



PHASE I GEO-ENVIRONMENTAL SITE ASSESSMENT

GEORGE STREET, READING

REC REFERENCE: 1CO107010/P1/R0

REPORT PREPARED FOR: BLAST AWAY LTD

MARCH 2019



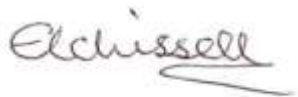
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QUALITY ASSURANCE

Issue/revision	Issue 1	Revision 1	Revision 2
Remarks	Final		
Date	March 2019		
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Project number	1CO107010/P1/R0		





EXECUTIVE SUMMARY

Site Address	George Street, Reading, RG1 7NP
Grid Reference	470583, 173652
Site Area	0.05 ha
Current Site Use	The site is located on George Street and comprises two terraced houses with an entrance to a service yard located between the two properties. In the western section of the site, there is a single storey building, which is used as a commercial unit and a small workshop containing a car which is currently being rebuilt. At the time of the walkover parts of the single storey building was in dis-repair with damage identified within the roof.
Proposed Use	The proposed development comprises the conversion of the existing house into flats and the construction of additional residential units. No development plans have been presented to REC at the time of writing this report.
Environmental Setting	▶ Superficial deposits are Taplow Gravel Member (Secondary A); ▶ Bedrock geology is Seaford Chalk Formation (Principal Aquifer); ▶ The site is not located within a groundwater source protection zone; ▶ The nearest surface water feature is an unnamed river 94m north west; ▶ Site is not located within an floodplain and has a very low risk of flooding from rivers and the sea (RoFRaS); and, ▶ The site is within a 50m groundwater flooding susceptibility area relating to clearwater flooding. This flooding is associated with the unconfined aquifers within the geology.
Site History	The site has comprised residential buildings since 1877.
Initial Conceptual Site Model (CSM)	On-site ▶ Made Ground associated with historical development. Off-site No viable off-site sources present.
Conclusions and Recommendations	Human Health: On-site sources: Very Low Off-site sources: No risk. Controlled Waters: Low Risk due to Principal Aquifer. REC recommends a Phase II Geo-environmental Site Investigation is undertaken in order to obtain geotechnical data for the proposed development. Additionally a full asbestos survey is recommended prior to any demolition.





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1.0 INTRODUCTION

1.1 Background

Resource and Environmental Consultants Ltd (REC) has been commissioned by Blast Away Ltd, herein referred to as 'the Client', to undertake a Phase I Geo-Environmental Site Assessment at George Street, Reading, RG1 7NP 'the site'. A site location plan (ref. 1CO107010-001) is presented within Appendix I.

1.2 Proposed Development

REC understand that the proposed development comprises the conversion of the existing houses into flats and the construction of additional residential units. A proposed development plan is yet to be finalised.

1.3 Scope

The scope of the desk based study is to:

- ▶ Undertake a site walkover to identify any current areas of potential environmental concern in order to establish the source, pathway, receptor conceptual site model (CSM);
- ▶ Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Phase I Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11)); and,
- ▶ Provide recommendations regarding future works required.

1.4 Sources of Information

Background information was sought from the following sources:

- ▶ Groundsure database search (reports GS-5818199 & GS-5818200);
- ▶ Historical mapping dated 1877 to 2014. A selection of historical map excerpts are reproduced in Section 3.1 and Appendix II;
- ▶ Online planning records held by Reading Borough Council;
- ▶ Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2015) and HPA Indicative Radon Atlas for England and Wales); and,
- ▶ British Geological Survey Online Mapping (<http://www.bgs.ac.uk>).





1.5 Risk Classification

REC Ltd has utilised the available data to classify the site on the basis of its likely contaminated land liability and potential for geotechnical constraints in relation to the property development. The risk classification definitions are summarised below:

Table 1.1 Summary of Risk Classification

Risk	Definition
Low	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property.
Low-Moderate	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use. However, minor issues may require further consideration in the event of a future redevelopment of the site etc.
Moderate	Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the site will likely require further site investigation.
Moderate-High	Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that requires further assessment including intrusive ground investigations.
High	Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine to level of risk and associated liability.

1.6 Confidentiality

REC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from REC. The limitations of this report are presented within Appendix III.





2.0 SITE SETTING

2.1 Site Details

Table 2.1 Site Details

Site Address	George Street, Reading, RG1 7NP
National Grid Reference	470583, 173652
Site Area	0.05 ha

All acronyms used within this report are defined in the Glossary presented in Appendix IV.

2.2 Current Site Use

Site Walkover Brief

A site walkover was undertaken on 6th March 2019 and the following site description comprises the site layout and features based on the REC Engineer's observations at the time. Selected photographs from the site walkover are presented in Appendix V.

The site is located on the eastern side of George Street and comprises of two mid-terrace houses, with an entrance to a service yard located between the two properties. The eastern section of the site comprises of a single storey building which is used as a commercial office unit and a small workshop containing a car which is currently being rebuilt. At the time of the walkover parts of the single storey building were in dis-repair with damage identified to the ceiling.

The service yard is currently used for parking for the two residential properties and the commercial unit. Hardstanding is located throughout the site.

Hazardous Materials Storage

No Above Ground Storage Tanks (ASTs) or Underground Storage Tanks (USTs) were observed on the site.

Polychlorinated Biphenyls (PCBs)

No electricity substations were observed on site.

Asbestos Containing Material (ACM)

No evidence of Asbestos Contaminating Materials was identified during the walkover. However given the age of the commercial building on the site, it is likely that ACM may be found within material contained inside the building.





Waste Storage

No hazardous waste streams were identified on site.

2.3 Surrounding Area

The surrounding land uses are summarised in Table 2.2 below:

Table 2.2 **Summary of Land use**

Direction	Land Use
North	Residential with railway line beyond. George Street Allotments are located north west of the site.
East	Residential
South	Residential
West	Residential





3.0 SITE HISTORY

3.1 Historical Maps

A review of historical maps pertinent to the site is summarised in Table 3.1 below:

Table 3.1 Summary of Potentially Contaminative Historical Land Uses

Map Edition	Historical Land Use	Historical Map Excerpt
1877 - 1879 (1:500, 1:2,500 & 1:10,560)	The site comprises of three terrace properties and associated gardens. The surrounding area comprises of terrace housing and open space with Stanley Dairy located approximately 60m south west and the Great Western Railway is 110m north.	 Map extract from 1870 (1:2,500)
1900 - 2014 (1:2,500, 1:10,000 & 1:10,560)	In 1900 three outbuildings to the east of the site have been constructed. The surrounding area remains predominantly residential. In 1912, a corporation yard is located approximately 200m north east. From 1959 to 1993, a depot is located circa 150m south west of the site. Various other depots and works are located within 500m of the site.	 Map extract from 1961 (1:2,500)





3.2 Historical Database

A review of potentially contaminative land uses identified on historical Ordnance Survey maps within a 250m radius of the site is summarised below in Table 3.2:

Table 3.2 Summary of Potentially Contaminative Historical Land Uses

Surrounding Feature	Distance (m)	Dates	Direction
Railway Sidings	95	1971-1994	NW
Filter Tanks*	103	1971-1993	N
Electricity Substation*	166	1993	S
Railway Fuelling Depot with associated Tanks	167	1971-1994	W
Nursey (plants)	172	1913	S
Unspecified Works	188	1977-1994	NE
Agricultural Engineering Works	188	1971	NE
Railway Building	198-232	1913-1994	N
Corporation Yard	200-204	1913-1994	NE
Railway Sidings	213-220	1898-1962	N
Filling Station	211	1978	SW
Refuse Heap	218	1913	N
Garage	230-237	1958-1986	S

*Nearest off site tank and electricity substation only listed.

