



# CONTAMINATED LAND RISK ASSESSMENT

## Phase 1 Desk Study Report

### Site Address

109 Church Road,  
Upper Norwood,  
London,  
SE19 2PR

### Client

Stapleton Long

### Report Reference

PH1-2022-000076

### Prepared by

STM Environmental Consultants Ltd

### Date

30/08/2022



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## 2 DOCUMENT CONTROL



### CONTAMINATED LAND RISK ASSESSMENT Phase 1 Desk Study Report



<b>Site Address:</b>	109 Church Road, Upper Norwood, London, SE19 2PR
<b>Site Coordinates:</b>	533525, 170377
<b>Prepared for:</b>	Stapleton Long
<b>Report Reference:</b>	PH1-2022-000076
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### 3 DISCLAIMER

This report and any information or advice which it contains, is provided by STM Environmental Consultants Ltd (STM) and can only be used and relied upon by Stapleton Long (Client).

STM has exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant when undertaking works of this nature. However, STM gives no warranty, representation or assurance as to the accuracy or completeness of any information, assessments or evaluations presented within this report. Furthermore, STM accepts no liability whatsoever for any loss or damage arising from the interpretation or use of the information contained within this report. Any party other than the Client using or placing reliance upon any information contained in this report, do so at their own risk.



It is noted that some of the findings presented in this report are based on information obtained from third parties (i.e. Environmental Search Report). Whilst we assume that all information is representative of the site and of present conditions, we can offer no guarantee as to its validity regarding the short term or long-term history of the Site.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

It should be noted that this report has been produced for environmental purposes only. It should not in any way be construed to be or used to replace a geotechnical survey, structural survey, asbestos survey, buried services survey, unexploded ordnance survey or Invasive Plant Survey.



## 4 EXECUTIVE SUMMARY

SECTION	SUMMARY
<b>Site Location And Size</b>	The site is located at 109 Church Road, Upper Norwood, London, SE19 2PR and is centred at national grid reference 533525, 170377. The site has an area of approximately 0.2 ha.
<b>Current Site Use</b>	The site is currently a vacant three storey building fronting Church Road and an ancillary outbuilding to the rear of the site. The main current uses in the immediate surrounding area include commercial and residential properties.
<b>Proposed Development</b>	The development proposal is for the ' <i>Demolition of rear ancillary outbuilding, erection of two storey building at rear to form 3-bedroom dwelling house fronting Lansdowne Place, provision of associated amenity space, and refuse storage and cycle storage</i> '. It is understood that there are proposals to include soft landscaping in the development.
<b>Site History</b>	Examination of Ordnance Survey historic maps revealed that the site was undeveloped land until c.1868, when 2no. unspecified buildings were developed. 1no. building was demolished in c.1894-98, and by c.1951-52 the site was redeveloped with multiple buildings labelled '109'. By c. 2003, 3no. of the buildings were demolished, resulting in the site matching the present-day layout. The surrounding area has been predominately commercial, with some industrial uses within the vicinity of the site.
<b>Geology</b>	According to the BGS Geindex, the site is located on bedrock of Claygate Member comprising Sand, Silt and Clay. The superficial deposits are Superficial Deposits comprising Sand and Gravel.
<b>Topography</b>	The site is at an elevation of approximately 116mAOD (above Ordnance Datum).
<b>Hydrogeology</b>	The site is underlain by Secondary A Bedrock and Superficial Aquifers.
<b>Hydrology</b>	There are no surface water bodies located on or within 250m of the site.
<b>Ecology</b>	There are no ecological receptors located on or within 250m of the site.
<b>Contamination Assessment</b>	<p>On site potentially contaminative land uses (PCLUs) have included an Unspecified Garage/Workshop (current ancillary building) while off site PCLUs include Works (15m E, 20m S), Dry Cleaners (21m NE), Garages (30m W, 40m S) and 2no. Infilled Ponds (110m W and 210m W). A potential onsite source of contamination was also identified in the form of Made Ground.</p> <p>A conceptual site risk model was developed and a qualitative risk assessment carried out. Potentially significant potential pollutant linkages were identified in respect of:</p> <ul style="list-style-type: none"> <li> Human Health Receptors (i.e. Future Occupiers/Users, Neighbours and Construction Workers) via ingestion, dermal absorption and inhalation (indoors and outdoors);</li> <li> Human Health Receptors (i.e. Explosion/ Fire risk due to build-up of Methane/ VOCs in confined spaces);</li> </ul>

	<ul style="list-style-type: none"> <li>■ Property Receptors – i.e. Buildings &amp; Services.</li> <li>■ Property Receptors (i.e. Damage to buildings and services\Explosion\Fire) due to the presence of aggressive chemicals in the soil and/or buildup of ground gases and vapours in confined spaces.</li> </ul>
<p><b>Recommendations</b></p>	<p>Given that potentially significant potential pollutant linkages were identified, it is recommended that an intrusive site investigation is undertaken with the objective of determining the presence and extent of any soil contamination at the site.</p>
<p>This table is intended as a summary of the desk study findings and should be read in conjunction with the main report.</p>	



## 5 INTRODUCTION

STM Environmental Consultants Ltd (STM) were commissioned by Stapleton Long (Client) to undertake a Phase 1 Contaminated Land Risk Assessment (CLRA) at a site located at 109 Church Road, Upper Norwood, London, SE19 2PR.

The study is required to support the discharge of Condition 13 attached to planning permission 19/00156/FUL (Refer to [Appendix 1](#) for the Decision Notice).

### 5.1 Development Proposal

The development proposal is for the 'Demolition of rear ancillary outbuilding, erection of two storey building at rear to form 3-bedroom dwelling house fronting Lansdowne Place, provision of associated amenity space, and refuse storage and cycle storage'. It is understood that there are proposals to include soft landscaping in the development.

The proposed development plans are contained in [Appendix 2](#).

## 6 CONTEXT AND OBJECTIVES FOR THE RISK ASSESSMENT

### 6.1 Legislative Context

#### 6.1.1 Part IIA

Part IIA of the Environmental Protection Act 1990, which came into force in England in April 2000 and in Wales in July 2001, introduced a new statutory regime for the identification and remediation of contaminated land in the United Kingdom.

The legislation considers risks from contaminated land to human beings, controlled waters (surface and ground water), protected ecological systems and property. Under the legislation "contaminated land" is defined as:

"Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that: -

(a) Significant harm is being caused or there is significant possibility of such harm being caused: or

(b) Pollution of controlled waters is being caused, or is likely to be, caused."

In order for land to be considered contaminated, there must be a contaminant, a receptor and a pathway (via which the contaminant can reach the receptor) present at the site. When these three components are identified at a site, a *pollutant linkage* is said to exist.

**Pollutant Linkage = Contaminant → Pathway → Receptor**

In order for a local authority to determine that a site is contaminated land, it must be satisfied that the pollutant linkage is a *significant pollutant linkage* and that the land in question is causing, or that there is a significant possibility that it will cause significant harm (SPOSH) to humans, habitats, buildings or livestock and crops if remedial work is not carried out.

### 6.1.2 National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the government's policy on dealing with land contamination through the planning process. It states that planning policies and decisions should ensure that:

- a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);
- after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
- adequate site investigation information, prepared by a competent person, is presented.

### 6.1.3 Environmental Damage Regulations

The Environmental Damage (Protections and Remediation) Regulations 2015 transpose the provisions of the EU Environmental Liability Directive into law in England and Wales.

The Regulations require action in response to the most significant cases of environmental damage. They cover specific types of:

- damage to species and habitats;
- damage to water; or
- risks to human health from contamination of land.

The Regulations apply to both imminent threats and actual cases of damage. Where these arise, those responsible must take immediate action to prevent damage occurring or remediate damage where it does occur.

The Regulations are based on the polluter pays principle 'requiring those responsible to meet the cost of preventive and remedial measures.

## 6.2 Objectives

This Desk Study has been written so as to provide an initial overview of the nature and extent of contamination hazards that may exist at the site. It has been undertaken in accordance with the specifications outlined in the British Standard BS 10175:2011+A2:2017 Code of Practice for the Investigation of potentially contaminated sites and the Environment Agency Document, LCRM: Stage 1 Risk Assessment.

The main objectives of the study were to:

- Enable a conceptual site risk model to be constructed;
- Provide sufficient information for a preliminary qualitative risk assessment to be undertaken;
- Inform the need for and scope of any intrusive investigations that may be required.

## 6.3 Summary of Research Undertaken

Details of information sources researched in order to compile this desk study are given below.

- Environment Agency Open Data (GIS)
- English Nature Open Data (GIS)
- English Heritage Open Data (GIS)
- British Geological Survey GeoIndex Web Map Service
- Coal Authority Open Data and Web Map Service.
- Historical Ordnance Survey Maps
- Local Authority Planning Application Portal
- Groundsure Enviro Insight Report & Historical Maps
- Bomb Sight Web Map Service for UXO

## 7 SITE DESCRIPTION

### 7.1 Site Location and Size

The site is located at 109 Church Road, Upper Norwood, London, SE19 2PR and is centred at national grid reference 533525, 170377. The site has an area of approximately 0.2 ha.

The site lies within the jurisdiction of Croydon London Borough Council in terms of the planning process. See Figure 1 below for the Site Location and Aerial Map.

### 7.2 Current Site Use

The site is currently a vacant three storey building fronting Church Road and an ancillary outbuilding to the rear of the site.

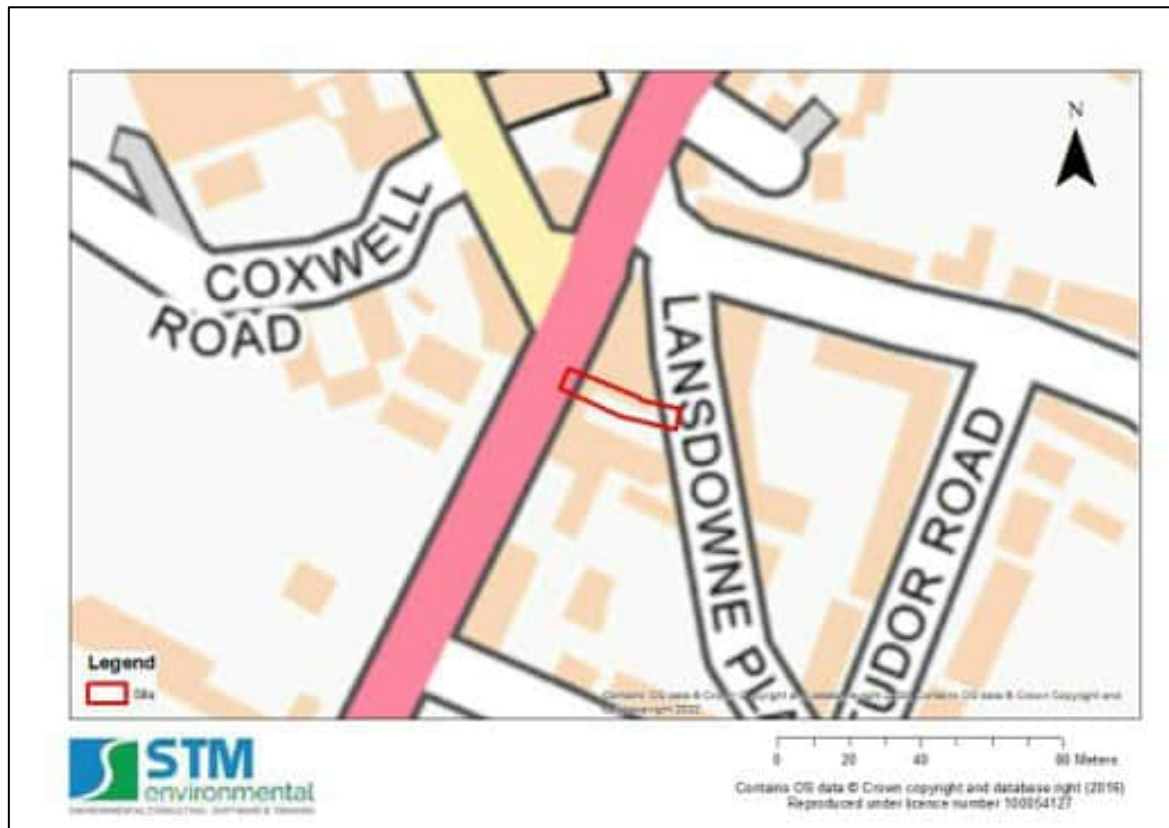
### 7.3 Surrounding Land Uses

A description of current land uses surrounding the boundaries of the site is given below in Table 1.

