A24A25

A16A17A18A19A20

A11A12A13A14A15

A6A7A8A9A10

A1A2A3A4A5

N

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

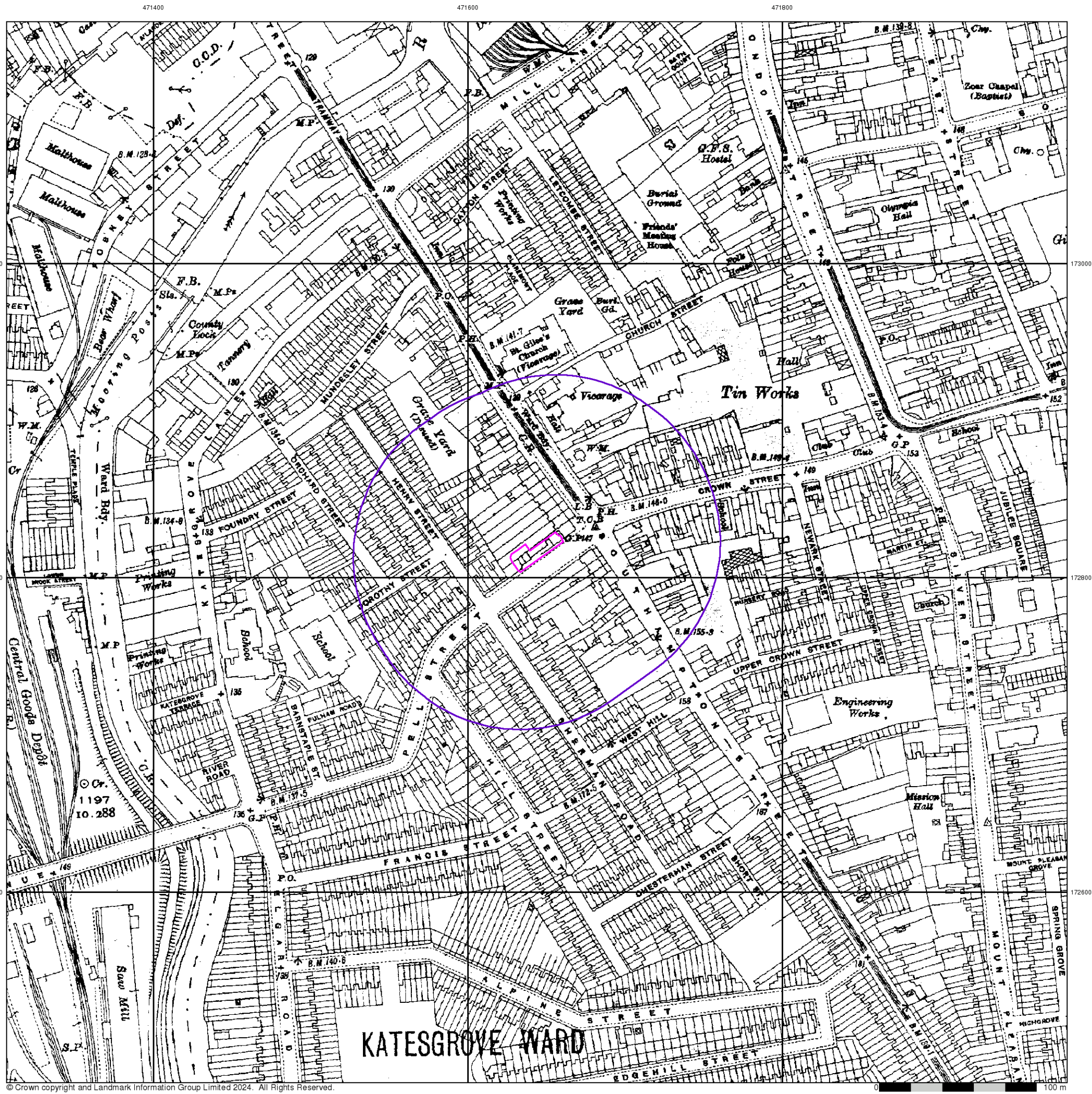
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Berkshire

Published 1931

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)

037_03
1931
1:2,500

Historical Map - Segment A13

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

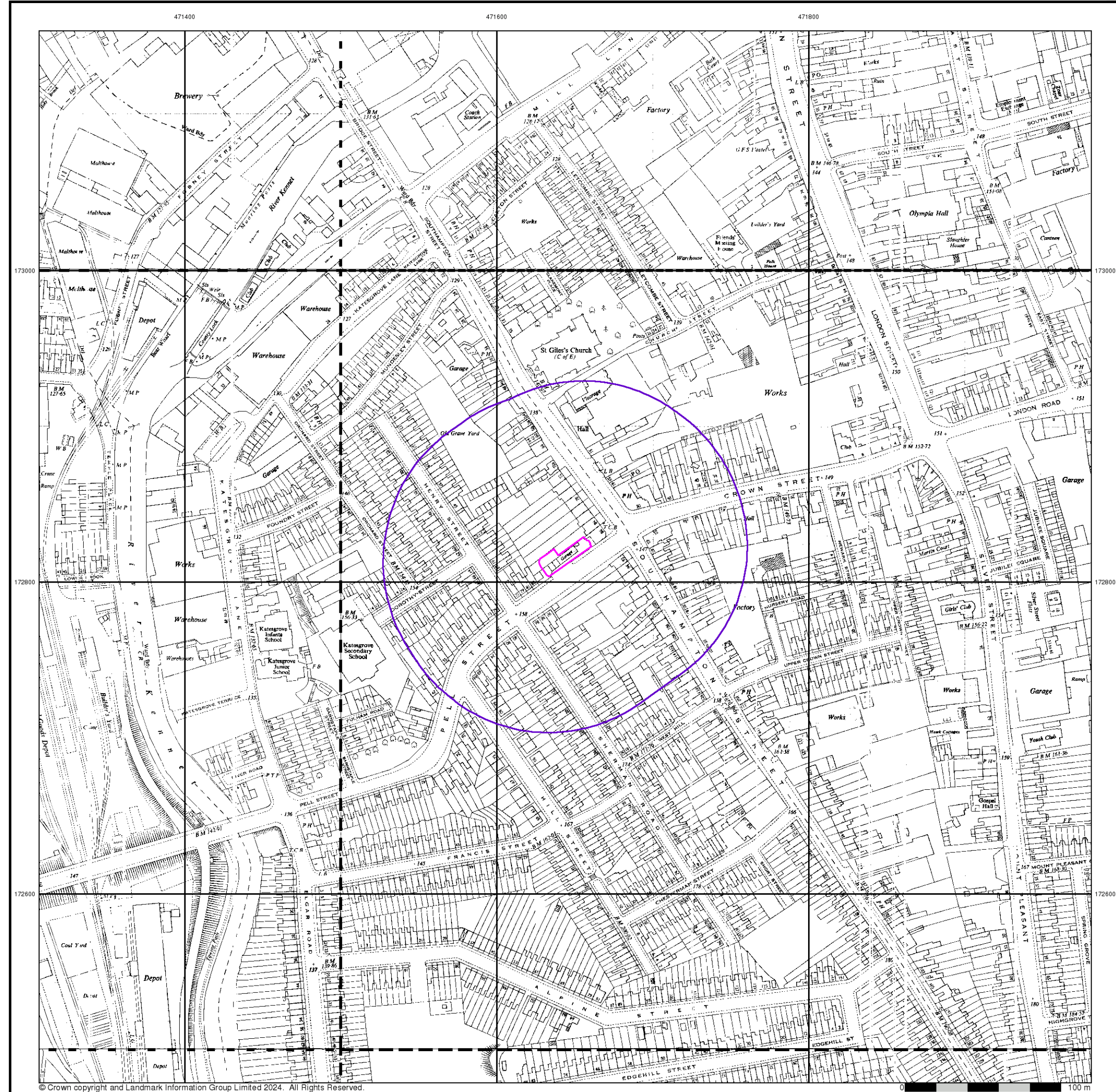
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Ordnance Survey Plan

Published 1957 - 1958

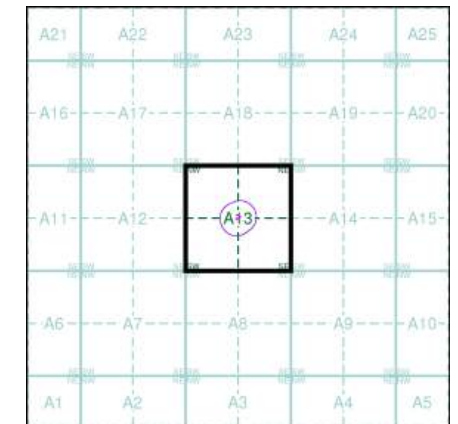
Source map scale - 1:1,250

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)

U7173SV	U7173SE
957	957
1:1,250	1:1,250
U7172NV	U7172NE
958	958
1:1,250	1:1,250
U7172SV	U7172SE
958	958
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