3.3 Planning History

REC has undertaken a review of online planning records held by Reading Borough Council which identified no environmentally pertinent information.





4.0 ENVIRONMENTAL SETTING

4.1 Geology & Hydrogeology

The British Geological Survey (BGS) memoirs with respect to the site area indicates that the site is underlain by the following geological sequence:

Table 4.1 Summary of Geological Information

Classification	Geological unit	Description	Aquifer Classification	Permeability	Sensitivity
Superficial	Taplow Gravel Member	Sand and Gravel	Secondary A	High to Very High	Low
Bedrock	Seaford Chalk Formation	Chalk	Principal	Very High	Moderate

The BGS records indicated that the site is underlain by superficial deposits of the Taplow Gravel Member overlying the Seaford Chalk Formation.

The nearest historical borehole (SU77SW34) is located approximately 45m to the north west. The borehole record indicates Made Ground to a depth of 1.35mbgl overlying drift deposits comprising of grey sand and gravel to the base of the borehole at 4.00mbgl.

There are 6no. groundwater abstractions within 1km of the site with the closest located 342m north of Cardiff Road for process water. There are 3no. potable water abstractions within 1km of the site and the closest is located 528m north east at Meadow Road for drinking, cooking, sanitary and washing.

The site is not located within a groundwater Source Protection Zone.

The surface soil on site is classified as having a high leaching potential; these soils are therefore assumed to be highly permeable in the absence of site-specific information.

4.2 Geotechnical Data

Geotechnical data presented within the data search identifies the following ground conditions relating to natural ground subsidence:

Table 4.2 Summary of Data Search Geotechnical Information

Hazard	Designation	Comments
Shrink-Swell Clay	Negligible	Ground conditions predominantly non-plastic. No special ground investigation required.
Landslides	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides.
Soluble Rocks	Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow.
Compressible Ground	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits.



Hazard	Designation	Comments
Collapsible Deposits	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
Running Sand	Very Low	Very low potential of running sand problems after major changes in ground conditions.

It should be noted that this data is qualitative and based on anticipated ground conditions only and not on any other topographical information such as trees.

4.3 Mining and Ground Workings

The site does not lie within an area affected by coal mining and as such, no coal authority reports were required for this assessment. The Groundsure report indicates that localised small scale chalk mining may have occurred 61m north west. Potentially difficult ground conditions associated with this are unlikely and at a level where they need not be considered.

There are no current ground workings within 250m radius of the site.

4.4 Railways and Tunnels

The nearest railway siding and railway is located 95m north west of the site and is a junction from the mainline, running from south-west to north-east. The railway line is noted to be on a raised embankment. No historical tunnels are recorded within 250m of the site.

4.5 Hydrology

The nearest surface water feature is an unnamed river located 94m north west.

The site is not located within an Environment Agency Floodplain zone and the site has a very low risk of flooding from rivers and the sea (RoFRas). However, the site is within a 50m groundwater flooding susceptibility area, relating to Clearwater flooding. There is where there is an unconfined aquifer within the geology, which has the potential to flood.

4.6 Radon Risk Potential

The site is not situated within a radon affected area as less than 1% of properties are above the action level, and therefore no radon protective measures are necessary in the construction of new buildings.

4.7 Industrial Land Uses

Available records identify the following potentially contaminative current industrial land uses within 250m of the site. However, given the distance from the site these are all too far away to be of concern.



Table 4.3 Current Industrial Land Uses

Company	Activity	Distance (m)	Direction
Depot	Container and storage	150	W
Electricity Substation*	Electrical Features	170	S
Tank*	Tanks	175	S
Pipelines	Pipelines	204	NW
BP Service Station	Petrol and Fuel Station	219	SW
Works	Unspecified Works or Factories	220	NE

**nearest substation and tank only listed*

4.8 Sensitive Land Uses

The site is located within a Nitrate Vulnerable Zone. No other environmentally sensitive land uses are within 2km of the site.

4.9 Site Sensitivity Assessment

The site is considered to be located within a **low to moderate** sensitivity setting due to the following reasons:

- ▶ The site is within a residential area;
- ▶ The superficial geology is a Secondary A Aquifer;
- ▶ The bedrock geology is a Principal Aquifer;
- ▶ The surface soil on site is classified as having a high leaching potential;
- ▶ The nearest surface water feature is located 94m north west; and
- ▶ The site is within a Nitrate Vulnerable Zone.





5.0 CONSULTATIONS

5.1 Contaminated Land Officer

A request for information regarding contaminated land concerning the site was sent to the contaminated land team at Reading City Council on 27th February 2018. However, no reply had been received at the time of writing this report. Any pertinent information received following the issue of this report shall be communicated to the client.

5.2 Landfill Sites and Waste Treatment Sites

A review of available information indicates that there are 10no. records of active or historical landfill and waste treatment sites within a 1km radius of the site. The details of these records are shown in Table 5.1 below:

Table 5.1 Landfill and waste treatment sites

Site	Waste Type	Distance (m)	Direction	Details
Great Knollys Street	Unknown	174	NE	Amenity Recycling Centre
E.G.W Carter	Metal	178	W	Metal Recycling Site
Cow Lane	Inert	351	NW	Environment Agency Historical Landfill
Refuse Yard	Unknown	378	NE	Historical Mapping Records 1879
Elliot Metal Company	Metal	398	W	Metal Recycling Site
Cardiff Road	Unknown	489	N	Waste Transfer Station
128 Cardiff Road	Unknown	513	N	Materials Recycling Facility
128 Cardiff Road	Unknown	520	N	Waste Transfer Station
Richfield Avenue	Commercial, Household, Liquid sludge	708	N	Environment Agency Historical Landfill
Loverock Road	Unknown	960	NW	Waste Transfer Station

5.3 Regulatory Database

The following information has been obtained from a commercially available environmental database. The summary table only includes records not otherwise detailed in the report.



Table 5.2 Summary of Data Search Regulatory Data

Activity	0 - 249m	250 - 500m	Details
Historic IPC Authorisations	0	3	All records relate to Oxxem Ltd located 437m north west for inorganic chemical processes.
Part A and IPPC Authorised Activities	0	1	The single record for a Part A authorised activity is located 494m north at Kingfisher Colours Ltd for organic chemicals.
List 2 Dangerous Substances Sites	0	1	The single record for dangerous substances is located 448m north at Unimet Enamellers Ltd for Chromium.
Part A and B Activities	1	4	The nearest Part b is located 220m south west at Texaco Service Station for the unloading of petrol into storage at service stations.
Licensed Discharge Consents	3	3	The nearest licenced discharge consent is located 181m north at Cow Lane bridge for trade discharges.
Water Industry Referrals	0	2	The nearest water industry referral is located 444m north west at Quick Circuits Ltd.
Hazardous Substance Consents	0	1	A single record of hazards substance consents is located 419m north west at Jewells Calor Gas for the storage, sales and distribution of liquidified petroleum gas in cylinders and bulk.
COMAH and NIHHS sites	0	1	A single record of a historical NIHHS site is located 387m north was at Calor Gas Ltd.
Pollution Incidents	1	0	A single pollution incident was recorded on 23/07/07 located 141m north of site. The pollutant involved was oils and fuel. No impact was recorded to air. However a Category 2 (significant) impact was recorded to land and a Category 3 (minor) impact was recorded to water.
Contaminated Land under Part 2A	1	0	A single record of contaminated land under Part 2A is located 50m north west at George Street Allotments, identified in 2008. Benzo(a)Pyrene identified in the made ground and compost. Source is likely to be ash added by allotment holders and adjacent railway runoff. The land has been remediated, and is now considered to be suitable for use.