Table 1: Summary of surrounding land uses

Boundary	Land Use Description
Northern	Commercial/ Residential
Eastern	Adjacent Road (Lansdowne place), Residential
Southern	Commercial/ Residential
Western	Adjacent Road (Church Rd/A212)/ Commercial/ Residential

Figure 1: Site Location and Aerial Map



## 8 SITE HISTORY

### 8.1 Analysis of Historical Ordnance Survey Mapping

Historical maps published by the Ordnance Survey dating back to the late 1800's were reviewed in order to ascertain any previous industrial use at the site. The Groundsure Historical Maps are presented in [Appendix 3](#). A summary of the historic map analysis is provided in Table 2.

Table 2: Summary of historical land use identified from historical maps

Map Year & Scale	POTENTIALLY CONTAMINATIVE LAND USES	
	On Site	Off Site
<b>1861</b> <b>1:2,500</b>	Site is undeveloped land.	The surrounding area comprises residential properties in all directions.  2no. Ponds 110m W and 200m W.
<b>1863-64</b> <b>1:2,500</b> <b>1:10,560</b>	Blank maps.	Blank maps.
<b>1868</b> <b>1:2,500</b>	Erection of 2no. unspecified buildings; 1no. large building along the western part of the site and 1no. smaller building along the eastern boundary.	Partial mapping; no significant changes.
<b>1870</b> <b>1:10,560</b>	No significant changes.	No significant changes.
<b>1894-98</b> <b>1:1,056</b> <b>1:2,500</b> <b>1:10,560</b>	1no. unspecified building along the eastern boundary demolished.	1no. Pond 110m W infilled and redeveloped as the College for the Blind. 1no. Pond 200m W no longer present, potentially infilled.  3no. Orchards 120m W, 120m NE, and 210m NE. Nursery 140m NE.
<b>1912</b> <b>1:2,500</b>	Partial mapping; blank site.	Partial mapping; Orchards 120m NE no longer present. Unspecified Ground Workings 80m NE.
<b>1913</b> <b>1:2,500</b>	No significant changes.	Orchards 120m W no longer present.  Smithy 250m N.
<b>1915</b> <b>1:10,560</b>	No significant changes.	No significant changes.



Table 2: Summary of historical land use identified from historical maps

Map Year & Scale	POTENTIALLY CONTAMINATIVE LAND USES	
	On Site	Off Site
<b>1916</b> <b>1:2,500</b>	Blank map.	Blank map.
<b>1919</b> <b>1:10,560</b>	No significant changes.	No significant changes.
<b>1920</b> <b>1:10,560</b>	No significant changes.	No significant changes.
<b>1930</b> <b>1:10,560</b>	No significant changes.	Nursery 140m NE no longer labelled. Orchards 210m NW no longer present.
<b>1932-33</b> <b>1:2,500</b> <b>1:10,560</b>	No significant changes.	Smithy 250m N no longer labelled.
<b>1938</b> <b>1:10,560</b>	No significant changes.	No significant changes.
<b>1940</b> <b>1:2,500</b>	No significant changes.	Partial mapping; Laundry 170m N.
<b>1948</b> <b>1:10,560</b>	Blank map.	Blank map.
<b>1951-53</b> <b>1:1,250</b> <b>1:2,500</b>	Site redeveloped and now comprises multiple buildings labelled '109'.	Unspecified Ground Workings 80m NE no longer present.  Printing Works 15m E. 2no. Engineering Works 20m S and 50m W. 6no. Garages 30m W, 40m S, 130m NE, 155m NE, 170m NE, 180m N and 185m N. 2no. Workshops 80m NW and 100m NW. Electricity Substation 120m N. Tank 160m N. Joinery Works 180m NW.
<b>1955-58</b> <b>1:10,560</b>	No significant changes.	No significant changes.

Table 2: Summary of historical land use identified from historical maps

Map Year & Scale	POTENTIALLY CONTAMINATIVE LAND USES	
	On Site	Off Site
<b>1962-69</b> <b>1:1,250</b> <b>1:10,560</b>	No significant changes.	Workshop 10m NW no longer labelled. Printing Works 15m E relabelled 'Works'. 2no. Engineering Works 20m S and 50m W relabelled Works. 6no. Garages 30m W, 40m S, 130m NE, 155m NE, 180m N and 185m N no longer labelled. Workshop 80m NW relabelled Works.  Engineering Works 160m N. Garage 210m SW.
<b>1973-79</b> <b>1:1,250</b> <b>1:10,000</b>	No significant changes.	Partial mapping; Engineering Works 50m W rebelled Printing Works.  Tanks 55m E. Electricity Substation 140m E.
<b>1981-93</b> <b>1:1,250</b> <b>1:10,000</b>	No significant changes.	Works 15m E no longer labelled. Printing Works 50m W no longer labelled. Engineering Works 160m N relabelled Works. Laundry 170m N and an associated Tank 160m redeveloped to residential dwellings. Joinery Works 180m NW relabelled Works.  6no. Works 110m N, 130m N, 160m N, 170m NW, 190m N and 210m N. Electricity Substation 200m NW.
<b>2001</b> <b>1:10,000</b>	No significant changes.	No significant changes.
<b>2003</b> <b>1:1,250</b>	3no. unspecified buildings demolished; site resembles present day layout.	No significant changes.
<b>2010</b> <b>1:10,000</b>	No significant changes.	No significant changes.
<b>2022</b> <b>1:10,000</b>	No significant changes.	No significant changes.



Table 2: Summary of historical land use identified from historical maps

Map Year & Scale	POTENTIALLY CONTAMINATIVE LAND USES	
	On Site	Off Site
<b>Current Use</b>	The site is currently a vacant three storey building fronting Church Road and an ancillary outbuilding to the rear of the site.	The main current uses in the immediate surrounding area include commercial and residential properties.

## 9 ENVIRONMENTAL CHARACTERISTICS

A variety of Environmental datasets provided by the Environment Agency, British Geological Society, English Heritage and English Nature and others were screened in order to assess the environmental sensitivity of the site. The Groundsure Environmental Screen Report is presented in [Appendix 4](#). The results are summarised below.

### 9.1 Geology

#### 9.1.1 Published Geology

According to the BGS Geindex, the site is located on bedrock of Claygate Member comprising Sand, Silt and Clay. The superficial deposits are Superficial Deposits comprising Sand and Gravel.

#### 9.1.2 Unpublished Geology

BGS borehole records for the immediate surrounding area were reviewed in order to obtain further information on the ground conditions beneath the site. No relevant information was identified.

### 9.2 Hydrogeology

The Environment Agency classifies the superficial and bedrock deposits as Secondary A Aquifers. There are no groundwater Source Protection Zones on or within 250m of the site.

### 9.3 Water Abstractions

No Groundwater, Surface Water or Potable Water Abstraction Licenses were identified on or within 2000m of the site.

### 9.4 Groundwater Level

According to BGS, the groundwater is likely to be more than 5.0 metres below the ground surface throughout the year.

### 9.5 Hydrology

No surface water bodies were identified on or within 250m of the site.

## 9.6 Flood Risk

### 9.6.1 River and Tidal (Fluvial and Tidal) Flooding

The risk of fluvial and tidal flooding is considered to be low. The site is located within Flood Zone 1, which is defined as land having less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

### 9.6.2 Surface Water (Pluvial) Flooding

The Environment Agency (EA) long term flooding maps indicate that the site is at Low risk of surface water flooding. Low risk means that each year this area has a chance of flooding of between 0.1% and 1%.

### 9.6.3 Groundwater Flooding

The BGS groundwater flood maps indicate that the risk of groundwater flooding at the site is Moderate.

## 9.7 Environmentally Sensitive Sites and Ecological Protection Zones

No Environmentally Sensitive Sites (e.g. Green Belt Land, Ancient Woodlands) or Ecological Protection Zones (e.g. Special Scientific Interest (SSSI), Ramsar Sites, Special Areas of Conservation (SAC)) were identified on or within 250m of the proposed development.

## 9.8 Conservation Areas, Designated Protected Buildings and Monuments

The following Conservation Areas and Listed Buildings were identified within 250m of the site:

Table 3: Conservation Areas and Listed Buildings identified within 250m of the site

Name of Site	Type	Grade	List Date / Date of Designation	Distance & Direction
Upper Norwood Triangle	Conservation Area	N/A	04/1989	Onsite
Rosebank, Crystal Palace and Upper Norwood, Croydon, London, SE19	Listed Building	II	15/08/1995	28m SW

## 9.9 Topography

According to [Google Earth](#), the general site level is at 116 mAOD.

## 9.10 Waste Disposal Activities & Landfill Sites

No evidence of Waste Disposal Activities or Landfill Sites were identified on or within 250m of the site.

## 9.11 Petrol and Fuel Sites

No Petrol or Fuel Sites were identified on or within 500m of the site.

## 9.12 Sites Determined as Contaminated Land under Part 2A EPA 1990

No Sites Determined as Contaminated Land were identified on or within 500m of the site.

### 9.13 Dangerous or Hazardous Sites

No Control of Major Accident Hazards (COMAH) or Notification of Installations Handling Hazardous Substances (NIHHS) Sites were identified on or within 500m of the site.

### 9.14 Hazardous Substance Storage/Usage

No consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015 were identified on or within 500m of the site.

### 9.15 IPC Authorisations

No Integrated Pollution Control (IPC) Authorisations were identified on or within 500m of the site.

### 9.16 Part A(1) and IPPC Authorised Activities

No Part A(1) or Integrated Pollution Prevention Control (IPPC) Authorised Activities were identified on or within 500m of the site.

### 9.17 Part A(2) and Part B Activities and Enforcements

The following Part A(2) and Part B Activities and Enforcements were identified within 250m of the site:

Table 4: Part A(2) and Part B Activities and Enforcements identified within 250m of the site

Site Address	Process	Permit Type	Status	Distance/Direction
Palace Cleaners, 101 Church Road, Upper Norwood, London, SE19 2PR	Dry Cleaning	Part B	Current Permit	21m NE

### 9.18 Category 3 or 4 Radioactive Substance Authorisations

No Category 3 or 4 Radioactive Substance Authorisations were identified on or within 500m of the site.