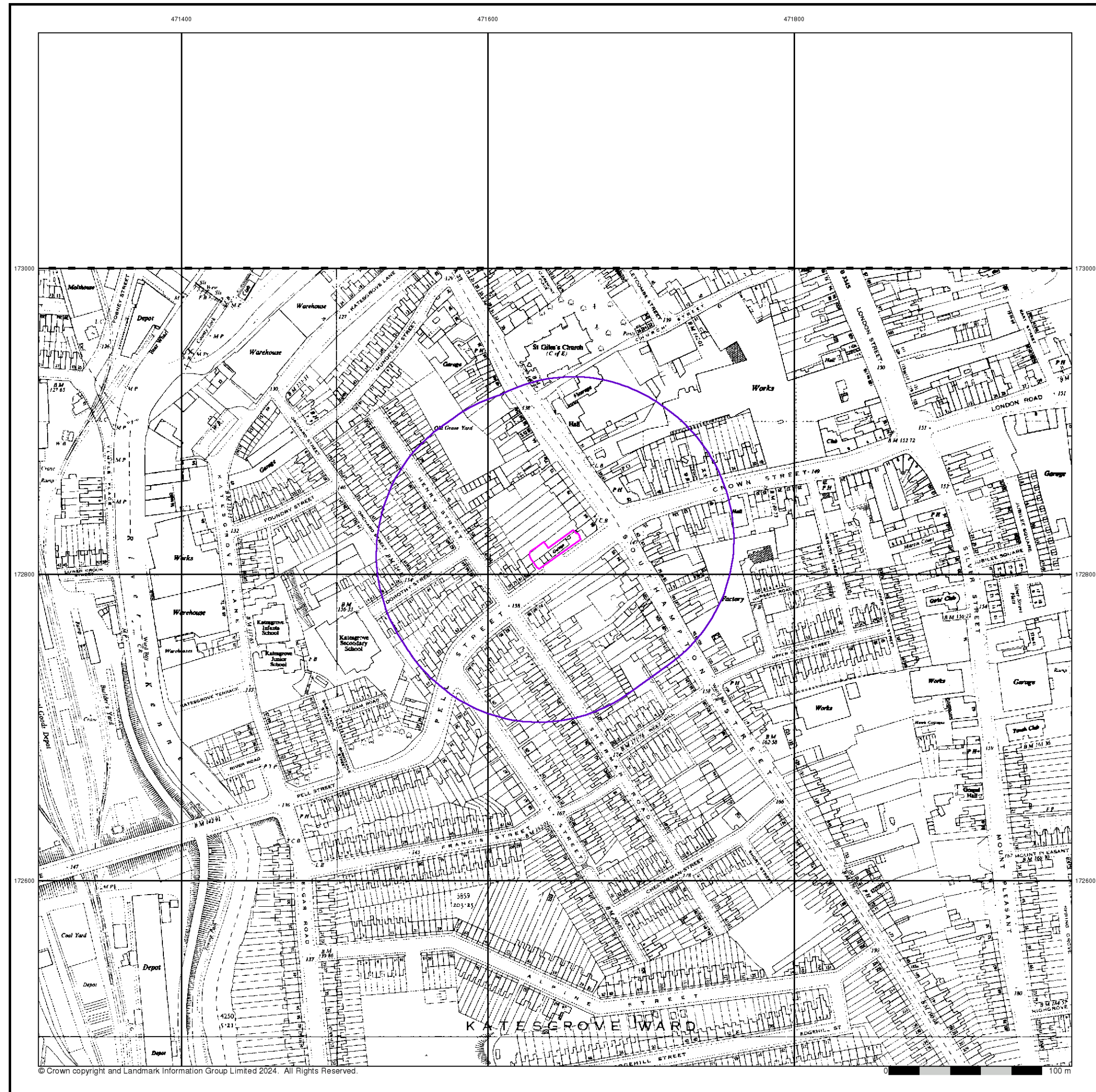
Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1958

Source map scale - 1:2,500

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Map Name(s) and Date(s)

SU7172

1958

1:2,500

Historical Map - Segment A13

A21A22A23A24A25

A16A17A18A19A20

A11A12A13A14A15

A6A7A8A9A10

A1A2A3A4A5

N

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

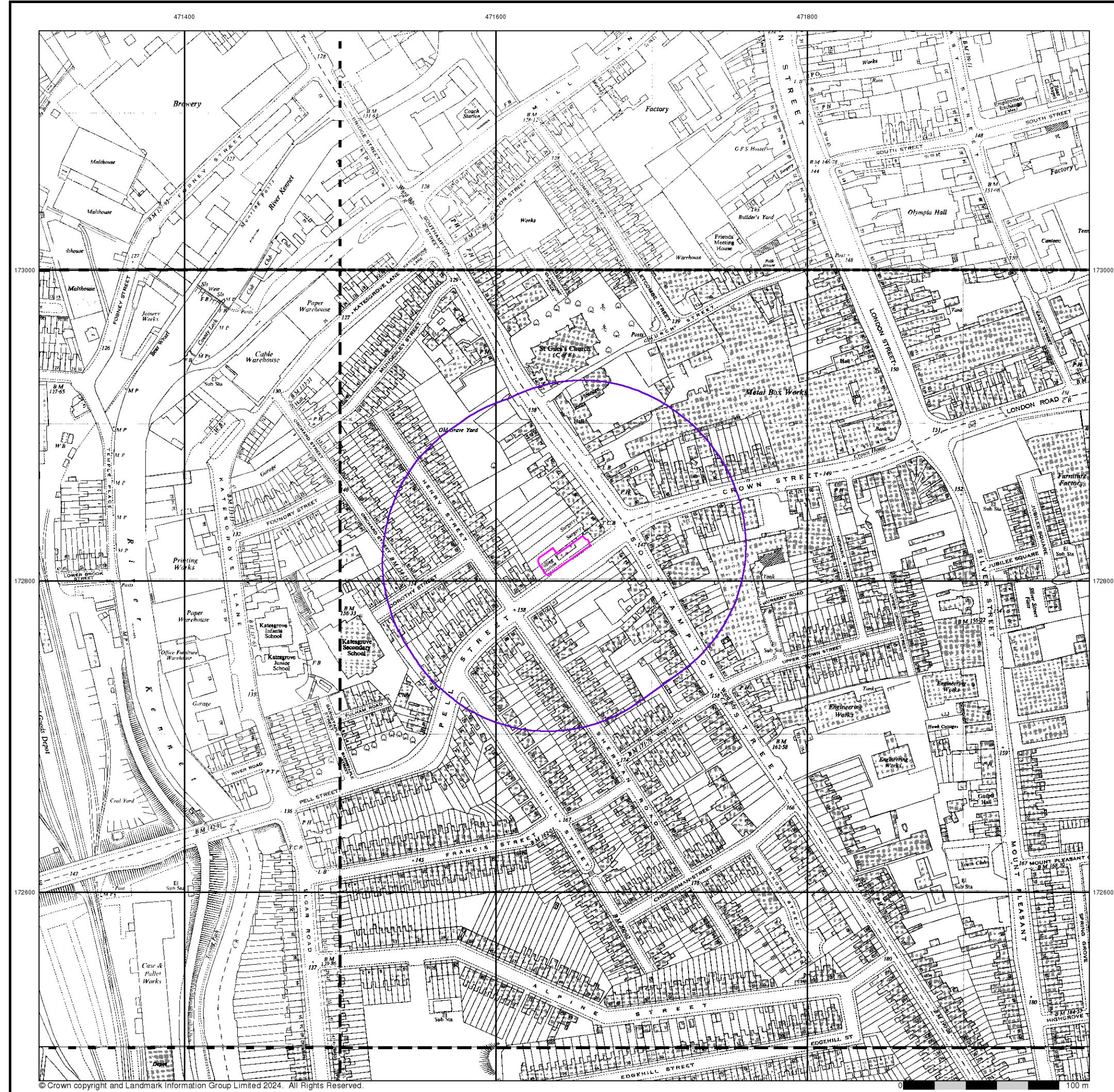
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Ordnance Survey Plan

Published 1962 - 1969

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)

U7173SV	U7173SE
962	962
1:1,250	1:1,250
U7172NV	U7172NE
969	969
1:1,250	1:1,250
U7172SV	U7172SE
963	969
1:1,250	1:1,250

Historical Map - Segment A13

Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP

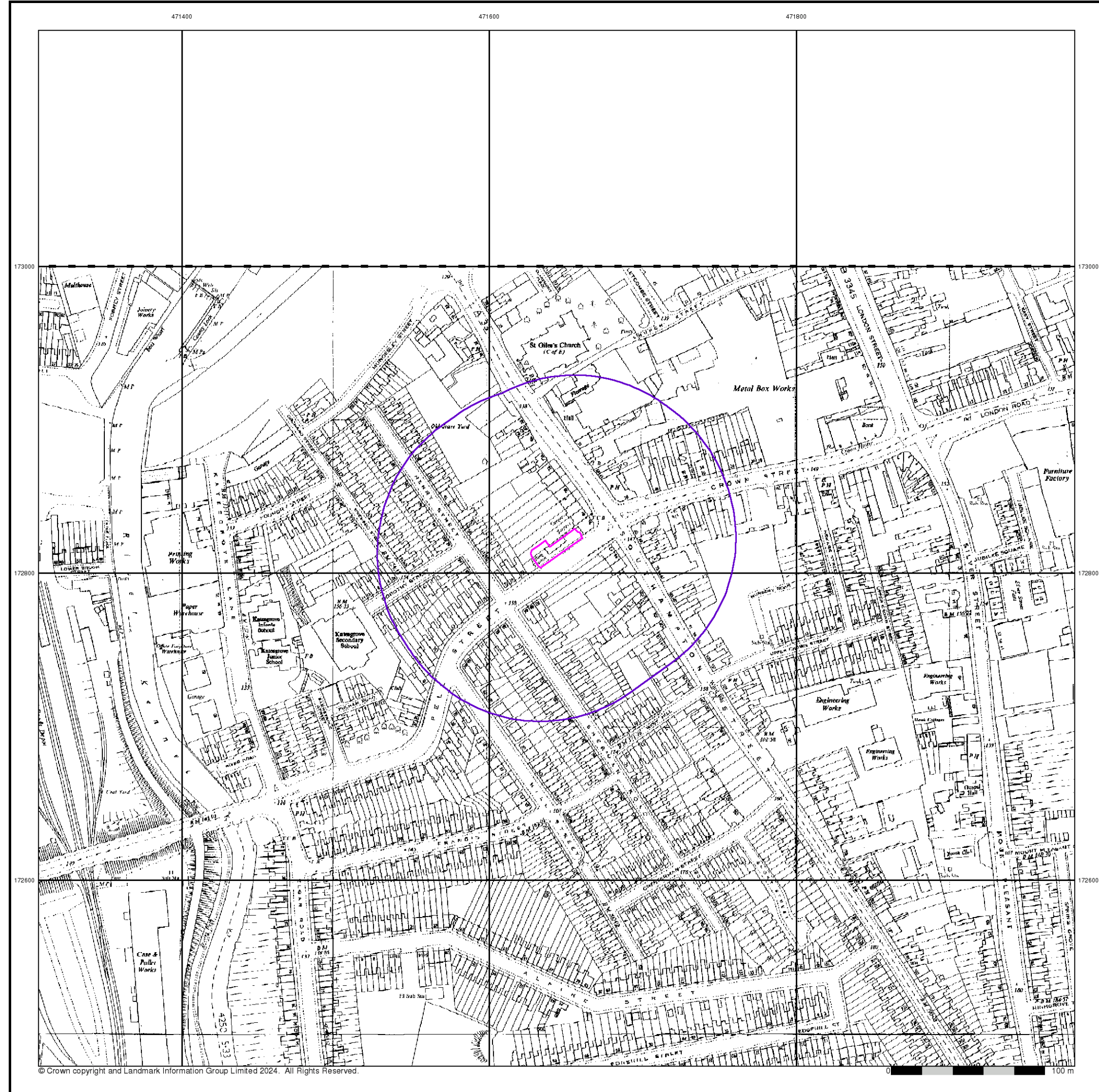
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Ordnance Survey Plan