6.0 CONCEPTUAL SITE MODEL (CSM)

6.1 Initial CSM

In accordance with Environment Agency, CLR 11 (2004) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), REC Ltd has developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area.

6.2 Contaminant Sources

On-site Potential Sources

- ▶ Made Ground associated with multiple phases of historical development at the site; and
- ▶ Workshop used for car repair.

Off-site Potential Sources

There are no off-site potential sources deemed to be a viable risk. Those identified within the groundsure are too far away or historic to be of concern.

6.3 Potential Pathways

Receptors may be potentially at risk from the identified potential sources of contamination via the following pathways:

- ▶ Migration of mobile contaminants on or off site via services, sewers and manmade conduits;
- ▶ Direct contact, ingestion and inhalation of contaminants on site;
- ▶ Migration of contaminated dusts during refurbishment;
- ▶ Migration of mobile contaminants into groundwater and transport into surface waters; and,
- ▶ Migration of hazardous gases.





6.4 Potential Receptors

Human Receptors

REC has identified the following potential receptors:

- ▶ Future users of the site and buildings; and,
- ▶ Users of adjacent areas due to off-site migration of vapours or contaminated dust.

Construction workers are not considered to be a plausible receptor as exposure will be managed through the use of appropriate PPE and hygienic working practices, as required under HSE/ CDM regulations. Furthermore exposure is likely to be for a short duration.

Controlled Waters

- ▶ The bedrock geology is a Principal Aquifer.

6.5 Risk Assessment

CIRIA 552: Contaminated Land Risk Assessment 'A Guide to Good Practice' provides guidance on risk assessment taking into account factors such as severity of the potential harm that may arise from a successful pollutant linkage, potential magnitude of the hazard, and the sensitivity of the target receptor. Risk assessment is initially assessed by determining the severity of the potential hazard, which takes into account receptor sensitivity and the magnitude of the potential impact as detailed in Tables 6.1 & 6.2 below.

6.5.1 Severity

Table 6.1 Receptor sensitivity

Category	Human sensitivity	Environmental sensitivity
Very Low	Ground workers	Non-sensitive water course
Low	Commercial / Industrial	Secondary Aquifer
Moderate	Residential without plant uptake	Principal Aquifer / Sensitive Watercourse
High	Residential with plant uptake	Groundwater Source Protection Zone

Table 6.2 Magnitude of Impact

Category	Example
No Impact	No identified or potential pollutants present / Greenfield site
Slight Impact	Minor leaks and spills from fuel infrastructure, inert landfills / Residential, retail or Offices
Moderate Impact	Major leaks and spills from fuel infrastructure / Railways, Collieries, Scrapyards
Gross Impact	Heavily contaminated industrial sites, hazardous landfills / Gas works, Chemical Works



Severity is subsequently assessed considering the potential receptor and magnitude of impact as outlined within Table 6.3 below.

Table 6.3 Determination of level of severity for potential hazards

	Receptor Sensitivity			
	Very Low	Low	Moderate	High
No Impact	Minor	Minor	Minor	Minor
Slight Impact	Minor	Minor	Minor	Mild
Moderate Impact	Minor	Minor	Mild	Medium
Gross Impact	Minor	Mild	Medium	Severe

6.5.2 Likelihood

The likelihood of an event is assessed while considering the potential for presence of a contaminant, presence of receptor, and the substantiality of the pollutant pathway. Likelihood is broken down into four separate categories within the CSM as shown in Table 6.4 below:

Table 6.4 Definitions of likelihood categories

Category	Definition
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable.
Low Likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor.

6.5.3 Risk Rating

Table 6.5 demonstrates the methodology used to provide an overall risk rating within the preliminary CSM with respect to any potential sources of contamination that may affect the site. An overall risk rating is assigned to each potential contaminant considering the assessed likelihood and severity as determined using the methodologies within Tables 6.1 to 6.4.

Table 6.5 Level of risk rating for hazard definition

	Severity			
	Minor	Mild	Medium	Severe
Unlikely	Very Low	Very Low	Low	Low / Moderate
Low Likelihood	Very Low	Low	Low / Moderate	Moderate
Likely	Low	Low / Moderate	Moderate	High
High Likelihood	Low / Moderate	Moderate	High	Very High

6.6 Conceptual Site Model

A site specific CSM has therefore been created using the above information and is provided on the following page:



Table 6.6 Conceptual Site Model (CSM) Table

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Severity	Overall Risk Rating	Active / Inactive
On-Site							
Made Ground associated with historical redevelopment of the site	Heavy Metals	Ingestions of soils Dermal contact with soils	Future site users	Low likelihood	Minor	Very Low	Potentially Active – further investigation recommended
			Controlled waters	Low likelihood	Minor	Very Low	
	Asbestos Fibres in Soil	Inhalation of fibres	Future site users	Low likelihood	Mild	Low	
				Low likelihood			
	Total Petroleum Hydrocarbons (TPH)	Ingestion of soils Dermal contact with soils Inhalation of ground gases	Future site users	Low likelihood	Minor	Very Low	
			Controlled waters	Low likelihood	Minor	Very Low	
	Polycyclic Aromatic Hydrocarbons (PAH)	Ingestion of soils Dermal contact with soils Inhalation of ground gases	Future site users	Low likelihood	Minor	Very Low	
			Controlled waters	Low likelihood	Minor	Very Low	
	Ground Gas (CH4 and CO2)	Inhalation of ground gases	Future site users	Low likelihood	Minor	Very Low	
			Controlled waters	Low likelihood	Minor	Very Low	
Workshop on site used for car repair	Heavy Metals, PAH & TPH	Ingestion of soils Dermal contact with soils Inhalation of ground gases	Future site users	Low likelihood	Minor	Very Low	Potentially Active – further investigation recommended
			Controlled waters	Low likelihood	Minor	Very Low	

Note: PAH- Polycyclic Aromatic Hydrocarbon, TPH –Total Petroleum Hydrocarbon



7.0 CONCLUSIONS & RECOMMENDATIONS

7.1 Human Health

Given the proposed development of residential flats, the risk posed to human health (future users) from **on-site** source is considered to be **Very Low to Low**, and there is no risk posed by **off-site** sources.

7.2 Controlled Waters

As the site is underlain by a Principal Aquifer, the risk posed to controlled waters is considered to be **Low**.