### 9.19 Discharge Consents

No Red List Discharge Consents were identified on or within 500m of the site. No Licensed Discharge Consents were identified on or within 500m of the site.

### 9.20 List 1 and List 2 Dangerous Substance Inventory Sites

No List 1 and List 2 Dangerous Substances Inventory Sites were identified on or within 500m of the site.

### 9.21 Pollution Incidents

No Pollution Incidents occurred on or within 50m of the site.

### 9.22 Coal Mining

The site is not located in an area potentially affected by Coal Mining.

### 9.23 Non-Coal Mining

No Non-Coal Mining Areas were identified on or within 50m of the site.

### 9.24 Radon

A search of the BGS Radon dataset indicates that the property lies in an area with less than 1% chance of being affected by naturally occurring Radon gas. Therefore, it is unlikely to be affected by Radon.

### 9.25 Asbestos within Buildings

The information available indicates that the building on the site were developed prior to 2010. It is therefore considered possible that Asbestos may exist within them and that an Asbestos survey may be required in line with The Control of Asbestos Regulations 2012. This is outside the scope of this assessment. An Asbestos survey is recommended.

### 9.26 Unexploded Ordnance

Although a detailed Unexploded Ordnance (UXO) risk assessment in line with CIRIA C681 is beyond the scope of this report, the Bomb Sight website ([www.bombsight.org](http://www.bombsight.org)) was checked to see if the site may have been affected.

The site itself has not been directly impacted by unexploded ordnances; however, a few bombs fell within the vicinity of the site. The closest being approximately 57m NW of the site, fell on Paxton Mews, London Borough of Croydon, SE19 3AF, London between 7<sup>th</sup> October 1940 and 6<sup>th</sup> June 1941. Please refer to [Appendix 5](#) for a site map which shows the UXO locations.

## 10 RELEVANT PLANNING HISTORY

London Borough of Croydon Council and London Borough of Bromley Council's online planning portals were searched in an effort to identify any relevant planning applications.

### 10.1 Planning Applications for the Site

Table 5 below provides a summary of the previously submitted planning applications identified for the site.

Table 5: Summary of planning applications at the site

Application Reference	Date	Description of Proposal	Status
17/00895/FUL	01 Jun 2017	Alterations and erection of a rear extension at basement, ground and first floor levels and conversion to form an additional two-bedroom flat	Granted – Without Contaminated Land Condition
10/01924/P	26 Jul 2010	Erection of dormer extension in rear roof slope	Granted – Without Contaminated Land Condition
89/02280/P	30 May 1990	Continued use for car valeting and retention of car port	Unknown*

\*Decision Notice was not available on the online planning portal at the time of writing and no relevant reports were identified in the search.

## 10.2 Planning Applications for Adjacent Sites

Table 6 below provides a summary of the previously submitted planning applications identified for nearby sites. Although other planning applications were identified on nearby sites; they were not deemed relevant to this report.

Table 6: Summary of planning applications for adjacent sites

Application Reference	Date	Description of Proposal	Status
<b>18/03076/FUL</b>	19 Sep 2018	Alterations; use of rear of ground floor as 1 x 3-bedroom flat and provision of associated decked area at rear, provision of associated off-street parking, and provision of associated refuse storage and cycle storage - <b>Winsdale House 30-34 Westow Street Upper Norwood London SE19 3AH</b>	Granted – Without Contaminated Land Condition
<b>18/02164/FUL</b>	04 Jul 2018	Erection of 3.5 storey building comprising of Church Hall with ancillary facilities at ground floor. Formation of 3 x two bed flats and 2 x one bed flats on first, second and third floors.   <b>69 Westow Street Upper Norwood London SE19 3RW (67m N)</b>	Partial Discharge of Contaminated Land Condition**
<b>16/04388/DISC</b>	25 Nov 2016	Discharge of conditions 1,3,6,7 & 9 attached to planning permission 13/04416/P for the Demolition of existing building; erection of 3 storey building comprising Church Hall with ancillary facilities at ground floor and 4 one-bedroom flats on first and second floors.   <b>69 Westow Street Upper Norwood London SE19 3RW (67m N)</b>	Partial Discharge of Contaminated Land Condition**
<b>15/03199/RES</b>	23 Jul 2015	Discharge of condition 6 attached to planning permission 10/04041/P for the Partial demolition of existing buildings; erection of two/three-storey extension with accommodation in the roofspace comprising offices within Class A2 on part ground floor level and 4 one bedroom and 4 two-bedroom flats in the remainder of the building; provision of associated covered cycle areas and refuse/recycling storage areas.   <b>115 Church Road, London SE19 2PR (13m S)</b>	Condition Discharged **
<b>16/04312/NMA</b>	01 Nov 2016	Demolition of existing building; erection of 3 storey building comprising Church Hall with ancillary facilities at ground floor and 4 one-bedroom flats on first and second floors (amendment to planning permission 13/04416/P) - <b>69 Westow Street Upper Norwood London SE19 3RW (67m N)</b>	Approved**
<b>14/02066/RES</b>	08 Aug 2014	Discharge of conditions 1,7 & 8 attached to planning permission 09/03609/P for the Demolition of existing buildings; erection of four storey building with basement comprising	Partial Discharge of Contaminated Land

Application Reference	Date	Description of Proposal	Status
		2 units within class A1 (retail) on the ground and and 6 two bedroom and 1 one-bedroom flats in remainder of building; provision of parking spaces at rear   <b>76-78 Westow Street, Upper Norwood, London SE19 3AF (33m NW)</b>	Condition**
<b>14/01721/RES</b>	03 Jul 2014	Discharge of conditions 3, 4, 5 & 6 attached to planning permission 13/04387/P for the Erection of two/three-storey building at rear comprising 1 one bedroom and 2 two-bedroom flats   <b>115 Church Road, London, SE19 2PR (13m S)</b>	Partial Discharge of Contaminated Land Condition**
<b>14/00706/DT</b>	22 Apr 2014	Demolition of existing buildings; erection of four storey building with basement comprising 2 units within class A1 (retail) on the ground and and 6 two bedroom and 1 one-bedroom flats in remainder of building; provision of parking spaces at rear (amendment to planning permission 09/03609/p)   <b>76-78 Westow Street, Upper Norwood, London SE19 3AF (33m NW)</b>	Granted – With Contaminated Land Condition**
<b>10/04041/P</b>	04 Aug 2011	Partial demolition of existing buildings; erection of two/three-storey extension with accommodation in the roofspace comprising offices within Class A2 on part ground floor level and 4 one bedroom and 4 two-bedroom flats in the remainder of the building; provision of associated covered cycle areas and refuse/recycling storage areas.   <b>115 Church Road, London, SE19 2PR (13m S)</b>	Granted – With Contaminated Land Condition**
<b>92/01378/P</b>	28 Aug 1992	Erection of three detached houses with attached garages; formation of vehicular access from braybrooke gardens   <b>Land R/O 187 Church Road SE19 (183m S)</b>	Granted – Condition Unknown*

\*Decision Notice was not available on the online planning portal at the time of writing and no relevant reports were identified in the search.

\*\*Contaminated Land Reports identified in the search are summarised in the sections below.

## 11 REVIEW OF PREVIOUSLY SUBMITTED RELEVANT REPORTS

### 11.1 69 Westow Street Upper Norwood London SE19 3RW

A Geoenvironmental Report (ref: R16- 11455; June 2016) undertaken by Ashdown Site Investigation Ltd was identified for the site located at 69 Westow Street Upper Norwood London SE19 3RW, situated 67m N of the site in question. The report was submitted in support of the application 16/04388/DISC.



The report examined Ordnance Survey historic maps which showed that the site comprised a plot of land with complete building cover from c.1861 to c.2002, when the building cover remained present on the southern part of the site only.

The report identified a potential source of onsite contamination as Made Ground. No significant offsite sources of contamination were identified by Ashdown.

The ground investigation by Ashdown was carried out on the 26<sup>th</sup> May 2016. The works comprised 5no. dynamic sampler boreholes (WS1-WS5) to depths of between 3-15mbgl and 2no. trial pits (TP1 and TP2) to depths of 1.10mbgl. It is understood that 19no. samples were sent for chemical analysis (63448-63467); which included Heavy Metals, PAHs, TPHs and Asbestos. The contamination results were assessed using generic assessment criteria (GAC) relating to commercial soil screening values.

During logging, olfactory evidence of contamination was identified in the form of a strong odour of Hydrocarbons in 2no. boreholes (WS2 and WS3). Low concentrations of TPHs were identified in WS2 and WS3 at the depths where odours were recorded, however, these were lower than the commercial Site Specific Values. Slightly elevated PAHs were identified in 1no. borehole (WS5). Although the former exceeded the GAC used, potential pollutant linkages were discounted due to the fact that the proposed development consisted entirely of hardstanding. None of the samples recorded the presence of any Asbestos fibres.

Gas and groundwater monitoring standpipes were installed in 2no. of the boreholes to a depth of 3mbgl by Ashdown. Groundwater was recorded at depths of 4.30mbgl on completion of borehole WS1. The standpipes were monitored on 2no. occasions: the 8<sup>th</sup> June 2016 and the 23<sup>rd</sup> June 2016. Peak concentrations of Carbon Dioxide of up to 3.6% were recorded. No detectable gas flow and no Methane were recorded. The site was classified as Characteristic Situation 1 based on the results.

The report recommended the implementation of a vapour resistant membrane within the buildings to protect against the Hydrocarbons.

The reports were deemed satisfactory by the Council and the partial discharge of the Contaminated Land condition was approved. To completely discharge the condition, a suitable Remediation Validation report that detailed the implementation of the vapour resistant membrane was required to be submitted. No further reports were identified in the search relating to the above planning application..

## **11.2 76-78 Westow Street, Upper Norwood, London SE19 3AF**

A Remediation Validation Certificate (ref: GWPR874; March 2014) by Ground & Water Limited was identified for the site located at 76-78 Westow Street, Upper Norwood, London SE19 3AF, situated 33m N of the site in question. The report was submitted in support of the planning application 14/02066/RES.

The Certificate states that a Desk Study (ref: GWPR464/DS; June 2012) and a Limited Ground Investigation (ref: GWPR464/GIR; June 2012) both by Ground and Water (G&W) had been completed for the above site. However, these reports could not be identified using the online planning portal and were not summarised in the Remediation Validation Certificate.

Multiple site visits by G&W Engineers took place between the 5<sup>th</sup> March 2013 and 14<sup>th</sup> March 2014. It was confirmed that the garden areas were built up to a minimum of 415mm of



Topsoil. 2no. samples of the imported Topsoil were submitted for chemical analysis to confirm that it was suitable for use in garden areas.

A Topsoil Analysis Report by Tim O'Hare Associates (ref: TOHA/11/4249/1/RB; Jan 2012) states that of the potential contaminants determined, none were found at levels that would indicate significant contamination with respect to the proposed end use of this topsoil.

The report concluded that the Topsoil represented by the samples was considered suitable for general landscape purposes, including trees, shrubs and amenity grass, provided the physical condition of the soil is maintained.

The reports were deemed satisfactory by the Council and the Contaminated Land Condition was discharged. It is clear from Google Maps Imagery and proposed plans that the proposed development has been constructed.