Published 1971

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)

SU7172

1971

1:2,500

Historical Map - Segment A13

A21A22A23A24A25

A16A17A18A19A20

A11A12A13A14A15

A6A7A8A9A10

A1A2A3A4A5

N

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

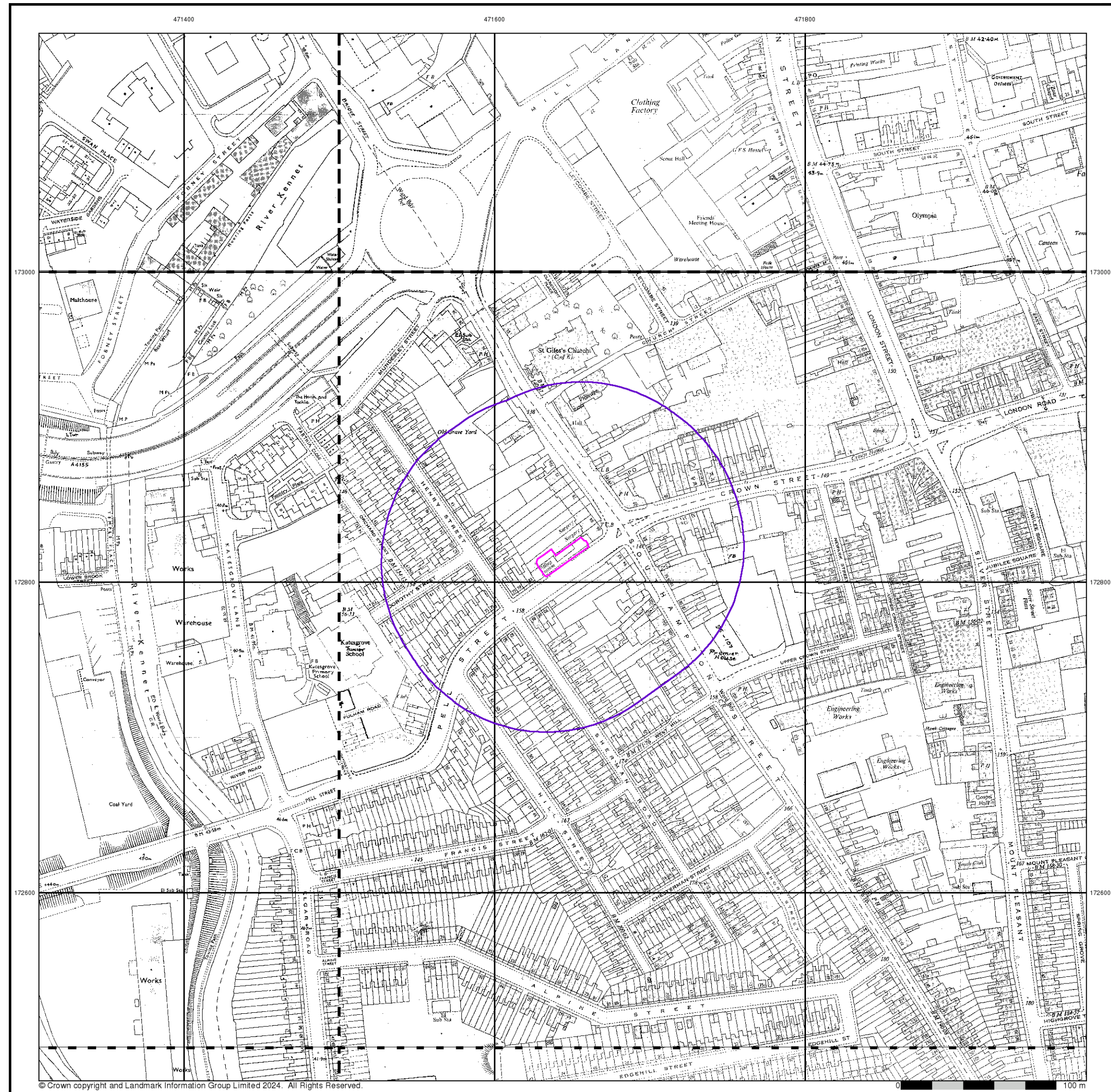
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Additional SIMs

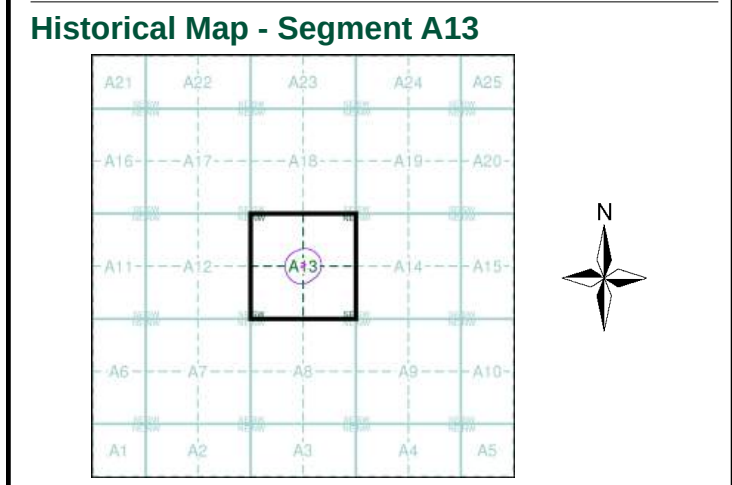
Published 1972 - 1988

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)

BU7173SV	BU7173SE
988	1979
1:1,250	1:1,250
BU7172NV	BU7172NE
986	1972
1:1,250	1:1,250
BU7172SV	BU7172SE
987	1972
1:1,250	1:1,250



Order Details

Order Number: 345952264_1_1

Customer Ref: BC701

National Grid Reference: 471640, 172820

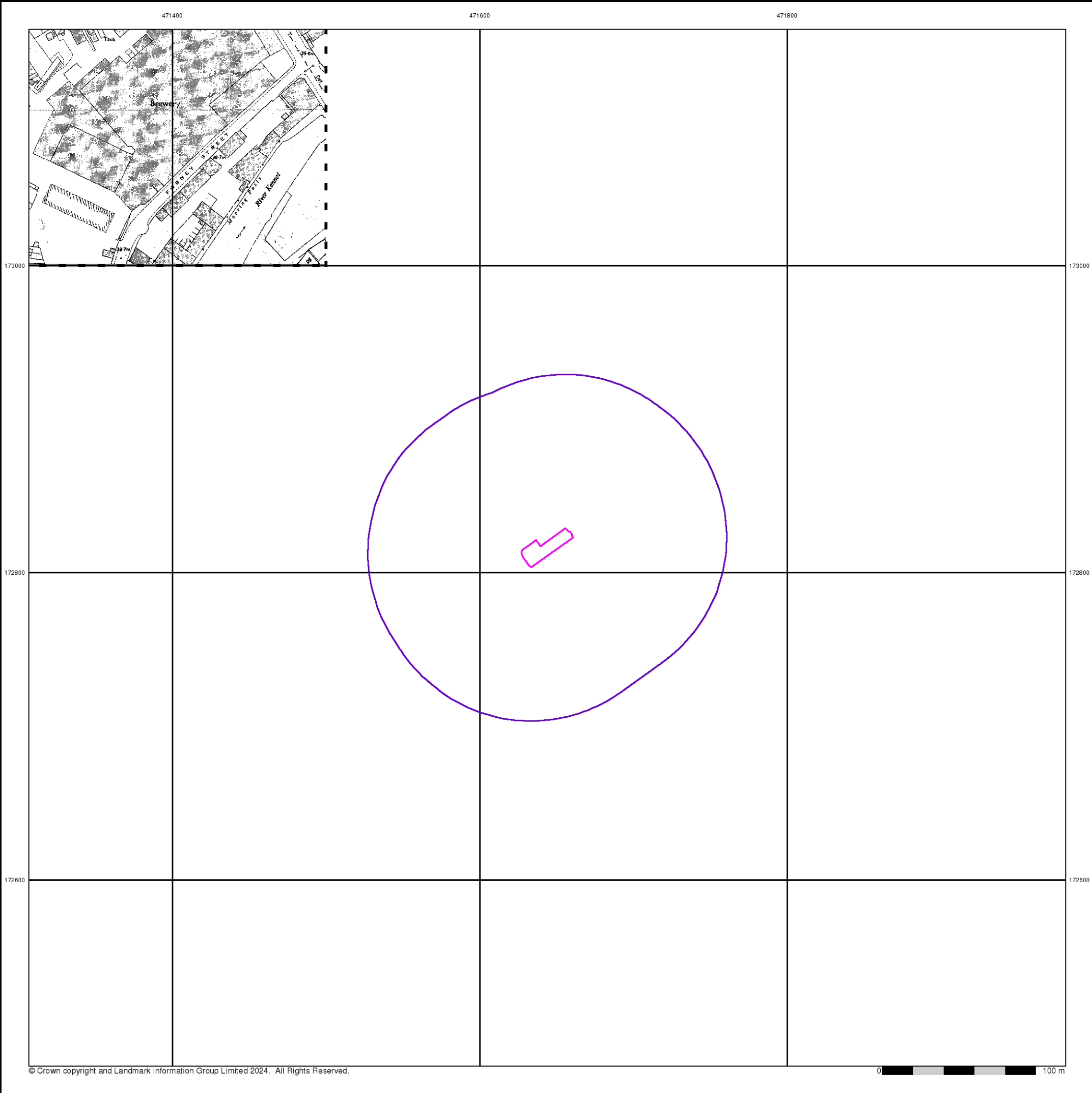
Slice: A

Site Area (Ha): 0.04

Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP



Supply of Unpublished Survey Information

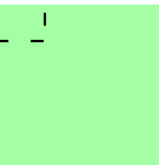
Published 1973

Source map scale - 1:1,250

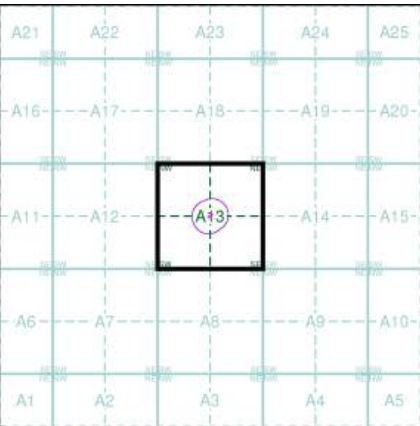
SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment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