7.3 Overall Environmental Risk Assessment

Overall, the preliminary risk classification of the site in relation to the proposed conversion is considered to be **Very Low to Low**.

7.4 Recommendations

- ▶ REC recommends that a Phase II Geo-Environmental Site Investigation is undertaken in order to obtain geotechnical data with regards to the proposed development;
- ▶ A full asbestos survey is recommended prior to any demolition.

END OF REPORT





APPENDIX I DRAWINGS

APPENDIX I DRAWINGS



KEY:

Site Boundary

N

The client must not amend any drawing, design or other intellectual property produced by REC Ltd, without permission in writing from REC Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, REC Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property.

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				Approved by: PT		
				Date: February 2019		



APPENDIX II
HISTORICAL MAPPING



Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: County Series Town Plan

Map date: 1877

Scale: 1:500

Printed at: 1:1,000



Surveyed 1877
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

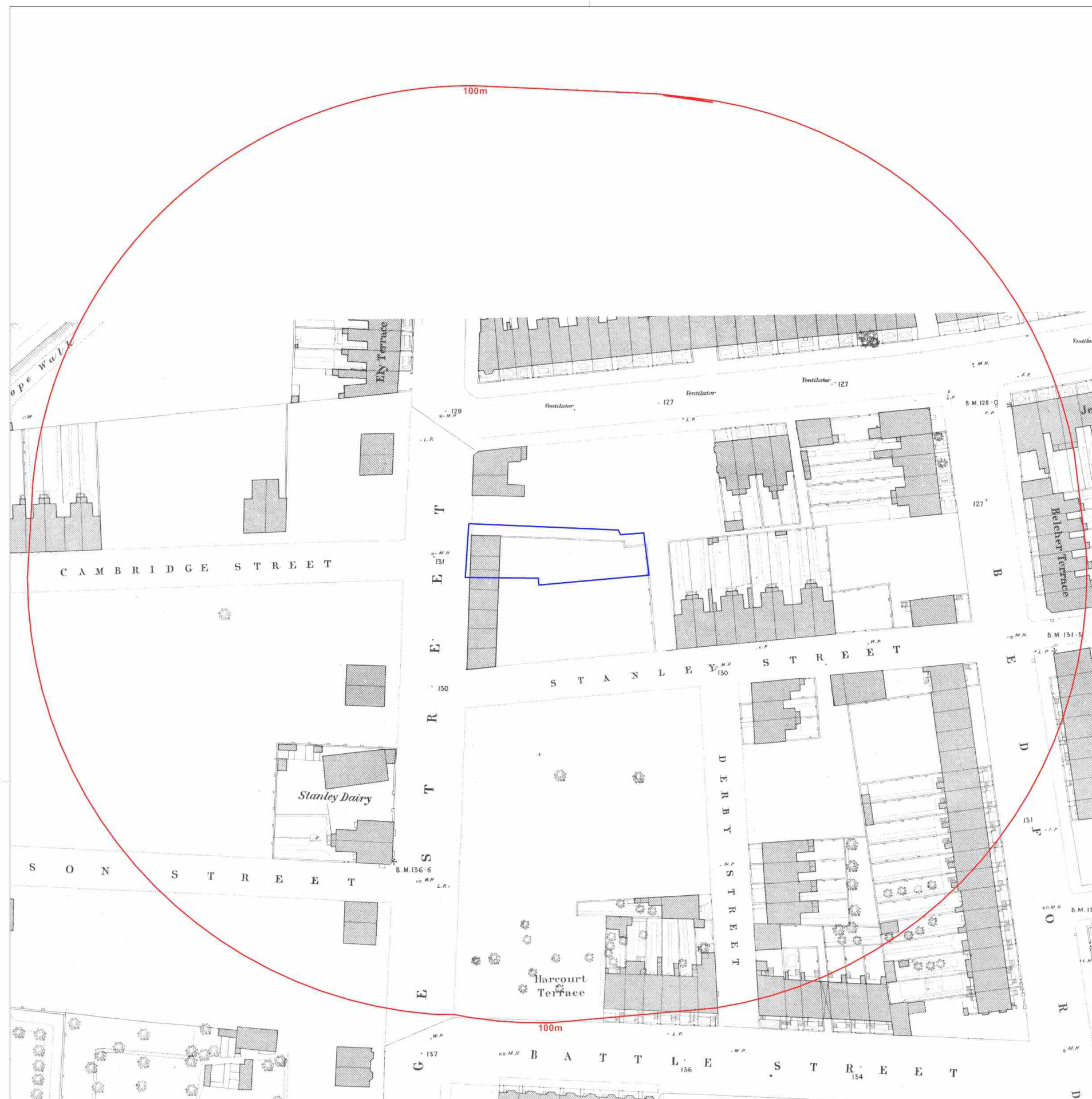


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E: info@groundsure.com
W: www.groundsure.com

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Production date: 13 February 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: County Series

Map date: 1879

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1879
Revised 1879
Edition N/A
Copyright N/A
Levelled N/A