### **11.3 115 Church Road, London**

A Contamination Report (ref: 0542/Report; 10<sup>th</sup> Dec 2012) undertaken by Peter Baxter Associates Ltd (PBA) was identified for the site located at 115 Church Road, London, SE19 2PR, situated 13m S of the site in question. The report was submitted in support of the application 12/03629/RES.

A separate Desk Study Report entitled 'Environmental Report' (ref. 41251537\_1; September 2004) by Homecheck Professional (HP) was summarised within the body of the report, and included within the appendices of the Contamination Report. The HP report was not available on the planning portal at the time of writing.

The Environmental Report examined Ordnance Survey historic maps which identified several Tanks, Engineering Services, Fireplaces & Mantelpieces, Electrical Sub Station Facilities, Dry Cleaners, Printers, Railways, Garages, and Joinery Manufacturers within 250m of the site. No onsite potentially contaminative land uses were identified by HP. No conceptual risk model, conclusions or recommendations were included in the report.

The ground investigation by PBA was carried out on the 20<sup>th</sup> November 2012. 3no. shallow trial pits (WS1-WS3) were excavated and 3no. samples were sent for chemical analysis, which included Heavy Metals, PAHs, TPHs, PCBs and Asbestos. A generic quantitative risk assessment was carried out based on a residential without home-grown produce end use. Asbestos was not identified in any of the samples analysed.

The report concluded that levels of contamination measured indicated that there was no detected significant risk to human health. It was recommended that the site should be revisited on clearance of the concrete floor for a visual inspection of undetected contaminants. No further actions or remediation options were deemed to be necessary by PBA.

A letter regarding Topsoil was submitted alongside planning application 15/03199/RES. The letter confirmed that Topsoil was not imported onto the site after excavation and as a result, it was assumed that no tests were required to be completed.

The Council has accepted the above reports and letters and fully discharged the Contaminated Land Condition. It is clear from Google Maps Imagery and proposed plans that the proposed development has been constructed.

## 12 SITE WALKOVER

A site walkover was not undertaken as part of the initial scope of works. Photographs of the site, which have been provided by the Client are presented in [Appendix 6](#).

## 13 SITE RISK MODEL (CSM)

A conceptual site risk model (CSM) aims to summarise all the potential pollutant linkages or risk that may be associated with a site. It considers the potential pollution sources, receptors and pathways by which receptors can be impacted.

### 13.1 Potential Sources

Potentially contaminative land uses (PCLUs) of concern were identified based on their proximity to the site and whether they had the potential to generate significant quantities of ground gases, vapours and/or mobile volatile contamination (i.e. high pollution migration potential).




Any PCLUs within a 50m radius of the site as well as any PCLUs with high pollution migration potential within 250m of the site were considered to be of concern and were included within the assessment.

A summary is provided in Table 7 below.

Table 7: Summary of potential contamination sources, period of operation and distance from site.

Site Name	Industrial Profile	Approx. Year Use Established	Approx. Year Use Ended	Direction	Approx. Distance from Site (m)
<b>Potential Made Ground</b>	-	c.1894-98	Current (2022)	Onsite	0
<b>Unspecified Garage/Work shop</b>		c.1951-53	Current (2022)	Onsite	0
<b>(Printing) Works</b>	Printing and Bookbinding Works	c.1951-53	c.1981-93	E	15
<b>(Engineering) Works</b>	Engineering Works (Unspecified)	c.1951-53	Unknown	S	20
<b>Dry Cleaner</b>	Dry-Cleaners	Unknown	Current (2022)	NE	21
<b>Garages</b>	Road Vehicles: Garages and Filing Station	c.1951-53	Unknown	W S	30 40
<b>2no. Infilled Ponds</b>	Unknown Filled Ground (Pond, Marsh, River, Stream, Dock etc)	c.1894-98	Current (2022)	W	110 200

Typical contaminants associated with the above PCLUs are:

-  Acids & Alkalis
-  Asbestos
-  Chlorinated & Non-Chlorinated Solvents

- Fuels & Fuel Oils
- Heavy Metals
- Gases: Methane & Carbon Dioxide
- Organic & Inorganic Compounds
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Total Petroleum Hydrocarbons (TPHs)
- Volatile Organic Compounds (VOCs)

Please note, this list is not exhaustive of all contaminants that may be present on or off site.

## 13.2 Potential Receptors

The potential receptors include human, water, ecological and infrastructure receptors.

### 13.2.1 Potential Human Health receptors

Potential human health receptors include construction workers, future occupants or users of the site and the proposed development and neighbours of the site.

### 13.2.2 Potential Groundwater Receptors

Potential groundwater receptors include the Secondary A Superficial and Bedrock Aquifers.

### 13.2.3 Potential Surface Water Receptors

There are no potential surface water receptors in the vicinity of the site.

### 13.2.4 Potential Ecological Receptors

There are no potential ecological receptors in the vicinity of the site.

### 13.2.5 Potential Property Receptors

Potential property receptors include the proposed development as well as neighbouring properties and associated services.

## 13.3 Potential Pathways

### 13.3.1 Potential Pathways for Human Receptors

The main pathways via which on and off-site human receptors are likely to come into contact with, or be affected by any contamination present on the site can be summarised as follows:

- Dermal contact with contaminated soil (i.e. absorption through the skin) – through garden activities such as children playing, gardening etc.
- Ingestion of contaminated soil (either directly or via soil adhering to vegetables grown on the site)
- Inhalation of contaminated soil, fugitive dust and vapours.
- Explosion of landfill gases leading to death/injury

### 13.3.2 Potential Pathways for Groundwater Receptors

The principal means by which contaminants can reach the groundwater is by leaching (i.e. downward movement through the soil pores with percolating and infiltrating water).

### 13.3.3 Potential Pathways for Surface Water Receptors

Routes by which contaminants from the site could reach surface water include via overland run-off, drainage and groundwater entering nearby rivers as base flow.

### 13.3.4 Potential Pathways for Ecological Receptors

The exposure pathways for terrestrial ecological receptors will be similar to those for humans. Pathways for aquatic receptors are via uptake of contaminated sediments and water.

### 13.3.5 Potential Pathways for Property Receptors

Pathways by which property receptors are exposed to potential contaminants include ground gas and vapour migration through the unsaturated zone and absorption of water containing dissolved contaminants (i.e. as in the case of sulphate attack).

## 13.4 Potential Pollutant Linkages

The Potential Pollutant Linkages (PPLs) were identified as part of the CSM. These were concerned with the following:

- Risk of direct contact (ingestion and absorption) with and inhalation of contaminants to on-site human health receptors including future occupiers and site visitors (PPL1a)
- Risk of injury/death to future occupiers and visitors as a result of explosion due to accumulation of ground gas from on and off-site sources in confined spaces within on-site dwellings. (PPL1b)
- Risk of direct contact (ingestion and absorption) with and inhalation of contaminants to on-site human health receptors such as Construction Workers (PPL1c)
- Risk of injury/death to construction workers as a result of explosion due to accumulation of ground gas from on and off-site sources in confined spaces within on-site dwellings. (PPL1d)
- Risk of direct contact with (ingestion and absorption) and inhalation of contaminants to off-site human health receptors as a result of on-site contaminants migrating off-site (PPL2a)
- Risk of injury/death to off-site human health receptors as a result of explosion due to migration of on-site ground gas and subsequent accumulation in confined spaces in off-site buildings. (PPL2b)
- Risk of deterioration of groundwater quality resulting from the migration of on-site contaminants into the underlying aquifer (PPL3)
- Risk of deterioration of surface water quality resulting from the migration and entry of on-site contaminants into the surface water receptor (PPL4)
- Risk of deterioration of ecological quality resulting from the migration and entry of on-site contaminants to the ecological receptor during development and after completion (PPL5);
- Risk of damage to buildings and services from on and off-site contaminants (PPL6a)
- Risk of damage to property as a result of explosion due to accumulation of ground gas from on and off-site sources in confined spaces within buildings (PPL6b).

## 14 QUALITATIVE RISK ASSESSMENT

For land to be considered 'contaminated land' under Part IIA, the potential contamination source must be causing or have the significant possibility of causing harm to designated receptors. It is therefore necessary to focus on pollutant linkages that have the potential to be significant (i.e. those that are most likely to lead to a determination).

The identified PPLs were therefore individually qualitatively assessed using a basic risk assessment methodology which considers “Likelihood” and “Severity” to assess the magnitude of the potential risk. The methodology is summarised in [Appendix 6](#).

Table 8 below summarises the conceptual site risk model (CSM) including the identified PPLs and the results of the qualitative risk assessment.

Table 8: Conceptual Site Risk Model - Potential Sources, Pathways and Receptors identified on the site.

Source/ Potential Contaminants	Potential Contaminants Associated with Site as Potential Made Ground and Site Use as Unspecified Garage/Workshop and Offsite Land Uses as Works, Garages, Dry Cleaners and 2no. Infilled Ponds: i.e. Acids & Alkalis, Asbestos, Chlorinated & Non-Chlorinated Solvents, Fuels & Fuel Oils, Heavy Metals, Gases: Methane & Carbon Dioxide, Organic & Inorganic Compounds										
	On and Off-Site Contaminants				On Site Contaminants		On Site Contaminants			On and Off-Site Contaminants	
Potential Pathways	<ul style="list-style-type: none"> <li>• Ingestion of soils, garden vegetables and dust</li> <li>• Ingestion of contaminated drinking water</li> <li>• Dermal absorption</li> <li>• Inhalation of dusts and vapours indoors and outdoors</li> <li>• Migration of ground gases and vapours into properties</li> </ul>						Leaching in the unsaturated zone & diffusion in the saturated zone	<ul style="list-style-type: none"> <li>• Overland run-off</li> <li>• Drainage channels</li> <li>• Base flow</li> </ul>	<ul style="list-style-type: none"> <li>• Direct contact via absorption and ingestion;</li> <li>• Inhalation</li> </ul>	<ul style="list-style-type: none"> <li>• Migration of ground gases and vapours through the unsaturated zone</li> <li>• Attack on water supply service pipes</li> </ul>	
Potential Receptors	<b>ON SITE HUMANS (AFTER COMPLETION)</b> Future Occupiers & Visitors		<b>ON SITE HUMANS (DURING DEVELOPMENT)</b> Construction Workers		OFF SITE HUMANS Neighbours		<b>GROUND WATER</b> Secondary A	<b>SURFACE WATER</b> None	<b>ECOLOGICAL</b> None	<b>ON SITE PROPERTY</b> Buildings and Services	
Potential Hazards	<ul style="list-style-type: none"> <li>• Adverse health effects</li> <li>• Injury/</li> <li>• Death</li> </ul>	Explosion/ Fire - Build-up of Methane/ VOCs in confined spaces	<ul style="list-style-type: none"> <li>• Adverse health effects</li> <li>• Injury/</li> <li>• Death</li> </ul>	Explosion/ Fire - Build-up of Methane/ VOCs in confined spaces	<ul style="list-style-type: none"> <li>• Adverse health effects</li> <li>• Injury/</li> <li>• Death</li> </ul>	Explosion/ Methane build-up in confined spaces	Deterioration of groundwater quality	<ul style="list-style-type: none"> <li>• Deterioration of surface water quality</li> <li>• Ecological impacts</li> </ul>	Deterioration of ecological receptor quality	Damage to property and services	Explosion/ Fire - Build-up of Methane/ VOCs in confined spaces
Plausible?	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes
PPL ID	PPL1a	PPL1b	PPL1c	PPL1d	PPL2a	PPL2b	PPL3	PPL4	PPL5	PPL6a	PPL6b
SEVERITY	Major (4)	Major (4)	Major (4)	Major (4)	Major (4)	Major (4)	Moderate (3)	Moderate (3)	Moderate (3)	Moderate (3)	Major (4)
LIKELIHOOD	Possible (3)	Remote (2)	Remote (2)	Remote (2)	Remote (2)	Remote (2)	Improbable (1)	Improbable (1)	Improbable (1)	Possible (3)	Remote (2)
UPDATED RISK	Moderate (12)	Low to Moderate (8)	Low to Moderate (8)	Low to Moderate (8)	Low to Moderate (8)	Low to Moderate (8)	Very Low (3)	Very Low (3)	Very Low (3)	Low to Moderate (9)	Low to Moderate (8)
POTENTIALLY SIGNIFICANT?	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES

## 14.1 Assessment of Potential Significance of Potential Pollutant Linkages

### 14.1.1 Potential Risks to On-Site Human Health Receptors

PPL1a and PPL1c are concerned with the risk of direct contact (ingestion and dermal absorption) with and inhalation of on and off-site contaminants by on site human health receptors. PPL1a and PPL1c are considered to have the potential to be significant as potentially contaminative land uses, listed above in Table 8, and Potential Made Ground were identified on and within 200m of the site.