Map Name(s) and Date(s)

SU7173SW
1973
1:1,250



Historical Map - Segment A13

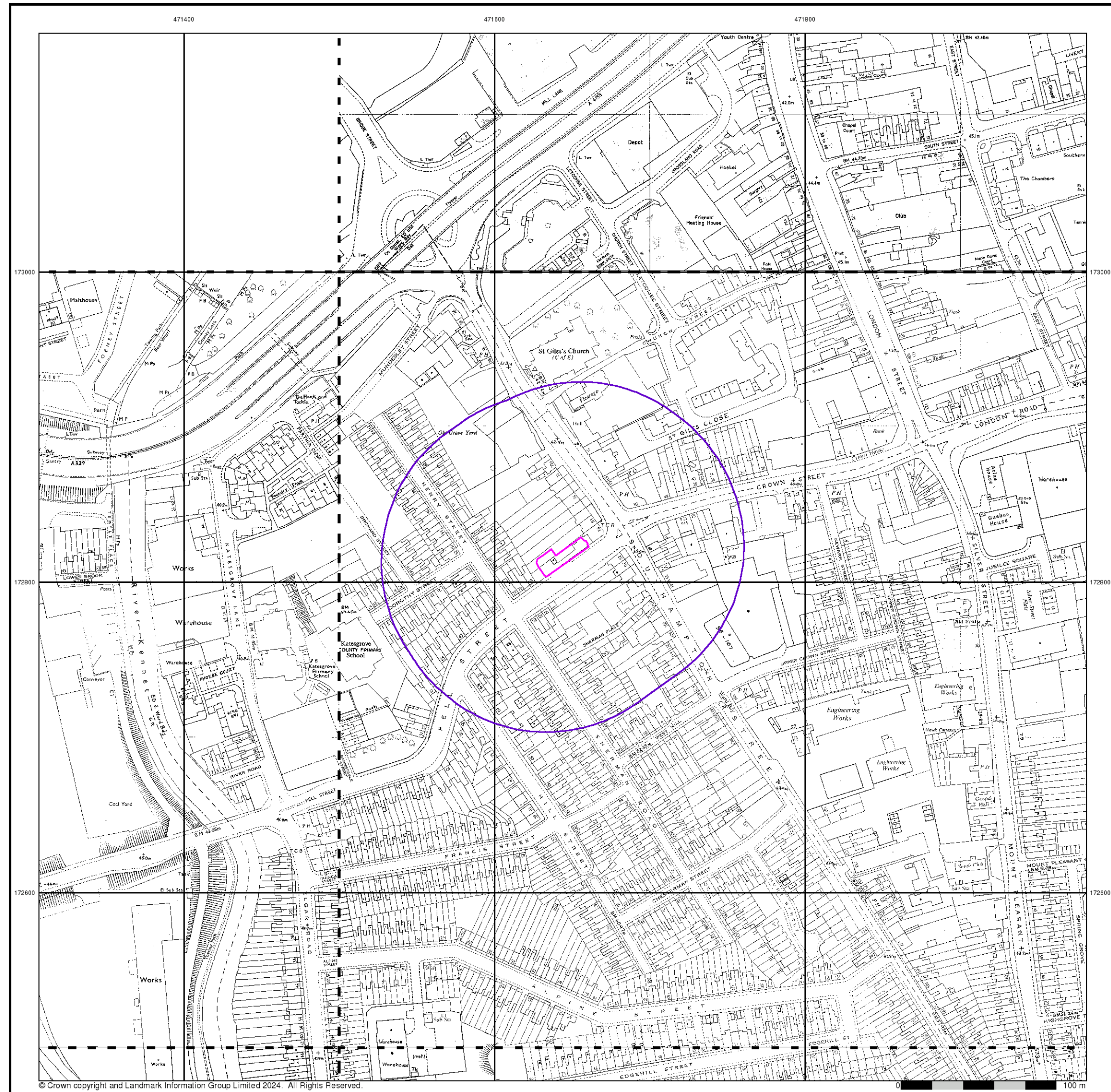


Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

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Additional SIMs

Published 1978 - 1992

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)

BU7173SE	1991	1:1,250
BU7172NW	1979	1:1,250
BU7172SE	1978	1:1,250

Historical Map - Segment A13

A 5x5 grid of segments labeled A1 to A25. Segment A13 is highlighted in the center. A north arrow is located to the right of the grid.

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

85, Pell Street, READING, RG1 2NP

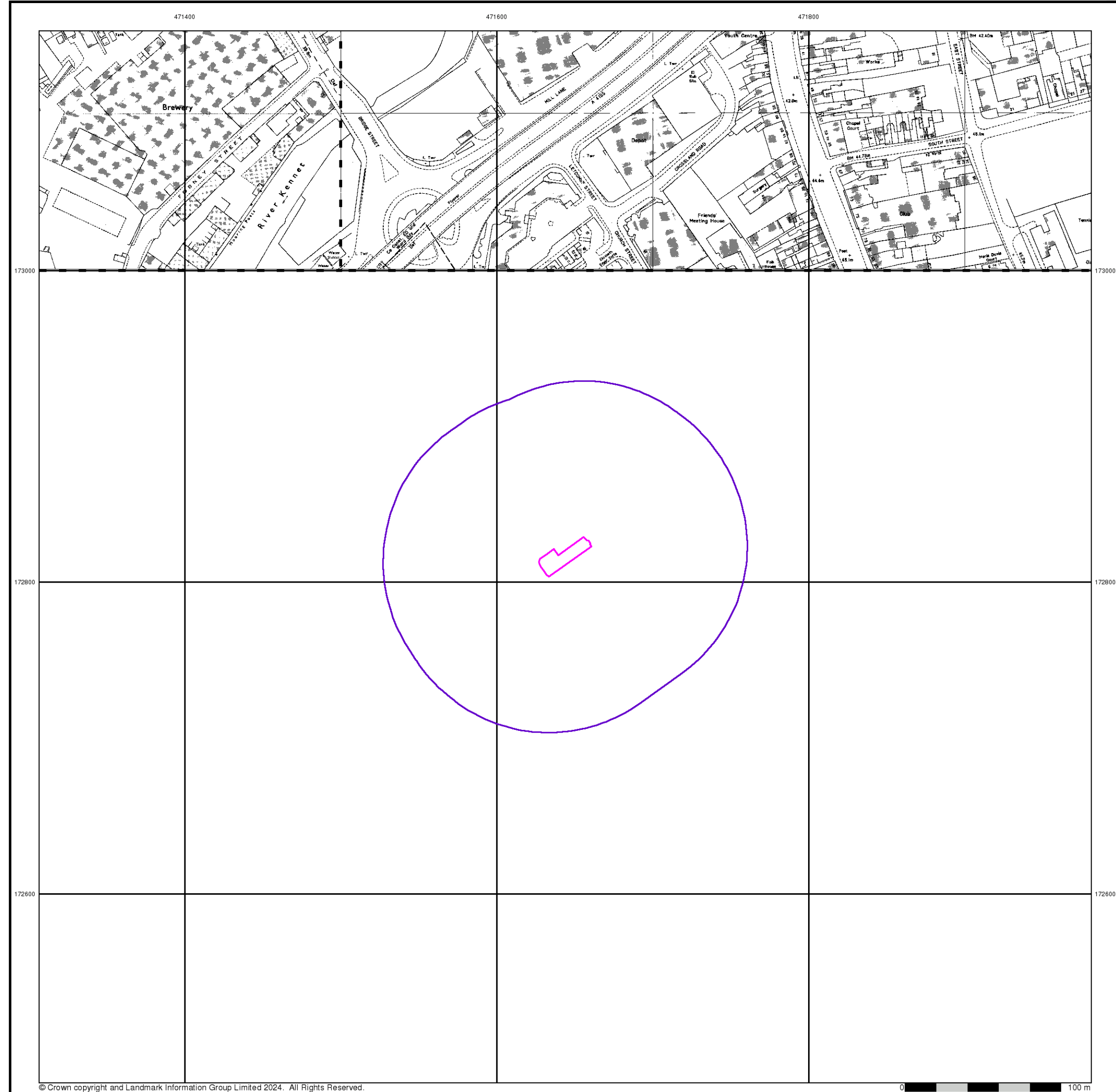
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Ordnance Survey Plan

Published 1980 - 1988

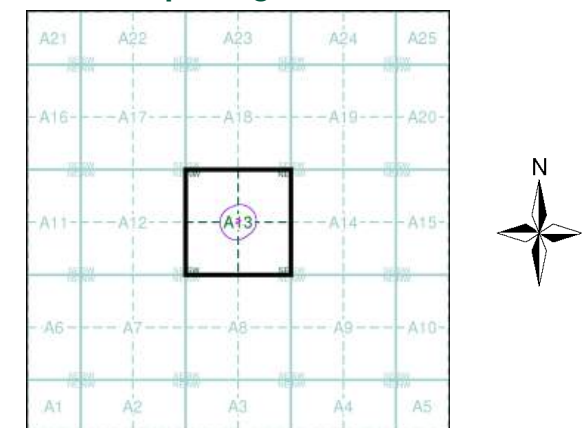
Source map scale - 1:1,250

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)