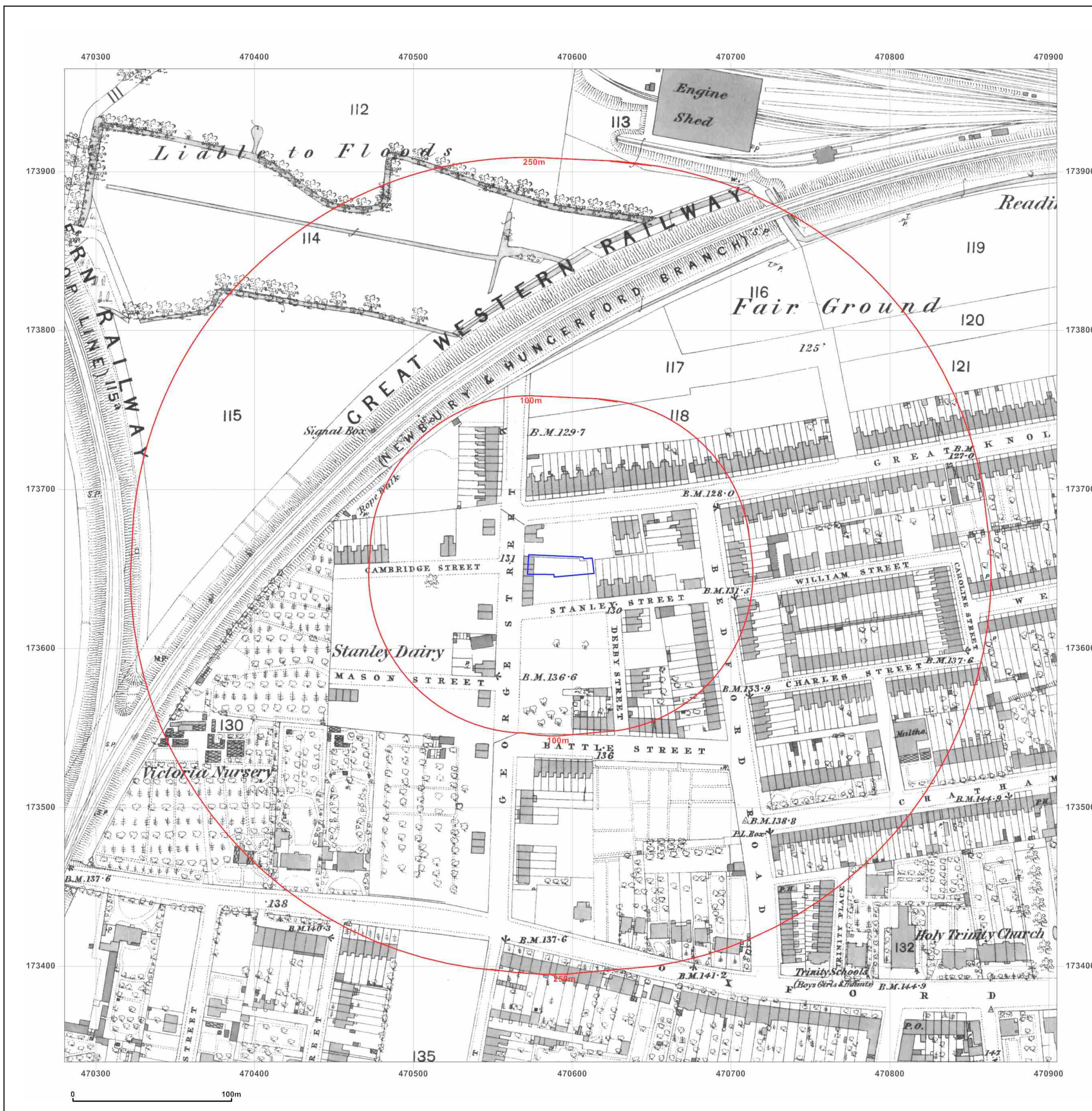


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Production date: 13 February 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: County Series

Map date: 1900

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

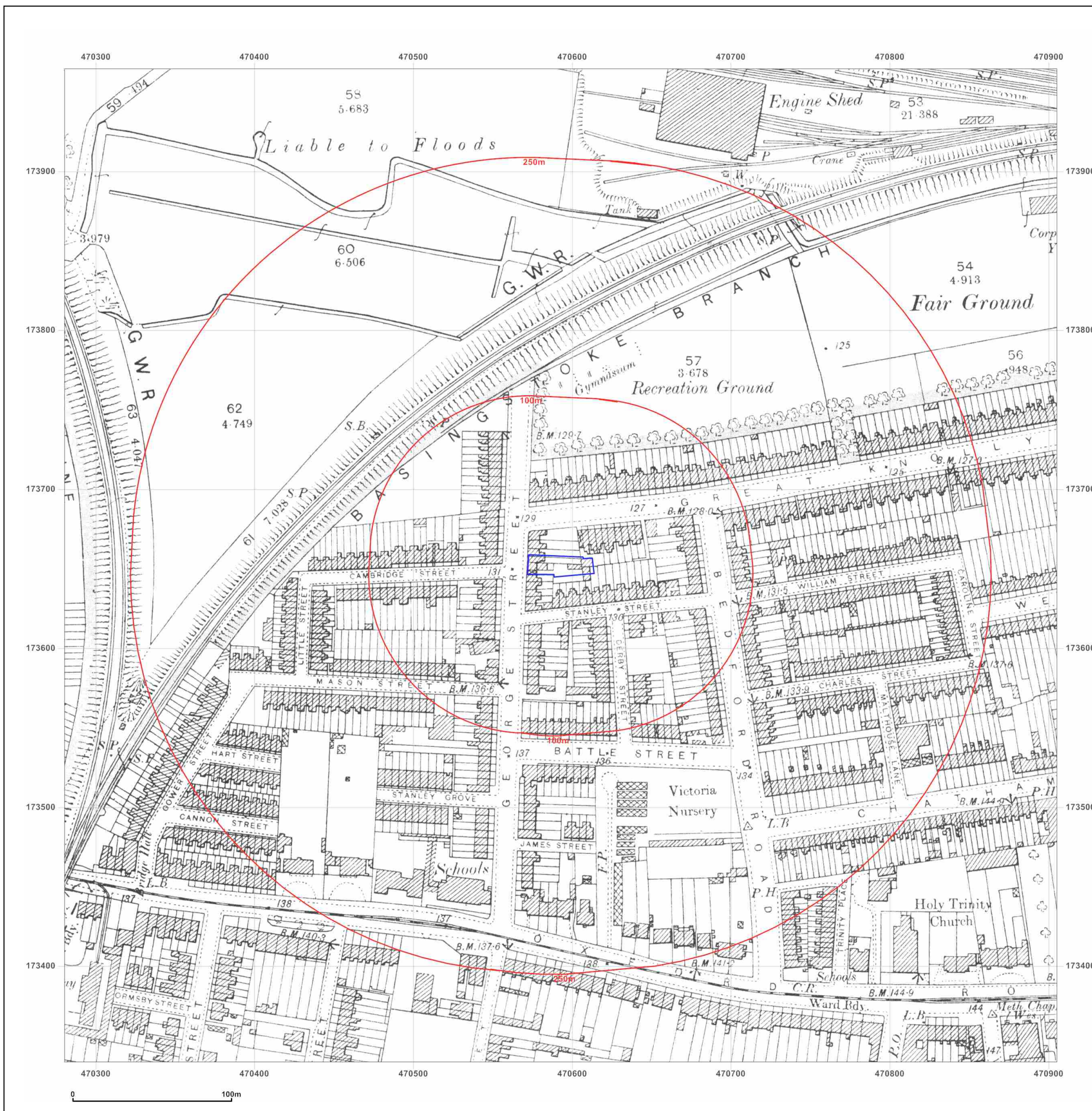


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Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: County Series