As the proposal is to introduce residential dwellings with soft landscaping, it is possible that human health receptors (i.e. groundworkers and future occupiers of the dwellings) could be exposed to any potential contamination via direct contact during groundworks and after completion. However, it is considered that any potential risks can be reduced so long as Construction Workers implement standard health and safety measures as described in [Sections 15.2](#).

PPL1b and PPL1d are concerned with the risk of injury/death of future occupiers, construction workers and site visitors as a result of explosion due to the potential accumulation of ground gases and vapours from on and off-site sources. PPL1b and PPL1d are considered to have the potential to be significant as potential sources of explosive ground gases and/or vapours (i.e. Unspecified Garage/ Workshop, Dry Cleaners, 2no. Infilled Ponds etc.) were identified on and within the vicinity of the site.

### 14.1.2 Potential Risks to Off-Site Human Health Receptors

PPL2a is concerned with the risk of direct contact and inhalation of contaminants emanating from the site by off-site human health receptors. PPL2a is considered to have the potential to be significant as potentially contaminative land uses (i.e. Unspecified Garage/Workshop) and Potential Made Ground were identified on the site. If mobile contaminants (i.e. VOCs, petroleum hydrocarbons) are present in the sub-surface they could impact upon the residential properties that are located adjacent to the site.

PPL2b is concerned with the risk of injury/death of off-site human health receptors as a result of explosion due to accumulation of ground gases from on-site sources. PPL2b is considered to have the potential to be significant as potential sources of explosive ground gases and/or vapours (i.e. Unspecified Garage/ Workshop) was identified on the site.

### 14.1.3 Potential Risks to Groundwater Receptors

PPL3 is concerned with the risk of deterioration of groundwater quality resulting from the migration of on-site contaminants into the underlying aquifer. PPL3 is considered unlikely to have the potential to be significant. Although the site is underlain by a Secondary A Bedrock and Superficial Aquifer, it is considered unlikely that any potential contaminants present at the site would be of sufficient magnitude and mobility as to significantly impact groundwater receptors. Additionally, no abstractions and/or Source Protection Zones were identified on or within 250m of the site.

### 14.1.4 Potential Risks to Surface Water Receptors

PPL4 is concerned with the risk of deterioration of surface water quality resulting from the migration and entry of on-site contaminants into surface water receptors. PPL4 is considered unlikely to have the potential to be significant as no surface water bodies were identified on or within 250m of the site.



#### 14.1.5 Potential Risks to Ecological Receptors

PPL5 is concerned with the risk of deterioration of ecological receptors resulting from potential on-site contaminants. PPL5 is considered unlikely to have the potential to be significant as no designated ecological receptors were identified on or within 250m of the site.

#### 14.1.6 Potential Risks to Property Receptors

PPL6a is concerned with the risk of damage to on site buildings and services from on and off-site contaminants. If contaminated, the soil may contain aggressive chemicals (i.e. Sulphates, VOCs) that can attack building materials and services. PPL6a is considered to have the potential to be significant as the previously mentioned potentially contaminative land uses were identified on and within 250m of the site.

PPL6b is concerned with the risk of damage to property as a result of explosion due to migration of on and off-site ground gases and vapours and their subsequent accumulation in confined spaces in on-site buildings. PPL6b is considered to have the potential to be significant for the same reasons as PPL1b and PPL1d.

## 15 CONCLUSIONS

This Phase 1 Desk Study was carried out to support a planning application seeking to demolish the rear ancillary outbuilding, and erect a two storey building at rear to form 3-bedroom dwelling house fronting Lansdowne Place, and the provision of associated amenity space, and refuse storage and cycle storage.

A review of historical maps and planning records suggests that the site and surrounding land have been subject to previous potentially contaminative land uses (PCLUs). On site PCLUs have included Unspecified Garage/Workshop while off site PCLUs include Works (15m E, 20m S), Dry Cleaners (21m NE), Garages (30m W, 40m S) and 2no. Infilled Ponds (110m W and 210m W). A potential onsite source of contamination was also identified in the form of Made Ground.

A conceptual site risk model was developed and a qualitative risk assessment undertaken. The conclusions of the risk assessment are presented in Table 9 below.

Table 9: Summary of qualitative risk assessment

Potential Receptor	Potential Pathway	Potential Hazard	PSPPL?	Risk
<b>On-Site Human Health</b> (Future Occupiers)	Ingestion/Absorption Inhalation	Adverse health Injury/Death	Yes	Moderate
	Buildup of Methane/ VOCs in confined spaces	Explosion/ Fire Injury/Death	Yes	Low to Moderate
<b>On-Site Human Health</b> (Construction Workers)	Ingestion/Absorption Inhalation	Adverse health Injury/Death	Yes	Low to Moderate
	Buildup of Methane/ VOCs in confined spaces	Explosion/ Fire Injury/Death	Yes	Low to Moderate
<b>Off-Site Human Health</b>	Ingestion/Absorption Inhalation	Adverse health Injury/Death	Yes	Low to Moderate
	Buildup of Methane/ VOCs in confined spaces	Explosion/ Fire Injury/Death	Yes	Low to Moderate

Potential Receptor	Potential Pathway	Potential Hazard	PSPPL?	Risk
Groundwater	Percolation/Leaching	Adverse groundwater quality	No	Very Low
Surface Water	Lateral Migration Groundwater baseflow	Adverse Surface water quality	No	Very Low
Ecology	Ingestion/Absorption	Adverse health Injury/Death	No	Very Low
Property	Physical Contact/Absorption	Damage to building and services	Yes	Low to Moderate
	Buildup of Methane/VOCs in confined spaces	Explosion/ Fire Damage to building	Yes	Low to Moderate

## 16 RECOMMENDATIONS

### 16.1 Intrusive Site Investigation

Given that potentially significant potential pollutant linkages (PSPPLs) were identified, it is recommended that an intrusive site investigation is undertaken with the objective of determining the presence and extent of any soil contamination at the site.

### 16.2 Watching Brief and Discovery Strategy

Therefore, it is recommended that a “watching brief” is kept at all times during the development. Should any unexpected contamination be encountered then the discovery strategy outlined below should be followed.

- Works should be halted if any suspicious ground conditions are identified by groundworkers;
- The Contractor should assess the need for any immediate health and safety or environmental management control measures. If control measures are considered to be required, they should be implemented;
- The Contractor should notify the Client’s Environmental Consultant and the Local Planning Authority;
- The Environmental Consultant should attend the site to record the extent of ‘contamination’ and if necessary, to collect samples;
- If remedial action is considered necessary then the proposed works should be agreed with the Local Planning Authority prior to implementation;
- Once remediation is complete, the Environmental Consultant should collate evidence of work carried out for inclusion in a Remediation Verification Report which should be submitted to the Local Planning Authority.

### 16.3 Health and Safety

All site works should be carried out in accordance with Health and Safety Executive regulations and guidelines, the Contractor’s Construction Health and Safety Plan and the Construction (Design and Management) Regulations 2015.

Precautions should be taken to minimise exposure of site workers during ground works through the implementation of site safety. Such precautions should include, but not be limited to:

- Provision of appropriate Personal Protective Equipment (PPE);
- Availability of site welfare;
- Good personal hygiene, washing and changing procedures;
- Daily safety briefings.

## 16.4 Services

The local Statutory Water Undertaker should be contacted in the event that new services are proposed as part of the redevelopment in order to determine their specification for the type of pipework which should be used on this site.

Further information can be found within the published guidance for the '*Selection of Water Supply Pipes to be used in Brownfield Sites*', issued in January 2011 by the UK Water Industry Research.

## 17 INFORMATION GAPS AND UNCERTAINTIES

Assumptions have been made regarding the nature and scale of the activities that took place on the site and the types of potential contaminants that may have resulted. These assumptions will need to be reviewed along with the Conceptual Site Model should further information come to light.

## 18 APPENDIX 1 – DECISION NOTICE

Development Management  
Place Department  
6th Floor, Bernard Weatherill House  
8 Mint Walk  
Croydon CR0 1EA

Mr Nana Boateng  
Stapleton Long  
501 Norwood Road  
Bromley  
London  
SE27 9DJ

Please ask for/reply to: Dean Gibson  
Tel/Typetalk: 0208 726 6000 Ext 62600  
Minicom: 020 8760 5797  
Email: development.management@croydon.gov.uk

Your ref: 109 Church road - new built  
Our ref: P/PC/North Area Team/DCDG

Date: 21st March 2019

**Town and Country Planning Act 1990. Town and Country Planning  
(Development Management Procedure) (England) Order 2015**

**Application Number:** 19/00156/FUL

**Applicant:** Watson Knight's Hill Developments  
Ltd

**Grant of planning permission**

The Council of the London Borough of Croydon, as the Local Planning Authority, hereby grant planning permission for the following development, in accordance with the terms of the above mentioned application (which shall include the drawings and other documents submitted therewith) :-

Demolition of rear ancillary outbuilding, Erection of two storey building at rear to form 3 bedroom dwelling house fronting Lansdowne Place, provision of associated amenity space, and refuse storage and cycle storage

at:

109 Church Road, Upper Norwood, London, SE19 2PR,

Subject to the following condition(s) and reason(s) for condition(s):-

- 1 Unless otherwise agreed in writing by the local planning authority the development shall be carried out entirely in accordance with the approved drawings:- Location Plan; M18583/20 Rev B; M18584/21 Rev B ; and other approved documents submitted with the application.  
Reason: To ensure an acceptable standard of development in accordance with Policies SP2.8, DM10, DM18, DM29 and DM30 of the Croydon Local Plan 2018.
- 2 The development shall be begun within three years of the date of the permission.

Reason: To comply with the provisions of the Town and Country Planning Act 1990 as amended by the Planning and Compulsory Purchase Act 2004.

- 3 Details of the external facing materials, including samples, shall be submitted to the local planning authority for its written approval prior to the commencement of the development. Unless otherwise agreed in writing the materials shall be implemented and retained thereafter as specified and approved.

Reason: To ensure that the appearance of the development is satisfactory having regard to the character and appearance of the locality in accordance with Policies DM10.1 and DM18.3 of the Croydon Local Plan.