SU7173SW	SU7173SE
1980	1988
1:1,250	1:1,250

Historical Map - Segment A13

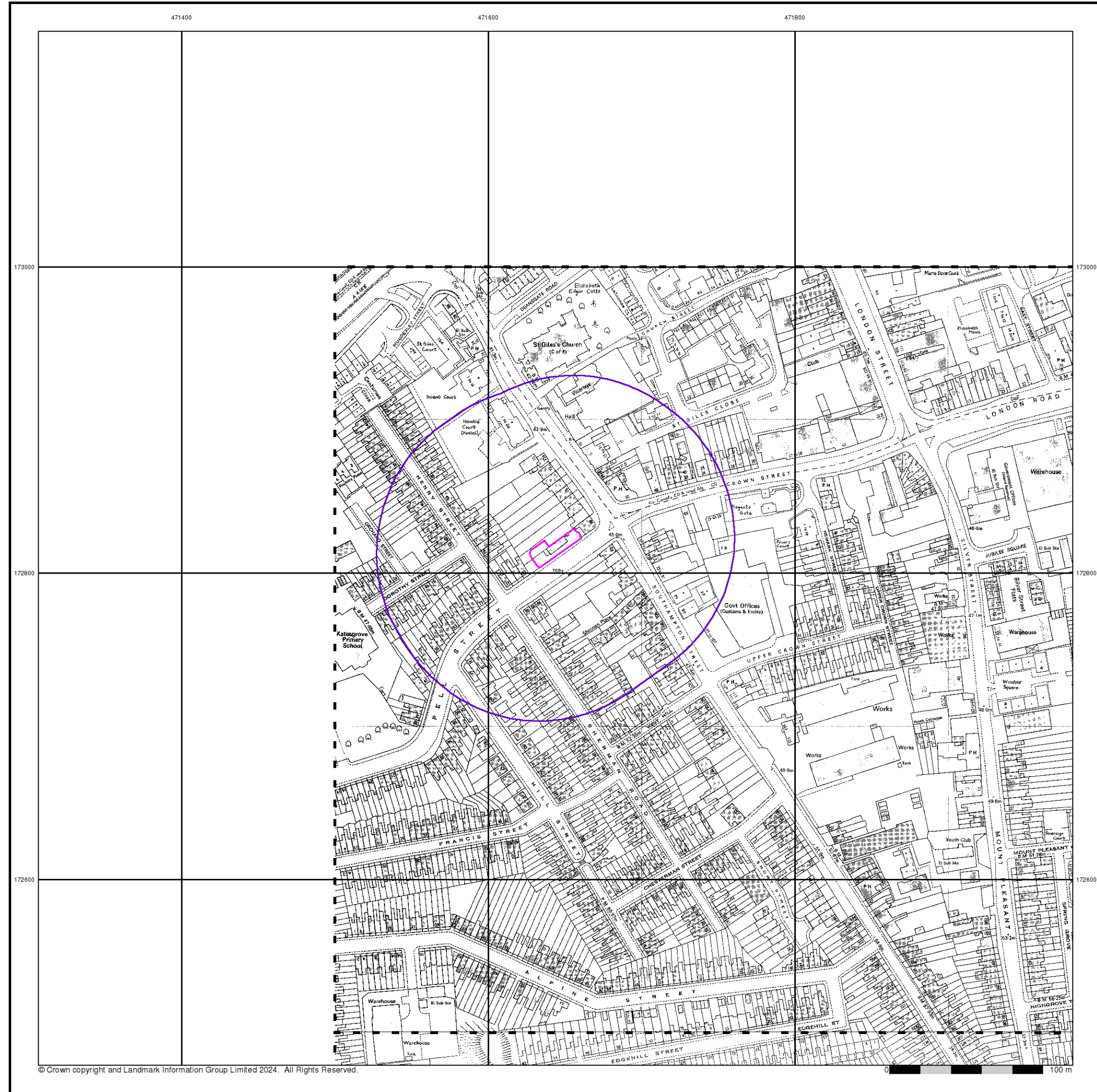


Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP



Additional SIMs

Published 1982 - 1987

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)

SU7172NE
1982
1:1,250

SU7172SE
1987
1:1,250

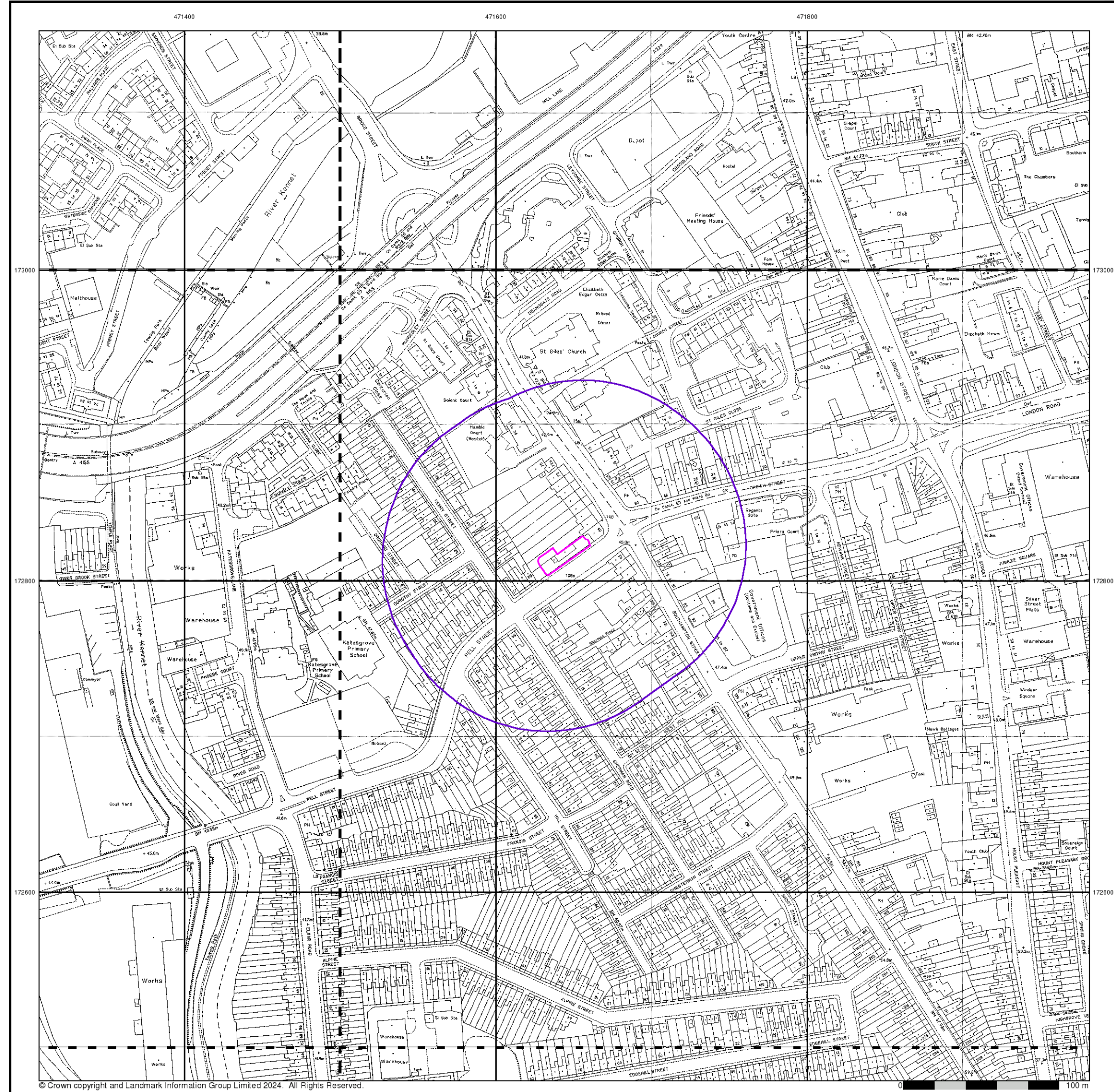
Historical Map - Segment A13

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

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Large-Scale National Grid Data

Published 1993

Source map scale - 1:1,250

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

Map Name(s) and Date(s)

BU7173SW	BU7173SE
993	993
1:1,250	1:1,250

BU7172NW	BU7172NE
993	993
1:1,250	1:1,250

BU7172SW	BU7172SE
993	993
1:1,250	1:1,250

Historical Map - Segment A13

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

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Large-Scale National Grid Data

Published 1995

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)