Map date: 1931

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1931
Revised 1931
Edition N/A
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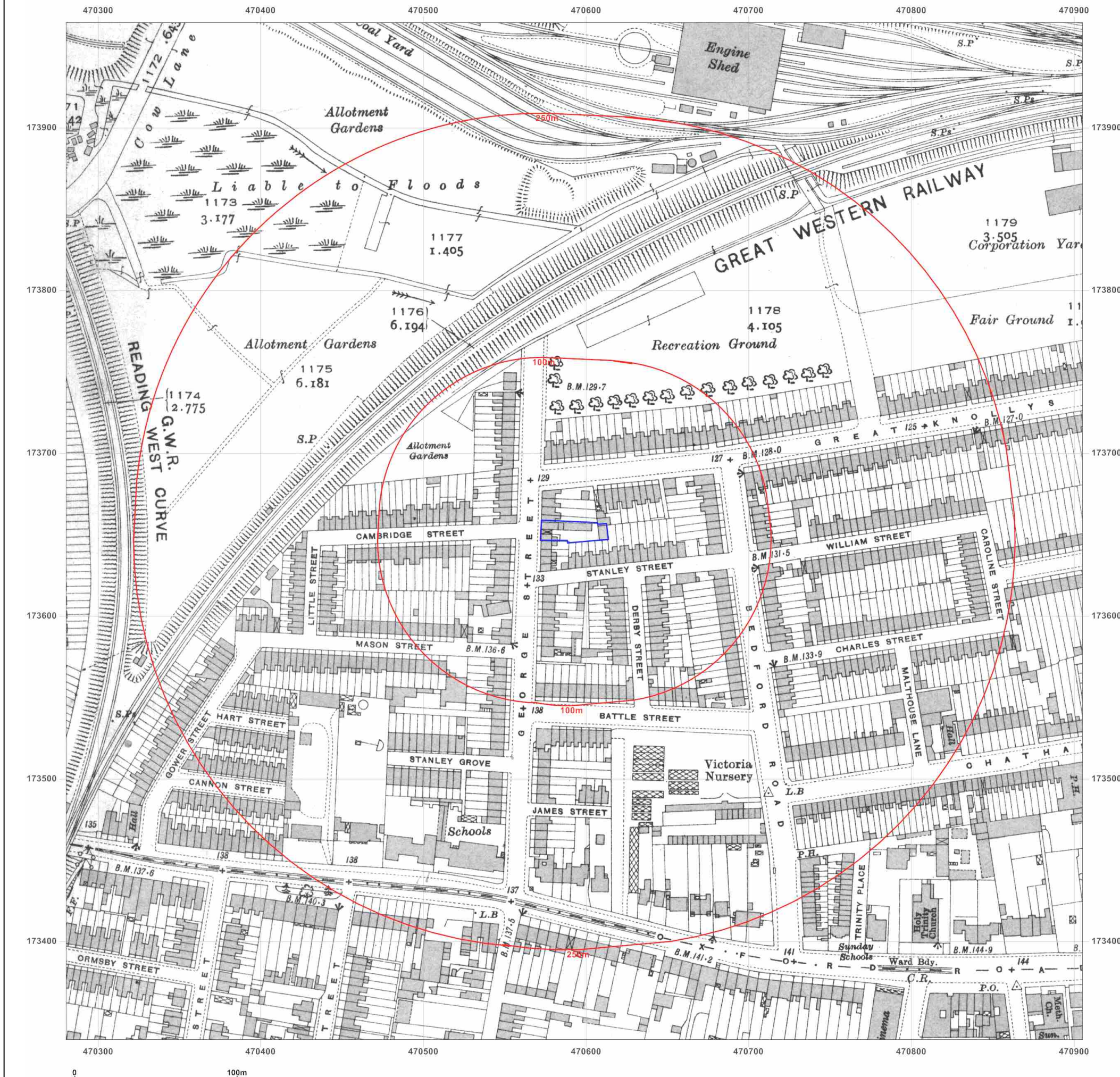


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Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: National Grid

Map date: 1959

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1958 Revised 1958 Edition N/A Copyright N/A Levelled N/A	Surveyed 1958 Revised 1958 Edition N/A Copyright 1959 Levelled 1951



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Site Details:

49, GEORGE STREET,
READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: National Grid

Map date: 1961

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition 1961
Copyright 1961
Levelled 1951

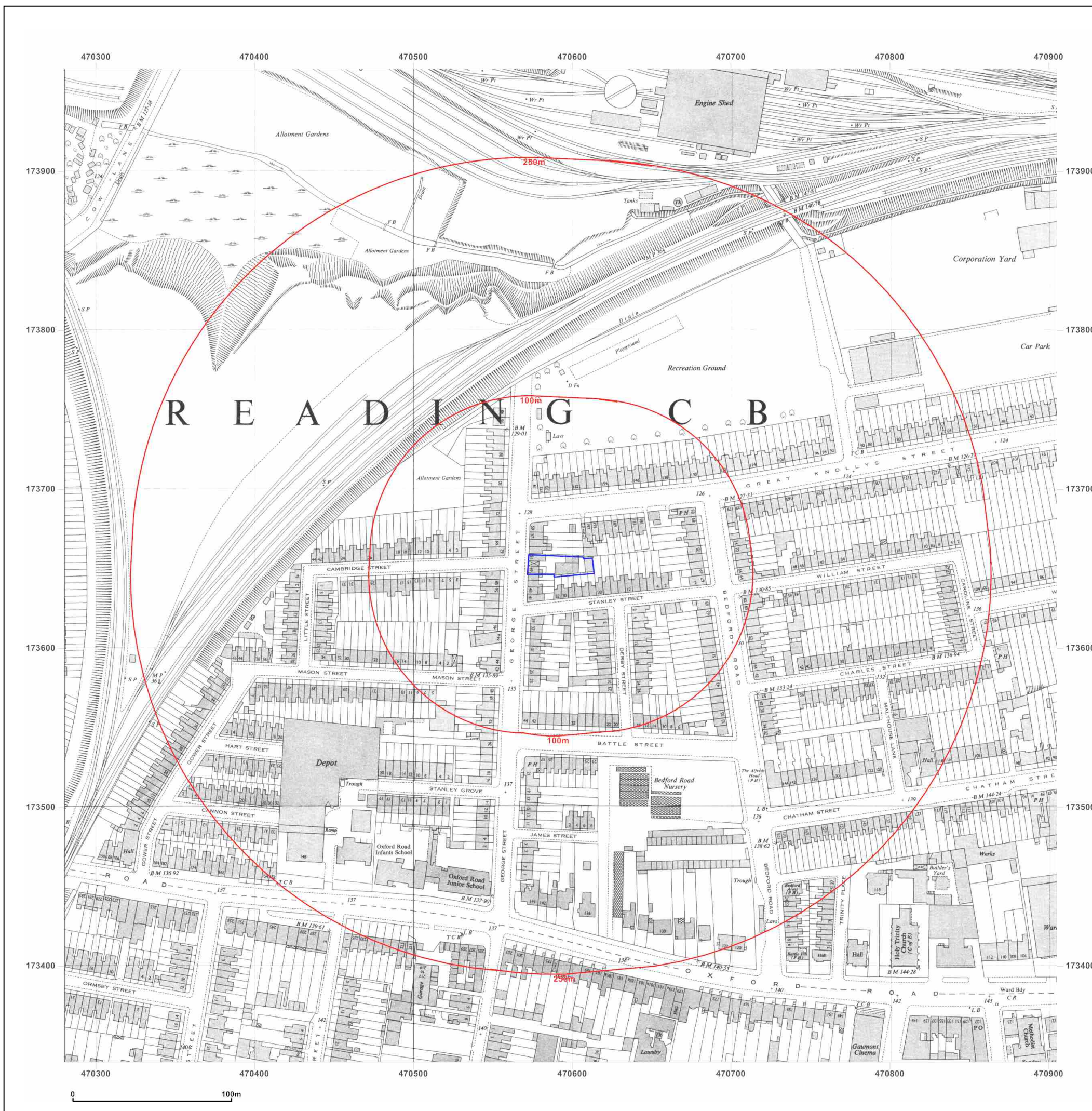


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Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: National Grid

Map date: 1971

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled 1951

Surveyed 1958
Revised 1971
Edition N/A
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Site Details:

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READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: National Grid

Map date: 1986-1988

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973
Revised 1988
Edition N/A
Copyright 1988
Levelled 1973