- 4 The windows and doors of the building shall be implemented as timber framed, as specified in the approved drawings and documents submitted with the application, and shall be retained as such thereafter for so long as the development remains in existence.

Reason : To ensure an acceptable standard of development in accordance with Policies SP4, DM10 and DM18 of the Croydon Local Plan 2018.

- 5 The following matters shall be submitted to the local planning authority prior for its written approval prior to the first occupation of the new dwellings on site :-

- a) Cycle storage enclosure (appearance)
- b) Refuse storage enclosure (appearance)
- c) External security lighting (siting and manufacturer specification)
- d) Finished floor levels
- e) Position and appearance of rainwater goods (guttering/drainpipes)

Once implemented the above items shall be retained as specified for so long as the development is in existence.

Reason: To ensure an acceptable standard of development in accordance with Policies DM10.6, DM13, DM29 and DM30 of the Croydon Local Plan 2018.

- 6 The new build new residential development floor space shall achieve a reduction in carbon dioxide emissions of 19% beyond the 2013 Building Regulations.

Reason: To ensure the efficient use of energy and construction in accordance with Policy SP6.3 of the Croydon Local Plan 2018.

- 7 The new build residential development shall endeavour to achieve a water use target of 110 litres per head per day.

Reason: To ensure the efficient water consumption in accordance with Policy SP6.3 of the Croydon Local Plan 2018.

- 8 Prior to the first occupation of the new dwelling details of the landscaping, shall be to the local planning authority for its written approval. The scheme shall detail permeable hard landscaping materials and all boundary treatment within and around the development. The scheme shall make specific provision to promote biodiversity. Once approved all planting, seeding or turfing comprised in the specified details of landscaping shall be carried out in the first planting and seeding seasons following the

occupation of the buildings or on the completion of the development, whichever is the sooner; and any plants which within a period of 5 years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species.

Reason : To ensure that an acceptable standard of development is provided and retained in accordance with Policies DM10, DM27 and DM28 of the Croydon Local Plan 2018.

- 9 The ground floor of the development shall be laid out to meet Building Regulation requirement M4(2) accessibility and adaptability standards.  
Reason: To ensure an acceptable standard of development in accordance with Policy 3.8 of the London Plan 2016 (as consolidated with alterations since 2011).
- 10 Details of a Sustainable Urban Drainage Systems (SUDs), having regard to Defra's non-statutory technical standards for sustainable drainage systems (or any subsequent version), shall be submitted to the Local Planning Authority for its written approval prior to the commencement of the development. Once approved the SUDs scheme shall be implemented as specified and retained as such for so long as the development remains in existence.  
Reason : To ensure that an acceptable standard of development is provided and retained in accordance with Policy DM25 of the Croydon Local Plan 2018.
- 11 No windows or other openings shall be inserted at first floor level or above to the southern flank and northern flank elevations of the building.  
Reason: To protect the privacy of adjacent residential occupiers in accordance with Policy DM10.6 of the Croydon Local Plan 2018.
- 12 Notwithstanding anything contained in Schedule 2 to the Town and Country Planning (General Permitted Development) Order 1995, or any amendment or replacement therefore, no enlargement of the dwelling (including the erection or enlargement of a garage or any other building or enclosure within the curtilage of the dwelling) shall be carried out without the express permission of the Local Planning Authority.  
Reason: To protect the amenities of adjacent and future residential occupiers in accordance with Policies SP2.8 and DM10.6 of the Croydon Local Plan 2018.
- 13 Before the development is begun (not including demolition works) a report of historical uses of the site shall be carried out to the approval of the Local Planning Authority, to provide an assessment into the possibility of soil contamination. If the report indicates the possibility of soil contamination an intrusive site investigation and assessment into the possibility of soil, water and gaseous contamination must be carried out to the approval of the Local Planning Authority. The investigation report shall include a risk assessment and details of remediation if required.

Remedial works which are shown to be required must be approved by the Local Planning Authority before any such works are carried out and completed prior to the occupation of any building. A validation report detailing evidence of all remedial work carried out must be submitted to and approved in writing by the Local Planning



Authority at the conclusion of the work and before any occupation of the properties.

The developer shall notify the Local Planning Authority of any on site contamination not initially identified by the site investigation so that an officer of the Council may attend the site and agree any appropriate remedial action.

Reason: To ensure the safe development of potentially contaminated land in accordance with Policy DM25 of the Croydon Local Plan 2018.

In reaching this decision the Local Planning Authority has sought to work in a positive and pro-active manner based on seeking solutions to problems in the following way:

To assist applicants the Local Planning Authority has produced policies and written guidance, all of which is available on the Council's website and which offers a pre planning application advice service. The scheme was submitted in accordance with guidance following pre application discussions.

Informative(s):

1 IMPORTANT

Community Infrastructure Levy.

A. You are advised that under the Community Infrastructure Levy Regulations 2010 on commencement of the development a financial payment will be required to Croydon Council and the Mayor of London. In relation to retrospective applications where the development has already taken place, the financial payment is due immediately on the grant of planning permission. The payment to the Mayor of London will be forwarded by Croydon Council.

B. A separate Liability Notice will be issued to any person who has assumed liability for the payment. If no person or body has already assumed liability then within 14 days of this permission the names and addresses of the person(s) responsible for the CIL payment should be forwarded to the Council using the agreed forms which can be obtained from the planning portal from the link below.

[www.planningportal.gov.uk/planning/applications/howtoapply/whattosubmit/cil](http://www.planningportal.gov.uk/planning/applications/howtoapply/whattosubmit/cil)

C. If no person or body has assumed liability, payment will be required from the owner of the land at the time of commencement of works. It should be noted that for the purpose of the above regulations commencement of the development will comprise any works of demolition necessary to implement the planning permission.

D. For further information please visit the Croydon Council's website at:  
[www.croydon.gov.uk/cil](http://www.croydon.gov.uk/cil)

2 In order to give Publicity to this planning application the Council displayed a total of 2 site notices in the locality of the application site. The notices are displayed as follows:

o/s 109 Church Road

Lansdowne Place (rear of 109 Church Road)

Please make arrangements for these notices to be removed.

### **Demolition guidance**

If the proposal involves the demolition of buildings or part demolition of buildings of more than 50 M3, an application for demolition will be required under Section 80 of the Building Act 1984, notifications prior to commencement of the demolition

### **Serving a notice of intended demolition**

It is the owner's responsibility to ensure that demolition is carried out in a safe manner and that the requisite application is submitted to the council. You can complete the Councils application form for Demolition under section 80 using this link [here](#). or email [hsg-privatehousing@croydon.gov.uk](mailto:hsg-privatehousing@croydon.gov.uk)

Yours faithfully,



**Pete Smith**

Head of Development Management

Drawing No's:

Notes: This is a planning permission only. It does not convey any approval or consent which may be required under the Building Regulations or any other enactment.

### **Appeals to the Secretary of State - Notes for applicants**

#### **Applicants for Planning Permission.**

(A) If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

(B) If you want to appeal against your local planning authority's decision, then you must do so within six months of the date of this notice, using a form which you can obtain from the Planning Inspectorate.

The Planning Inspectorate has introduced an online appeals service that you can use to make your appeal online. You can find the service through the Appeals area of the Planning Portal - see [www.planningportal.gov.uk/pes](http://www.planningportal.gov.uk/pes). The Inspectorate will publish details of the appeal on the internet (on the Appeals area of the Planning Portal). This may include a copy of the original planning application form and relevant supporting documents supplied to the local authority by you or your agent,

together with the completed appeal form and information you submit to the Planning Inspectorate. Please ensure that you only supply information, including personal information belonging to you, that you are happy will be made available in this way. If you supply personal information belonging to someone else, please ensure that you have their permission. More detailed information about data protection and privacy matters is available in the Planning Portal.

Forms are also available from the Planning Inspectorate at Room 315A(E), Hawk Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN or online at [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate).

(C) The Secretary of State can allow a longer period for giving notice of an appeal, but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

(D) The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

(E) In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based their decision on a direction given by the Secretary of State.

### **Purchase Notices.**

(A) If either the local planning authority or the Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that the owner can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of a reasonably beneficial use by carrying out any development which has been or would be permitted.

(B) In these circumstances, the owner may serve a purchase notice on the London Borough Council in whose area the land is situated. This notice will require the Council to purchase the owner's interest in the land in accordance with the provisions of Chapter I of Part 6 of the Town and Country Planning Act 1990.

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## 19 APPENDIX 2 – PROPOSED DEVELOPMENT PLANS



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The representation of features as lines is no evidence of a property boundary.



Scale 1:1250

Supplied By: Service Point Croydon

Serial number: 001080388

Plot Centre Coordinates: 533512, 170386



## 20 APPENDIX 3 – HISTORICAL MAPS



**Site Details:**

109, CHURCH ROAD, UPPER  
NORWOOD, LONDON, SE19  
2PR

**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1861

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
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2PR

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**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

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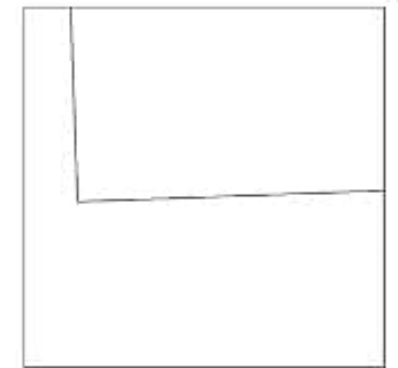
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Surveyed 1863  
Revised 1863  
Edition N/A  
Copyright N/A  
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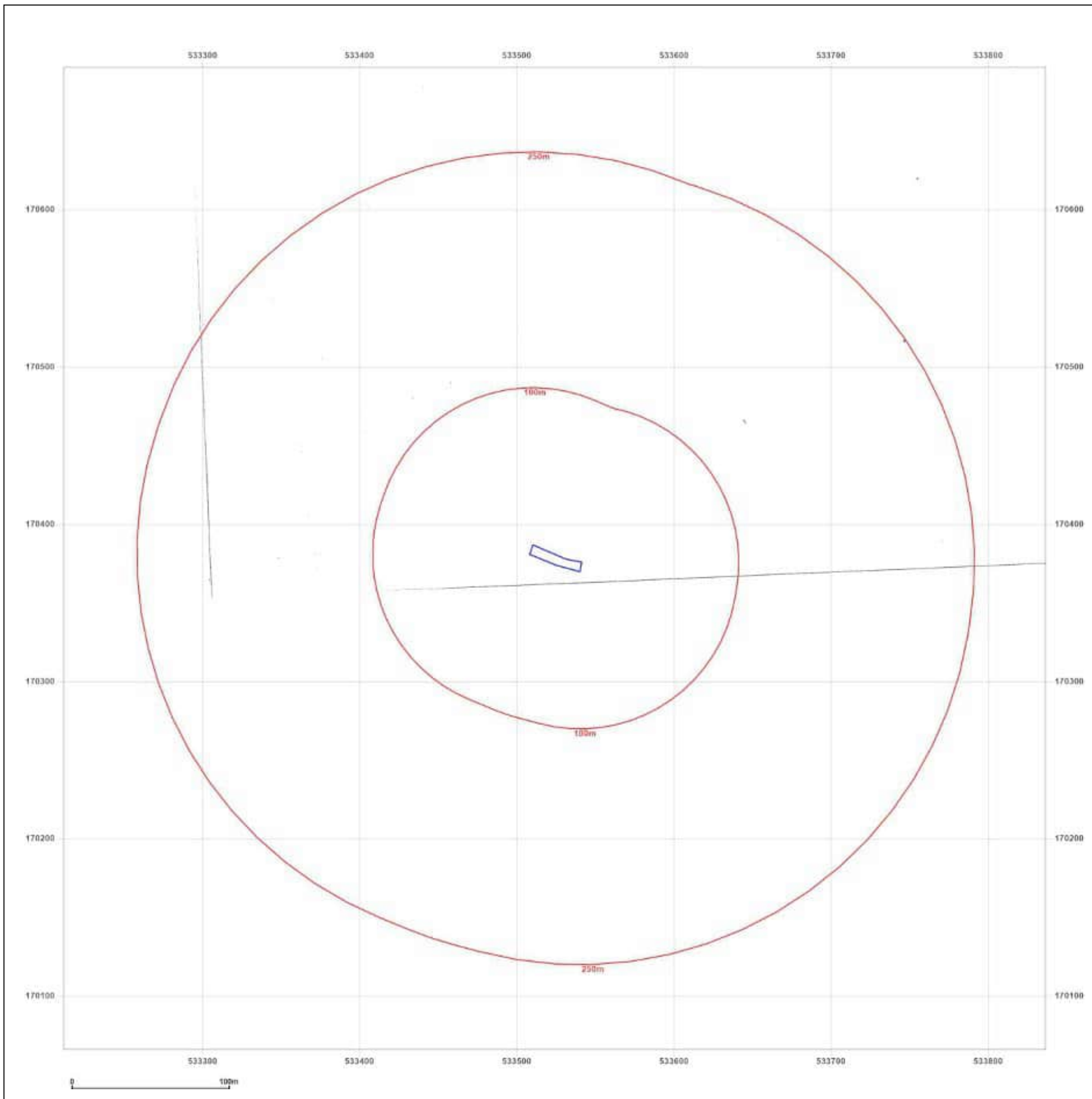