SU7172NW
1995
1:1,250

Historical Map - Segment A13

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

Site Details

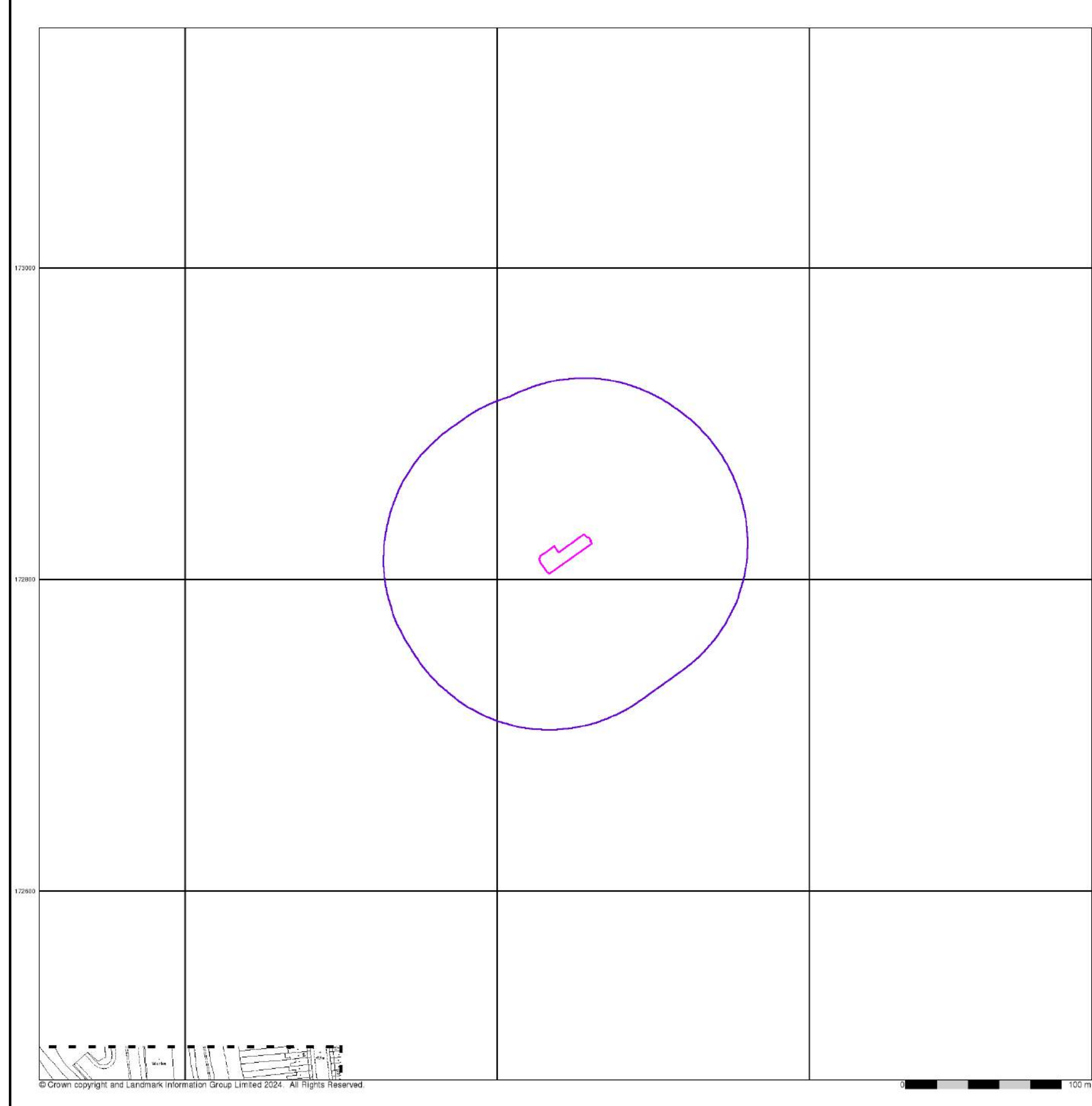
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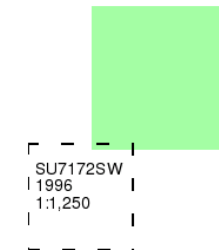
Large-Scale National Grid Data