Surveyed 1973
Revised 1986
Edition N/A
Copyright 1986
Levelled 1973

Surveyed 1972
Revised 1986
Edition N/A
Copyright 1986
Levelled 1972

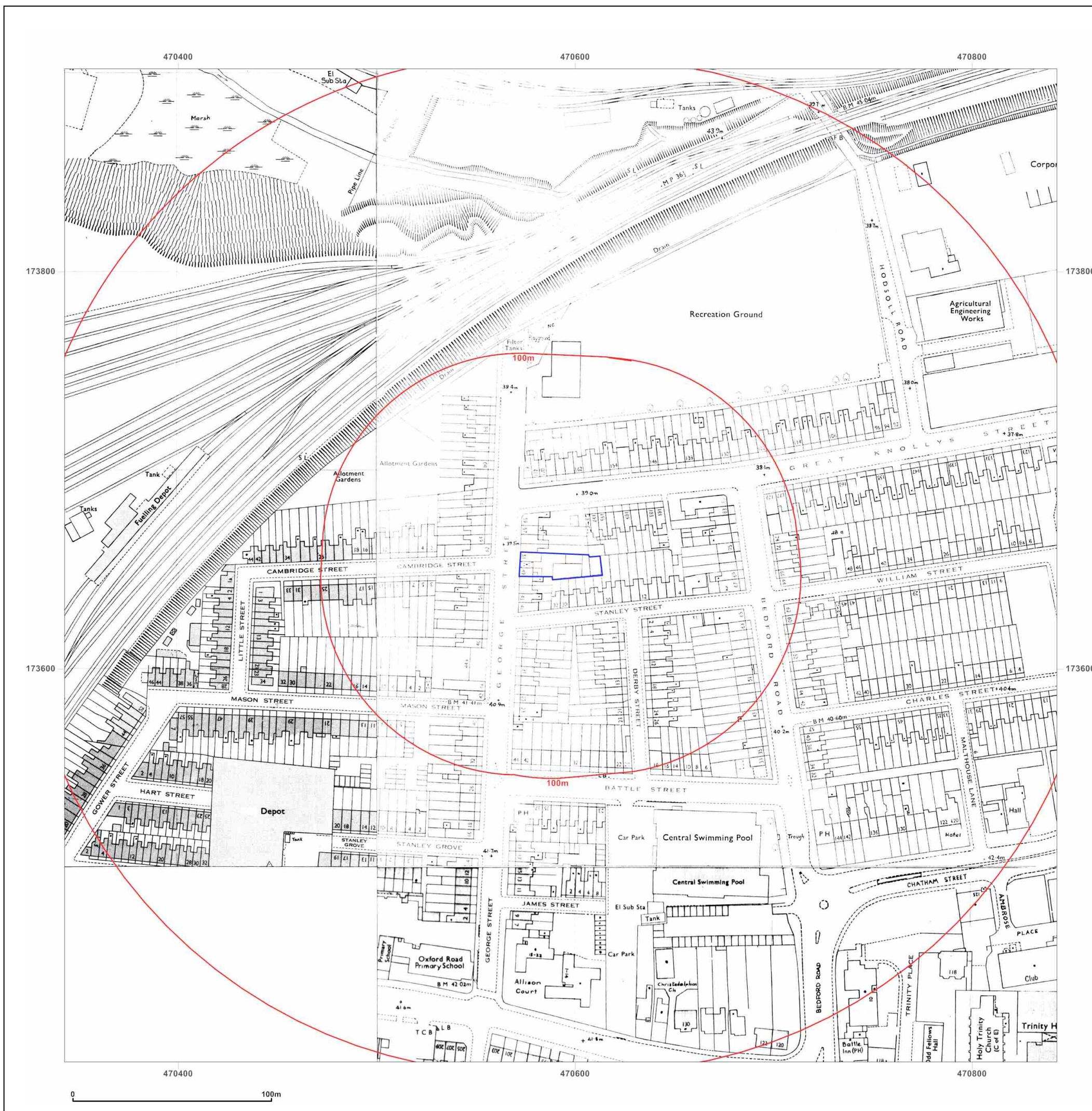


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Site Details:

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READING, RG1 7NP

Client Ref: 1CO107010_006328
Report Ref: GS-5818201
Grid Ref: 470593, 173652

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1993
Edition N/A
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Levelled 1973

Surveyed 1973
Revised 1993
Edition N/A
Copyright 1993
Levelled 1973

Surveyed 1972
Revised 1993
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Levelled 1972

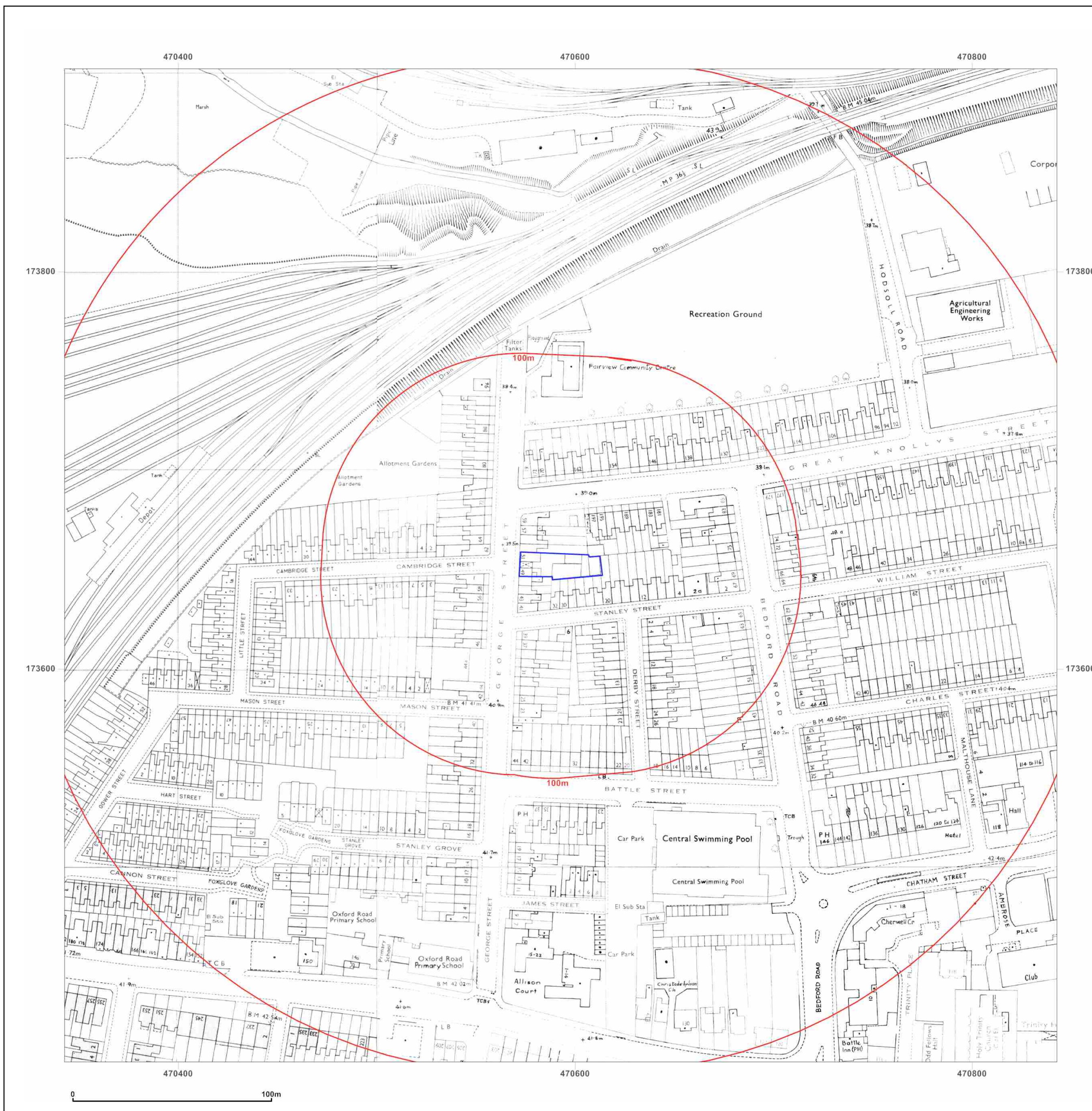


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APPENDIX III
LIMITATIONS





1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between REC Ltd and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not be made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
9. REC cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by REC is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by REC in this connection without their explicit written agreement there to by REC.
10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.