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2PR

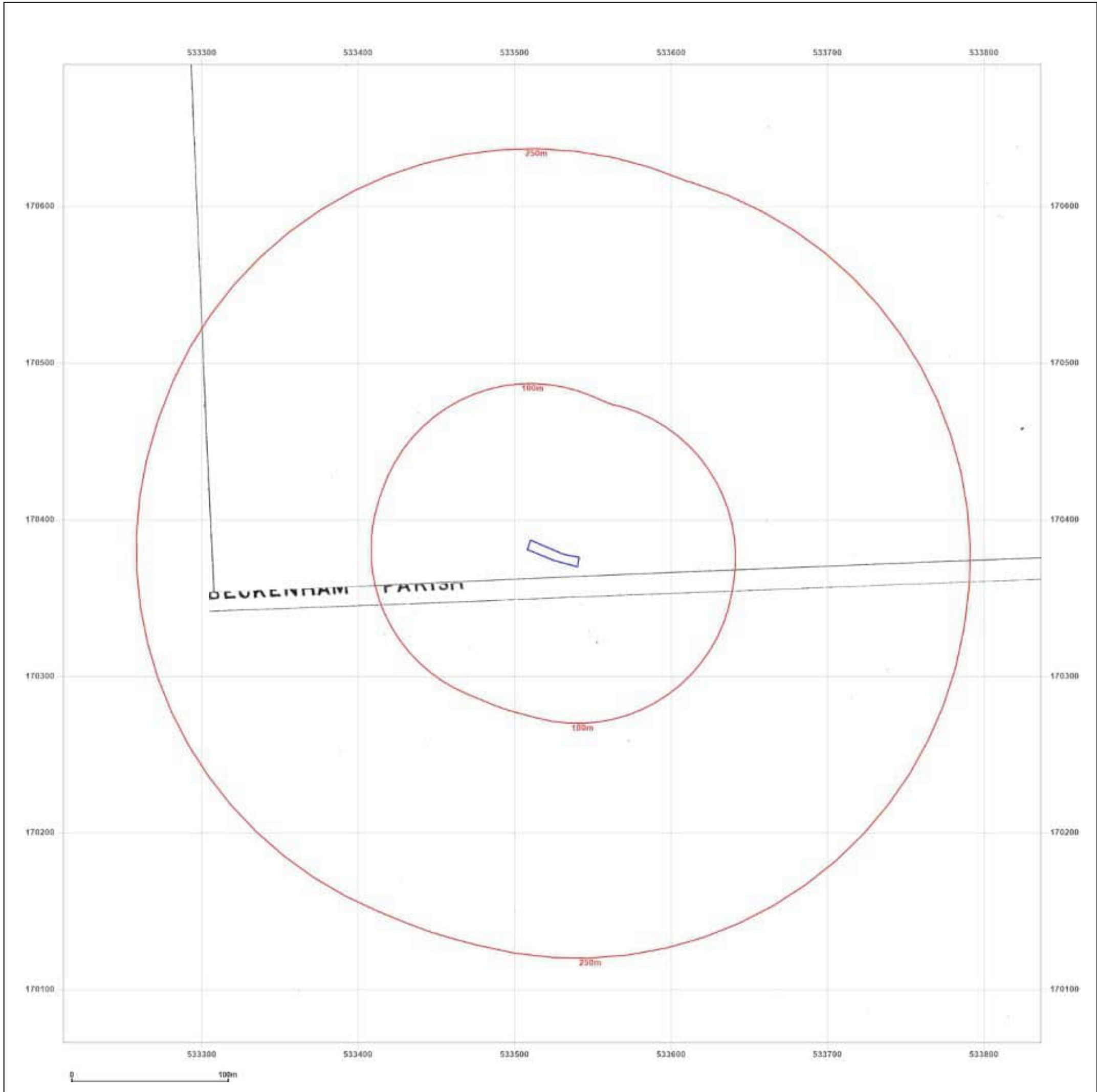
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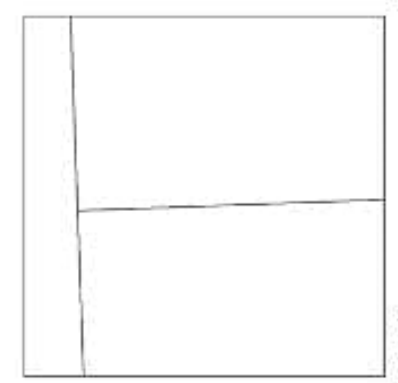
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**Map Name:** County Series

**Map date:** 1868

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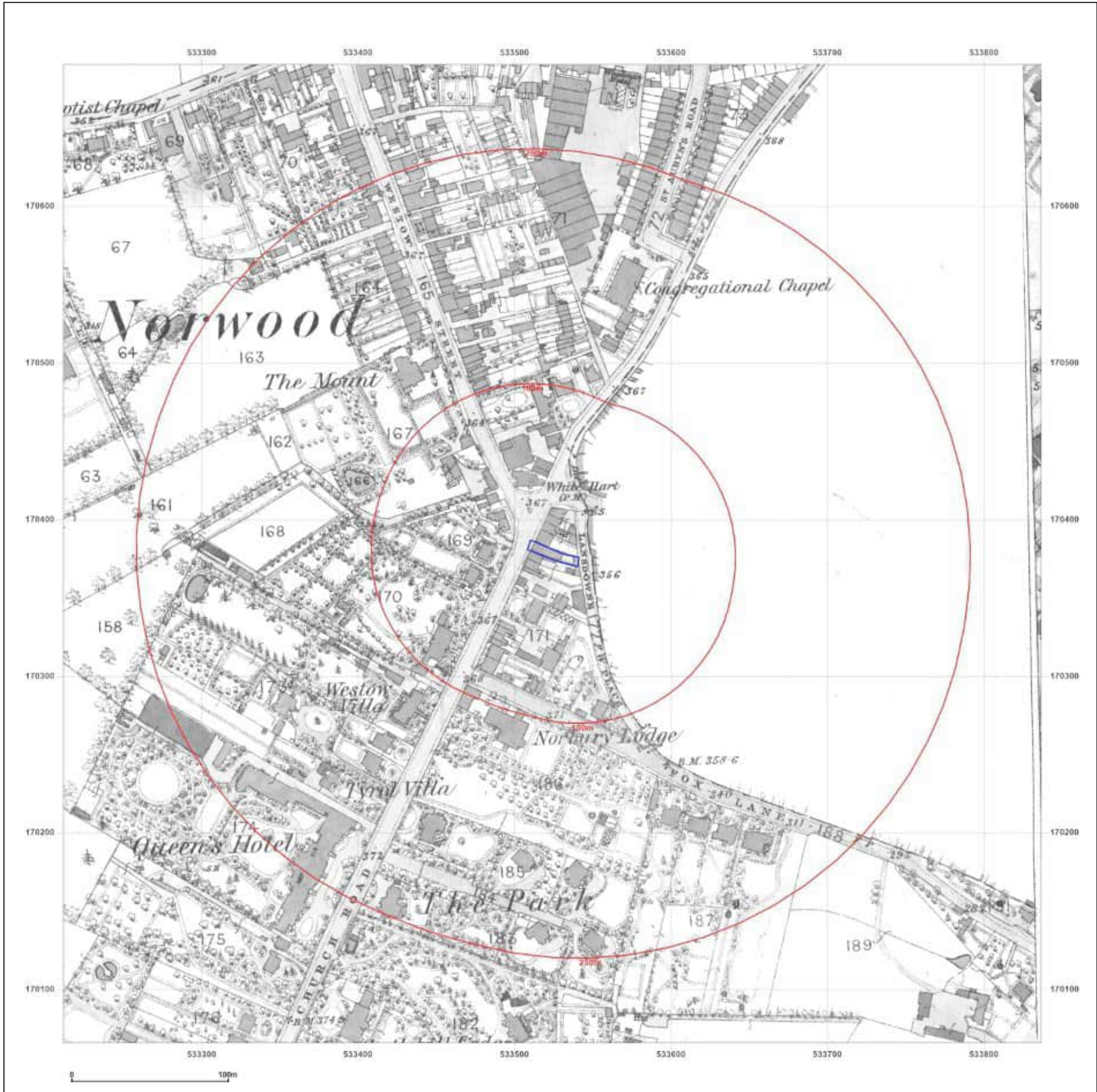