Published 1996

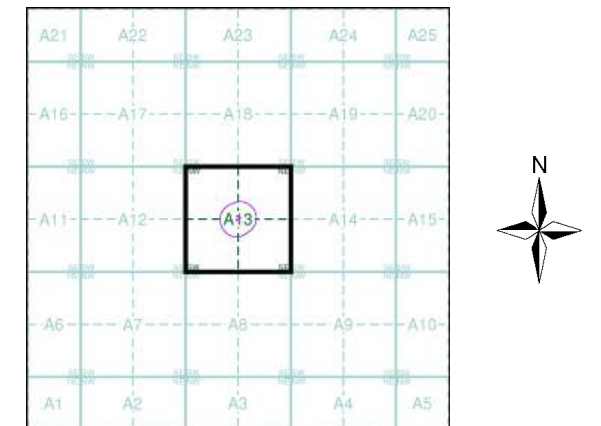
Source map scale - 1:1,250

'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

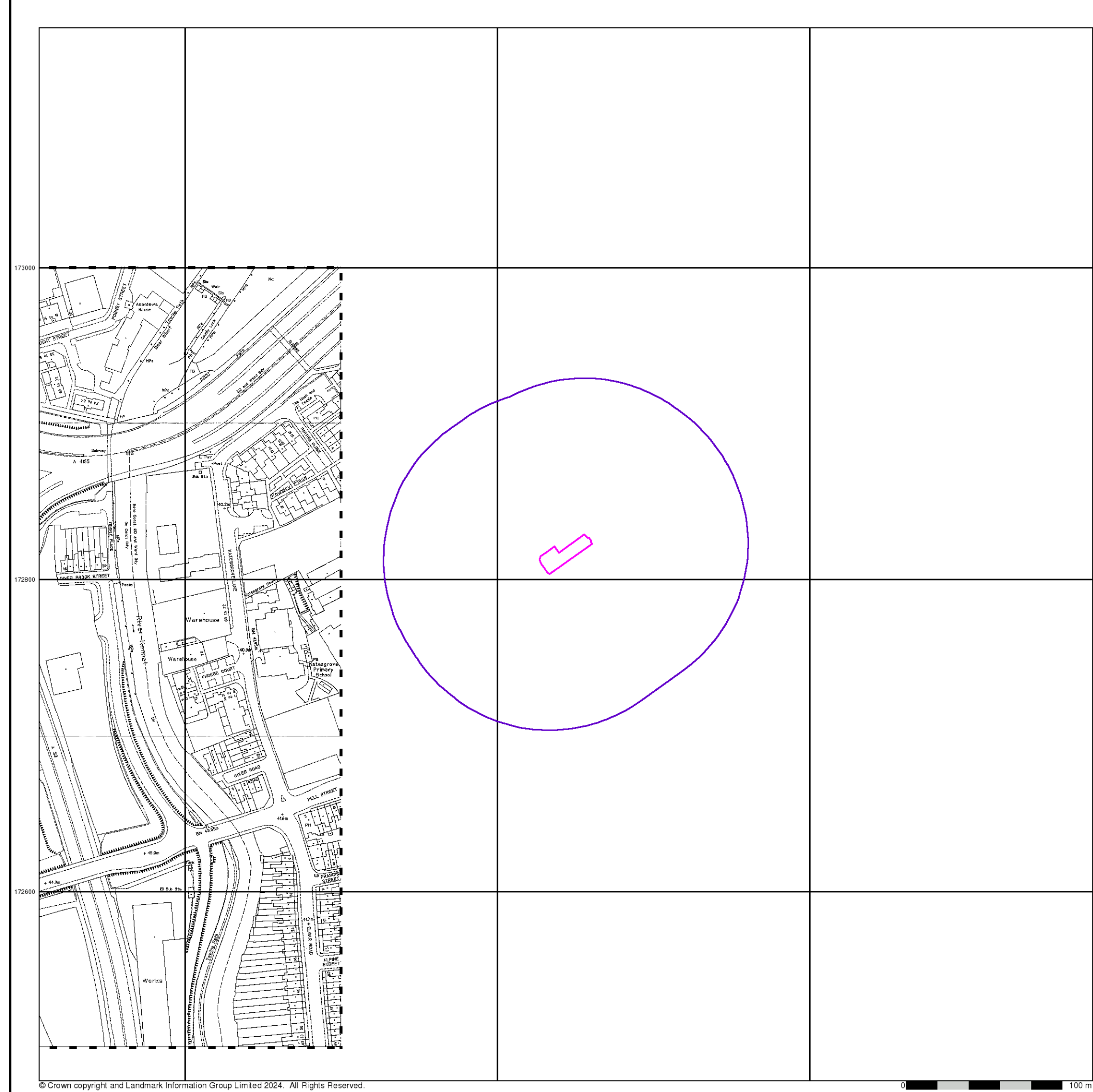


Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

85, Pell Street, READING, RG1 2NP



173000
172800
172600

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0 100 m

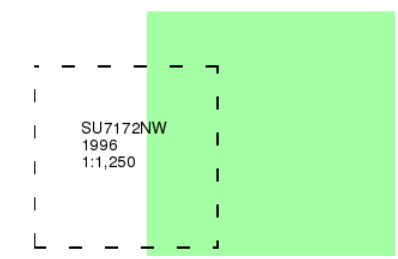
Large-Scale National Grid Data

Published 1996

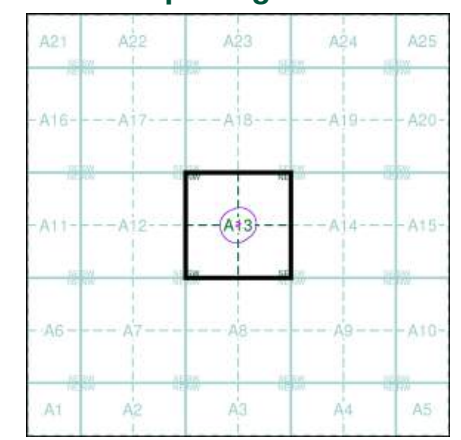
Source map scale - 1:1,250

'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

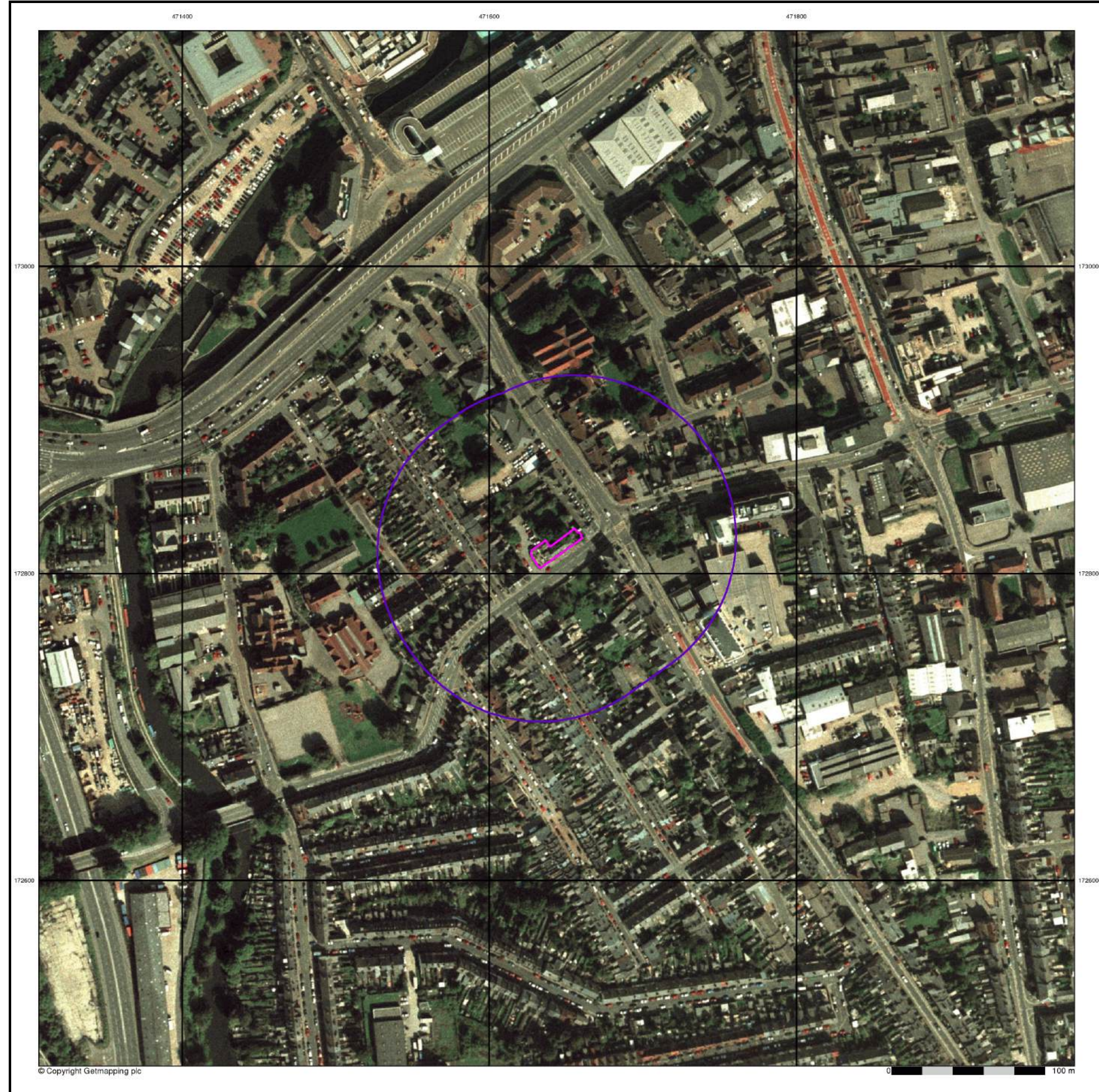


Order Details

Order Number: 345952264_1_1
Customer Ref: BC701
National Grid Reference: 471640, 172820
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

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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

N

Order Details

Order Number:	345952264_1_1
Customer Ref:	BC701
National Grid Reference:	471640, 172820
Slice:	A
Site Area (Ha):	0.04
Search Buffer (m):	100

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Appendix C



Location Reference:	WS1
---------------------	-----

Location ID	Top	Base	H at ch in e o	G e o l o g y	Description
WS1	0.00	0.10			Light brownish grey Concrete. With 60-70% aggregate of fine to coarse, sub-angular to sub-rounded flint.
WS1	0.10	0.75			(MADE GROUND) Dark brown gravelly clayey/silty fine to coarse Sand. Gravel is fine to coarse, sub-angular to sub-rounded flint, brick and concrete.
WS1	0.75	1.20			(MADE GROUND) Brown slightly gravelly clayey/silty fine to coarse Sand. Gravel is fine to coarse angular to sub-rounded flint and occasional brick. (Reworked)
WS1	1.20	1.90			Firm orangish brown slightly sandy silty Clay. Rare coarse gravel sized pockets of dark brown slightly gravelly silty Clay. Gravel is fine, sub-angular to sub-rounded flint and brick. (Re-worked)
WS1	1.90	3.70			Firm orangish brown slightly sandy slightly gravelly silty CLAY. Locally very gravelly. (TAPLOW GRAVEL MEMBER)
WS1	3.70	5.45			Medium dense brown very sandy very clayey/silty fine to coarse, sub-angular to sub-rounded GRAVEL of FLINT. With beds/pockets of firm brown gravelly CLAY. (TAPLOW GRAVEL MEMBER)
WS1	5.45				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				
WS1	0.00				

Depth (m)	SPT or CPT	1st Blow	2nd Blow	3rd Blow	4th Blow	5th Blow	6th Blow	N-value	Seating (mm)	Main (mm)
1.00		0	1	0	1	2	2	5		
2.00		1	2	2	3	3	3	11		
3.00		2	2	2	3	4	5	14		
4.00		4	4	4	3	4	4	15		
5.00		4	3	4	3	3	3	13		
6.00								0		
7.00								0		
8.00								0		
9.00								0		
10.00								0		
11.00								0		
12.00								0		
13.00								0		
14.00								0		
15.00								0		
16.00								0		
17.00								0		
18.00								0		
19.00								0		
20.00								0		

Hole ID	Top Depth	Base Depth	Sample Type	Sample Reference Number	Number of samples	Sample Date	Sample Description
WS1	0.30		ES	1	3		
WS1	0.80		ES	2	3		
WS1	1.50		ES	3	2		
WS1	2.00		ES	4	2		
WS1	1.60		D	5			
WS1	2.00		D	6			
WS1				7			
WS1				8			
WS1				9			
WS1				10			
WS1				11			
WS1				12			
WS1				13			
WS1				14			
WS1				15			
WS1				16			
WS1				17			
WS1				18			
WS1				19			
WS1				20			

Location Reference:	WS2
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[illegible][illegible]

Hole ID	Top Depth	Base Depth	Sample Type	Sample Reference Number	Number of samples	Sample Date	Sample Description
WS2	0.30		ES	1	3		
WS2	0.70		ES	2	3		
WS2				3			
WS2				4			
WS2				5			
WS2				6			
WS2				7			
WS2				8			
WS2				9			
WS2				10			
WS2				11			
WS2				12			
WS2				13			
WS2				14			
WS2				15			
WS2				16			
WS2				17			
WS2				18			
WS2				19			
WS2				20			

Location Reference:	WS3
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Location ID	Top	Base	H at ch in e o	G e o	Description
WS3	0.00	0.05			Light brownish grey Concrete. With 60-70% aggregate of fine to coarse, sub-angular to sub-rounded flint.
WS3	0.05	0.80			(MADE GROUND) Brown/dark brown very gravelly clayey/silty fine to coarse Sand. Gravel is fine to coarse, sub-angular to sub-rounded flint, brick,
WS3	0.80	2.20			(MADE GROUND) Brown slightly gravelly very sandy silty Clay. Sand is fine to coarse Sand. Gravel is fine to coarse angular to sub-rounded flint and occasional brick. (Reworked)
WS3	2.20	4.10			Soft to firm brown/orangish brown slightly gravelly very sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded flint. (TAPLOW GRAVEL MEMBER)
WS3	4.10	5.45			Recovered as: Structureless CHALK, composed of a white slightly gravelly SILT. Gravel is fine to coarse, weak, low density chalk, with frequent flints. (CIRIA GRADE Dm, SEAFORD AND NEWHAVEN CHALK FORMATIONS
WS3	5.45				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				
WS3	0.00				

Depth (m)	SPT or CPT	1st Blow	2nd Blow	3rd Blow	4th Blow	5th Blow	6th Blow	N-value	Seating (mm)	Main (mm)
1.00		0	0	0	0	0	0	0		
2.00		0	0	0	1	1	0	2		
3.00		0	0	1	2	1	2	6		
4.00		5	8	10	11	11	12	44		
5.00		3	3	4	3	4	4	15		
6.00								0		
7.00								0		
8.00								0		
9.00								0		
10.00								0		
11.00								0		
12.00								0		
13.00								0		
14.00								0		
15.00								0		
16.00								0		
17.00								0		
18.00								0		
19.00								0		
20.00								0		

Hole ID	Top Depth	Base Depth	Sample Type	Sample Reference Number	Number of samples	Sample Date	Sample Description
WS3	0.20		ES	1	3		
WS3	1.50		ES	2	2		
WS3	2.30		ES	3	2		
WS3	2.50		D	4			
WS3				5			
WS3				6			
WS3				7			
WS3				8			
WS3				9			
WS3				10			
WS3				11			
WS3				12			
WS3				13			
WS3				14			
WS3				15			
WS3				16			
WS3				17			
WS3				18			
WS3				19			
WS3				20			

Location Reference:	WS4
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[illegible][illegible]

Hole ID	Top Depth	Base Depth	Sample Type	Sample Reference Number	Number of samples	Sample Date	Sample Description
WS4	0.40		ES	1	2		
WS4	2.60		D	2			
WS4	1.20		ES	3	2		
WS4				4			
WS4				5			
WS4				6			
WS4				7			
WS4				8			
WS4				9			
WS4				10			
WS4				11			
WS4				12			
WS4				13			
WS4				14			
WS4				15			
WS4				16			
WS4				17			
WS4				18			
WS4				19			
WS4				20			

Location Reference:	WS5
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[illegible][illegible]

Hole ID	Top Depth	Base Depth	Sample Type	Sample Reference Number	Number of samples	Sample Date	Sample Description
WSS	0.70		ES	1	2		
WSS	1.20		ES	2	3		
WSS	1.70		ES	3	3		
WSS	1.80		D	4			
WSS	2.50		D	5			
WSS				6			
WSS				7			
WSS				8			
WSS				9			
WSS				10			
WSS				11			
WSS				12			
WSS				13			
WSS				14			
WSS				15			
WSS				16			
WSS				17			
WSS				18			
WSS				19			
WSS				20			

Appendix D





Dan Wade
ERDA Associates Ltd
102 Scalpcliffe Road
Burton on Trent
Staffordshire
DE15 9AB