APPENDIX IV

GLOSSARY





TERMS

AST	Above Ground Storage Tank
BGS	British Geological Survey
BSI	British Standards Institute
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CIEH	Chartered Institute of Environmental Health
CIRIA	Construction Industry Research Association
CLEA	Contaminated Land Exposure Assessment
CSM	Conceptual Site Model
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)
DWS	Drinking Water Standard
EA	Environment Agency
EQS	Environmental Quality Standard
GAC	General Assessment Criteria
GL	Ground Level
GSV	Gas Screening Value
HCV	Health Criteria Value
ICSM	Initial Conceptual Site Model
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)
ND	Not Detected
LMRL	Lower Method Reporting Limit
NR	Not Recorded
PAH	Poly Aromatic Hydrocarbon
PCB	Poly-Chlorinated Biphenyl
PID	Photo Ionisation Detector
QA	Quality Assurance
SGV	Soil Guideline Value
SPH	Separate Phase Hydrocarbon
Sp.TPH (CWG)	Total Petroleum Hydrocarbon (Criteria Working Group)
SPT	Standard Penetration Test
SVOC	Semi Volatile Organic Compound
UST	Underground Storage Tank
VCCs	Vibro Concrete Columns
VOC	Volatile Organic Compound
WTE	Water Table Elevation





APPENDIX V
PHOTOGRAPHS





PLATE 1 – ENTRANCE INTO THE SERVICE YARD





PLATE 2 – WITHIN THE SINGLE STOREY BUILDING WITH DAMAGE TO THE CELING



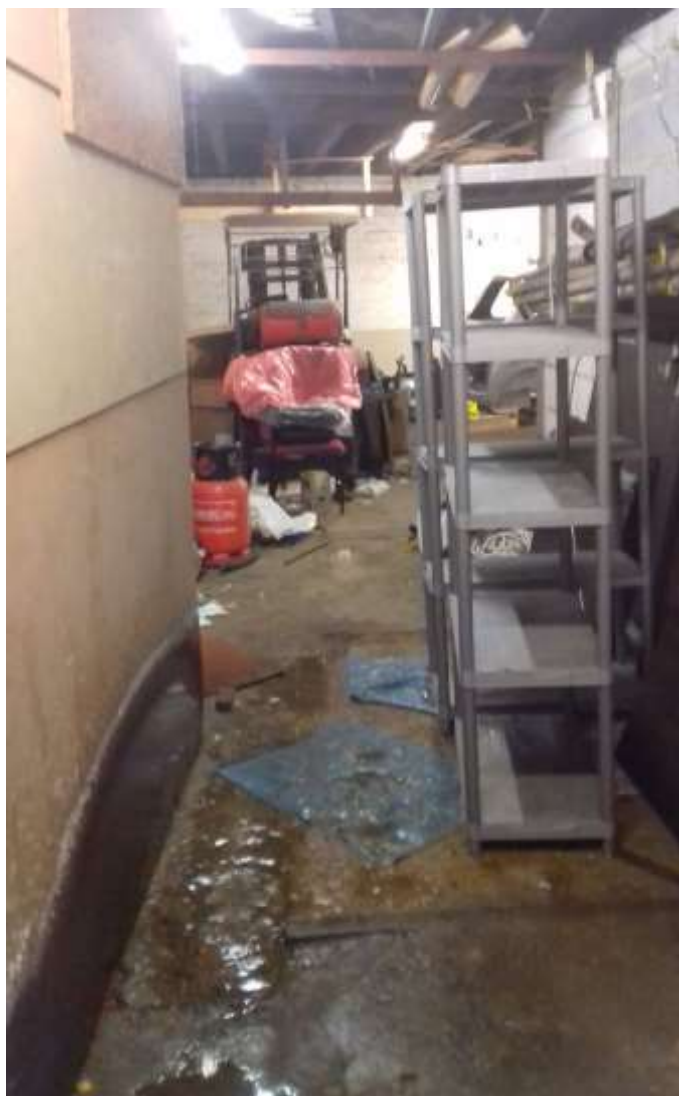


PLATE 3 – VIEW OF INSIDE THE SINGLE STOREY BUILDING



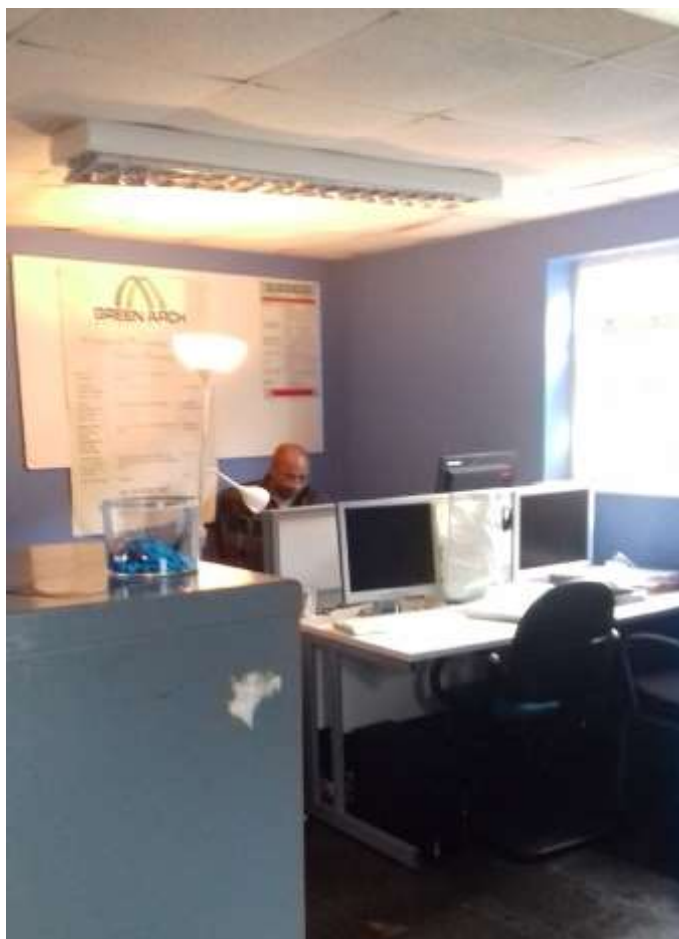


PLATE 4 – COMMERCIAL UNIT





PLATE 5 – RESIDENTIAL PROPERTY