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-12222

Site Reference: Pell Street, Reading

Project / Job Ref: EAL.34.24

Order No: EAL.34.24

Sample Receipt Date: 15/10/2024

Sample Scheduled Date: 15/10/2024

Report Issue Number: 1

Reporting Date: 21/10/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope or ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



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Soil Analysis Certificate					
DETS Report No: 24-12222	~Date Sampled	11/10/24	11/10/24	11/10/24	11/10/24
ERDA Associates Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Pell Street, Reading	~TP / BH No	WS01	WS02	WS03	WS04
~Project / Job Ref: EAL.34.24	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: EAL.34.24	~Depth (m)	0.30	0.30	0.20	0.40
Reporting Date: 21/10/2024	DETS Sample No	743868	743869	743870	743871

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	9.5	8.5	8.3	8.1	8.1
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	979	426	268	471	704
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.10	0.04	0.03	0.05	0.07
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	100	14	25	61	10
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.10	0.01	0.03	0.06	0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	2.3	2.8	3.2	3.5	3
Arsenic (As)	mg/kg	< 2	MCERTS	20	18	14	25	18
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.6	0.3	0.5	0.5	0.3
Chromium (Cr)	mg/kg	< 2	MCERTS	29	16	16	23	20
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	89	53	47	430	44
Lead (Pb)	mg/kg	< 3	MCERTS	518	873	389	917	1100
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	2	< 1	1.8	1.4
Nickel (Ni)	mg/kg	< 3	MCERTS	22	19	17	32	17
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	37	34	29	40	29
Zinc (Zn)	mg/kg	< 3	MCERTS	182	109	115	380	118

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Soil Analysis Certificate - Speciated PAHs					
DETS Report No: 24-12222	~Date Sampled	11/10/24	11/10/24	11/10/24	11/10/24
ERDA Associates Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Pell Street, Reading	~TP / BH No	WS01	WS02	WS03	WS04
~Project / Job Ref: EAL.34.24	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: EAL.34.24	~Depth (m)	0.30	0.30	0.20	0.40
Reporting Date: 21/10/2024	DETS Sample No	743868	743869	743870	743871

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.28	< 0.1	0.17	0.76	0.19
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.19	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	1.66	0.16	1.25	2.29	0.64
Pyrene	mg/kg	< 0.1	MCERTS	1.65	0.16	1.42	2.09	0.58
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.94	< 0.1	0.69	1.19	0.31
Chrysene	mg/kg	< 0.1	MCERTS	0.86	< 0.1	0.72	1.16	0.35
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.18	< 0.1	1.01	1.45	0.40
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.44	< 0.1	0.23	0.57	0.17
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1	< 0.1	0.85	1.30	0.35
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.59	< 0.1	0.56	0.86	0.25
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1	0.17	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.56	< 0.1	0.51	0.77	0.22
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	9.3	< 1.6	7.4	12.8	3.4

~Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-12222	~Date Sampled	11/10/24	11/10/24	11/10/24		
ERDA Associates Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied		
~Site Reference: Pell Street, Reading	~TP / BH No	WS01	WS03	WS05		
~Project / Job Ref: EAL.34.24	~Additional Refs	None Supplied	None Supplied	None Supplied		
~Order No: EAL.34.24	~Depth (m)	0.30	0.20	0.70		
Reporting Date: 21/10/2024	DETS Sample No	743868	743870	743872		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10		
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21		
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	4	3	< 3		
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10		
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21		
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	< 42	< 42		

~Sample details provided by customer and can affect the validity of results



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-12222	~Date Sampled	11/10/24	11/10/24	11/10/24		
ERDA Associates Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied		
~Site Reference: Pell Street, Reading	~TP / BH No	WS01	WS03	WS05		
~Project / Job Ref: EAL.34.24	~Additional Refs	None Supplied	None Supplied	None Supplied		
~Order No: EAL.34.24	~Depth (m)	0.30	0.20	0.70		
Reporting Date: 21/10/2024	DETS Sample No	743868	743870	743872		

Determinand	Unit	RL	Accreditation					
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	6	< 5		
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5		

~Sample details provided by customer and can affect the validity of results



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 24-12222	
ERDA Associates Ltd	
~Site Reference: Pell Street, Reading	
~Project / Job Ref: EAL.34.24	
~Order No: EAL.34.24	
Reporting Date: 21/10/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
743868	WS01	None Supplied	0.30	8.2	Brown sandy clay with stones and concrete
743869	WS02	None Supplied	0.30	14.2	Brown sandy clay with brick
743870	WS03	None Supplied	0.20	9.7	Brown sandy clay with stones and concrete
743871	WS04	None Supplied	0.40	9.4	Brown sandy gravel with stones and concrete
743872	WS05	None Supplied	0.70	11.8	Brown sandy clay with stones and brick

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{U/S}

Unsuitable Sample ^{U/S}

~Sample details provided by customer and can affect the validity of results



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-12222

ERDA Associates Ltd

~Site Reference: Pell Street, Reading

~Project / Job Ref: EAL.34.24

~Order No: EAL.34.24

Reporting Date: 21/10/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (all: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (all: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried

AR As Received

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
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List of HWOL Acronyms and Operators

DETS Report No: 24-12222

ERDA Associates Ltd

~Site Reference: Pell Street, Reading

~Project / Job Ref: EAL.34.24

~Order No: EAL.34.24

Reporting Date: 21/10/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by customer and can affect the validity of results

Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Appendix E



Tier 1 Assessment Criteria

Determinand	Residential Without Produce (mg/kg) - 1% SOM			Source
Arsenic	40.00			LQM S4UL
Boron	11000.00			LQM S4UL
Cadmium	150.00			C4SL
Chromium III	910.00			LQM S4UL
Chromium VI	6.00			LQM S4UL
Lead	310.00			C4SL
Mercury, elemental	1.20			LQM S4UL
Mercury, inorganic	56.00			LQM S4UL
Mercury, methyl	15.00			LQM S4UL
Selenium	430.00			LQM S4UL
Nickel	180.00			LQM S4UL
Copper	7100.00			LQM S4UL
Vanadium	1200.00			LQM S4UL
Zinc	40000.00			LQM S4UL
Total Cyanide	34.00			In House*
	Polycyclic Aromatic Hydrocarbons			
	SOM 1%	SOM 2.5%	SOM 6%	
Benzo(a)pyrene	3.20	3.20	3.20	LQM S4UL
Dibenz(ah)anthracene	0.31	0.32	0.32	LQM S4UL
Acenaphthene	3000 (57) ^{sol}	4700 (141) ^{sol}	6000 (336) ^{sol}	LQM S4UL
Acenaphthylene	2900 (86.1) ^{sol}	4600 (212) ^{sol}	6000 (506) ^{sol}	LQM S4UL
Anthracene	3100 (1.17) ^{vap}	35000.00	37000.00	LQM S4UL
Benzo(a)anthracene	11.00	14.00	15.00	LQM S4UL
Benzo(b)fluoranthene	3.90	4.00	4.00	LQM S4UL
Benzo(ghi)perylene	360.00	360.00	360.00	LQM S4UL
Benzo(k)fluoranthene	110.00	110.00	110.00	LQM S4UL
Chrysene	30.00	31.00	32.00	LQM S4UL
Fluoranthene	1500.00	1600.00	1600.00	LQM S4UL
Fluorene	2800 (30.9) ^{sol}	3800 (76.5) ^{sol}	4500 (183) ^{sol}	LQM S4UL
Indeno(123cd)pyrene	45.00	46.00	46.00	LQM S4UL
Phenanthrene	1300 (36) ^{sol}	1500.00	1500.00	LQM S4UL
Pyrene	3700.00	3800.00	3800.00	LQM S4UL
Naphthalene	2.30	5.60	13.00	LQM S4UL

Note:

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* Values calculated using CLEA v1.071

^{sol} - S4UL presented exceeds the solubility saturation limit, which is presented in brackets.

^{vap} - S4UL presented exceed the vapour saturation limit, which is presented in brackets.

Tier 1 Assessment Criteria

Determinand	Residential Without Produce			Source
	1% SOM	2.5% SOM	6% SOM	
Benzene	0.38	0.70	1.40	LQM S4UL
Ethylbenzene	83.00	190.00	440.00	LQM S4UL
Phenol	750.00	1300.00	2300.00	LQM S4UL
Toluene	800 (869) ^{vap}	1900.00	3900.00	LQM S4UL
Xylene, o-	88.00	210.00	480.00	LQM S4UL
Xylene, m-	82.00	190.00	450.00	LQM S4UL
Xylene, p-	79.00	180.00	430.00	LQM S4UL
Aliphatic C5-C6	42	78	160	LQM S4UL
Aliphatic C6-C8	100	230	530	LQM S4UL
Aliphatic C8-C10	27	65	150	LQM S4UL
Aliphatic C10-C12	130 (48) ^{vap}	330 (118) ^{vap}	760 (283) ^{vap}	LQM S4UL
Aliphatic C12-C16	1100 (24) ^{sol}	2400 (59) ^{sol}	4300 (142) ^{sol}	LQM S4UL
Aliphatic C16-C35	65000 (8.48) ^{sol}	92000 (21) ^{sol}	110000	LQM S4UL
Aliphatic C35-C44	65000 (8.48) ^{sol}	92000 (21) ^{sol}	110000	LQM S4UL
Aromatic C5-C7	370	690	1400	LQM S4UL
Aromatic C7-C8	860	1800	3900	LQM S4UL
Aromatic C8-C10	47	110	270	LQM S4UL
Aromatic C10-C12	250	590	1200	LQM S4UL
Aromatic C12-C16	1800	2300 (419) ^{sol}	2500	LQM S4UL
Aromatic C16-C21	1900	1900	1900	LQM S4UL
Aromatic C21-C35	1900	1900	1900	LQM S4UL
Aromatic C35-C44	1900	1900	1900	LQM S4UL
Combined Aliphatic and Aromatic C44-C70	1900	1900	1900	LQM S4UL

Note:

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^{vap} - S4UL presented exceed the vapour saturation limit, which is presented in brackets.

^{sol} - S4UL presented exceeds the solubility saturation limit, which is presented in brackets.