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** 1056 Scale Town Plan

**Map date:** 1896

**Scale:** 1:1,056

**Printed at:** 1:1,056



Surveyed 1895  
Revised N/A  
Edition 1896  
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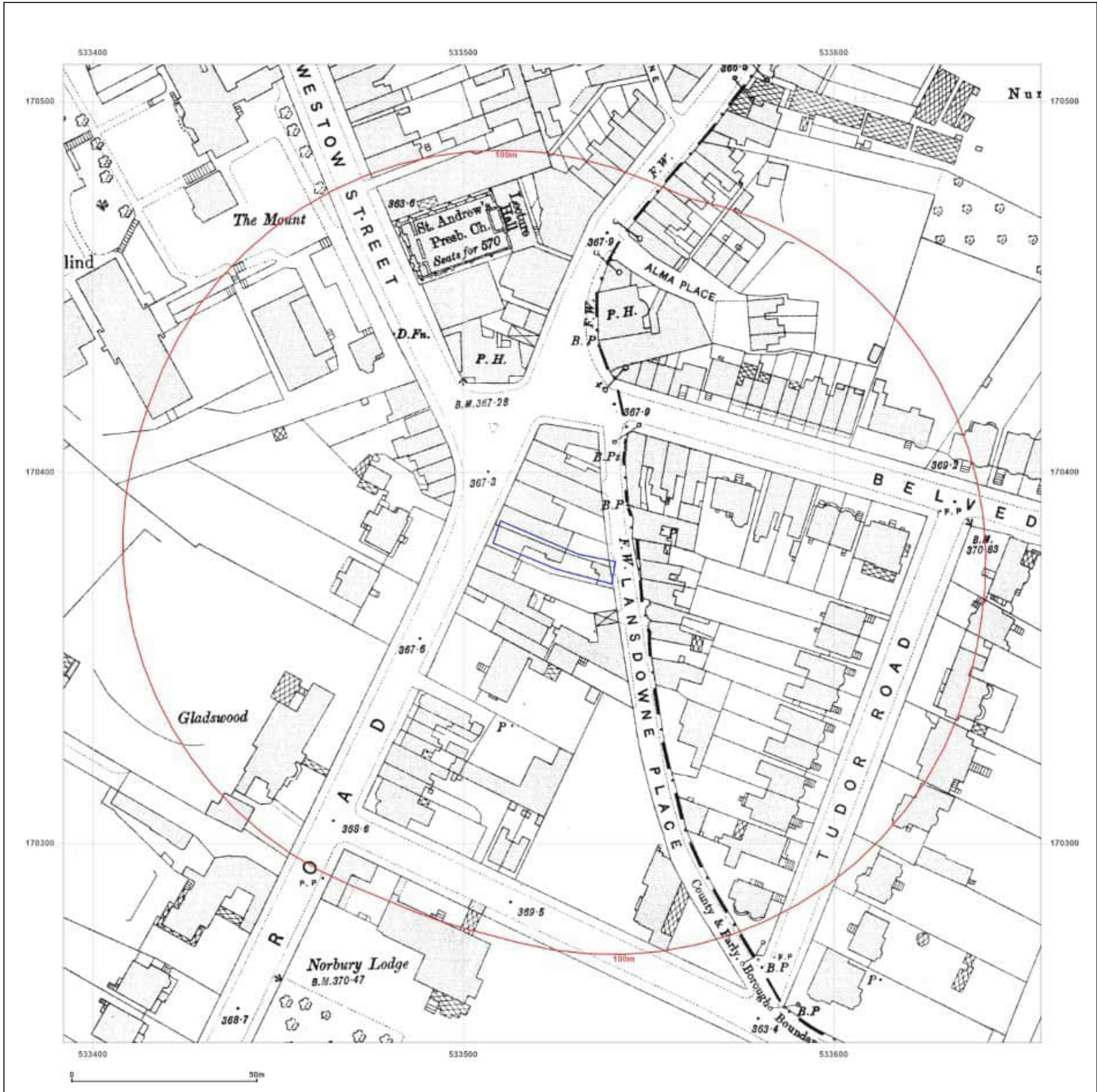


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1897

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2PR

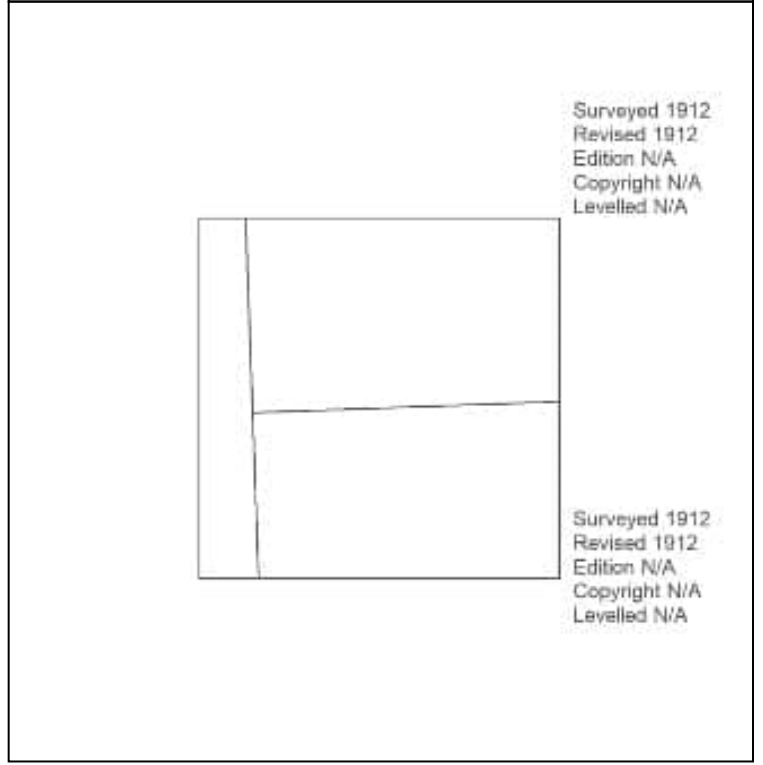
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**Map date:** 1912

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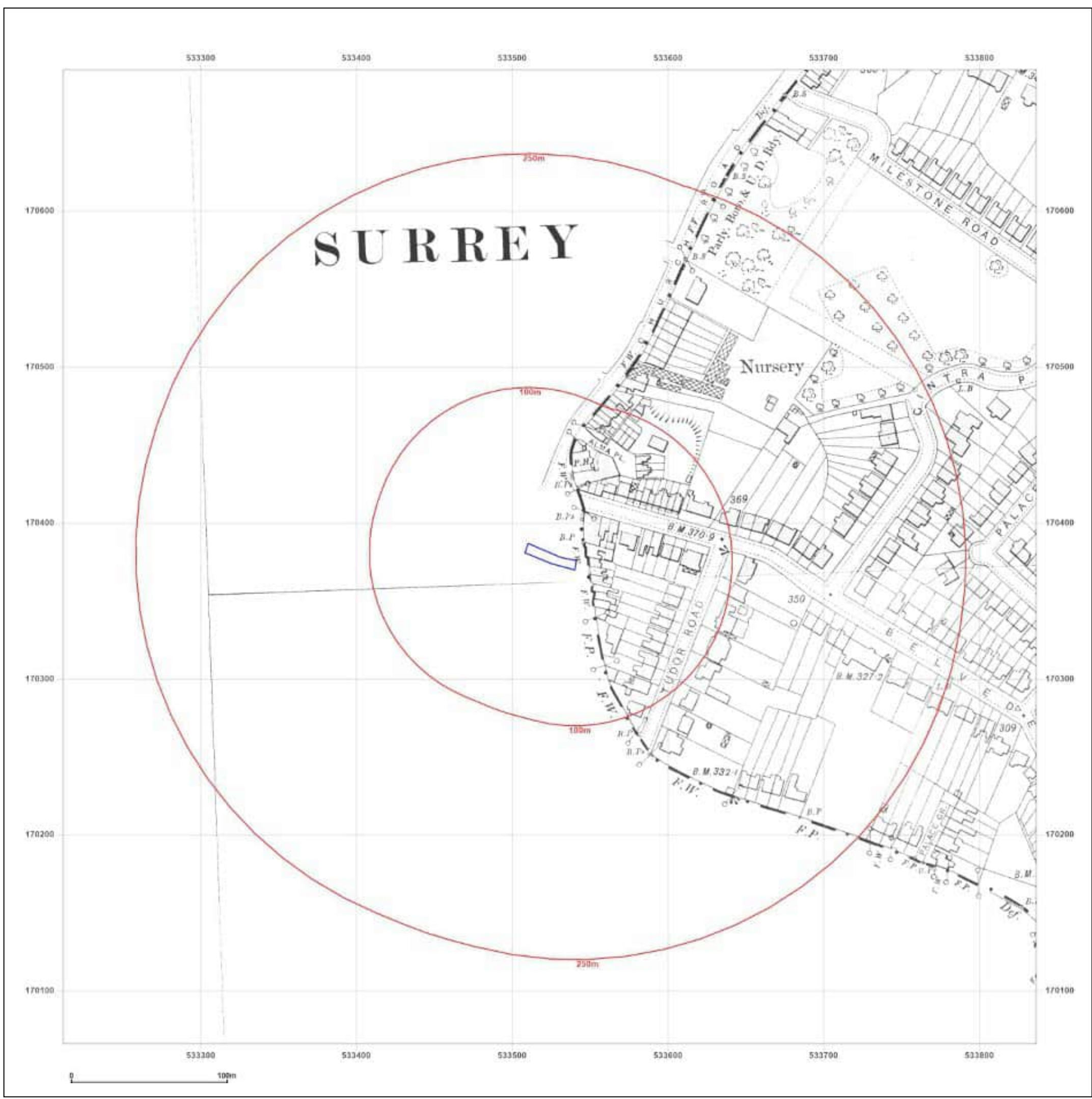


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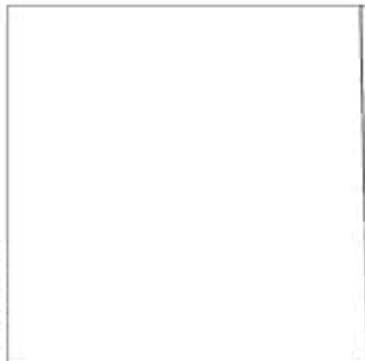
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**Printed at:** 1:2,500





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**Site Details:**

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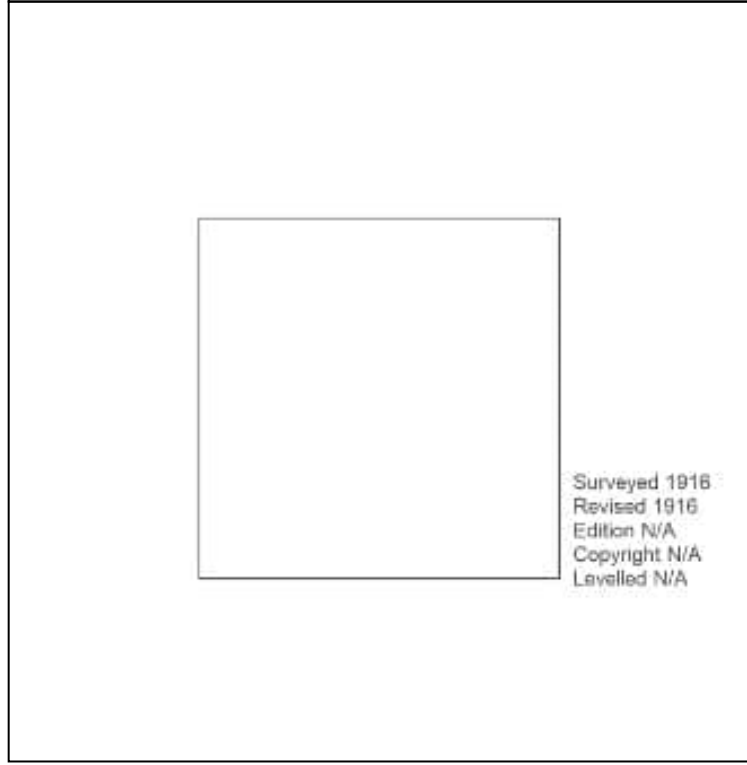
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**Map Name:** County Series

**Map date:** 1916

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Revised 1916  
Edition N/A  
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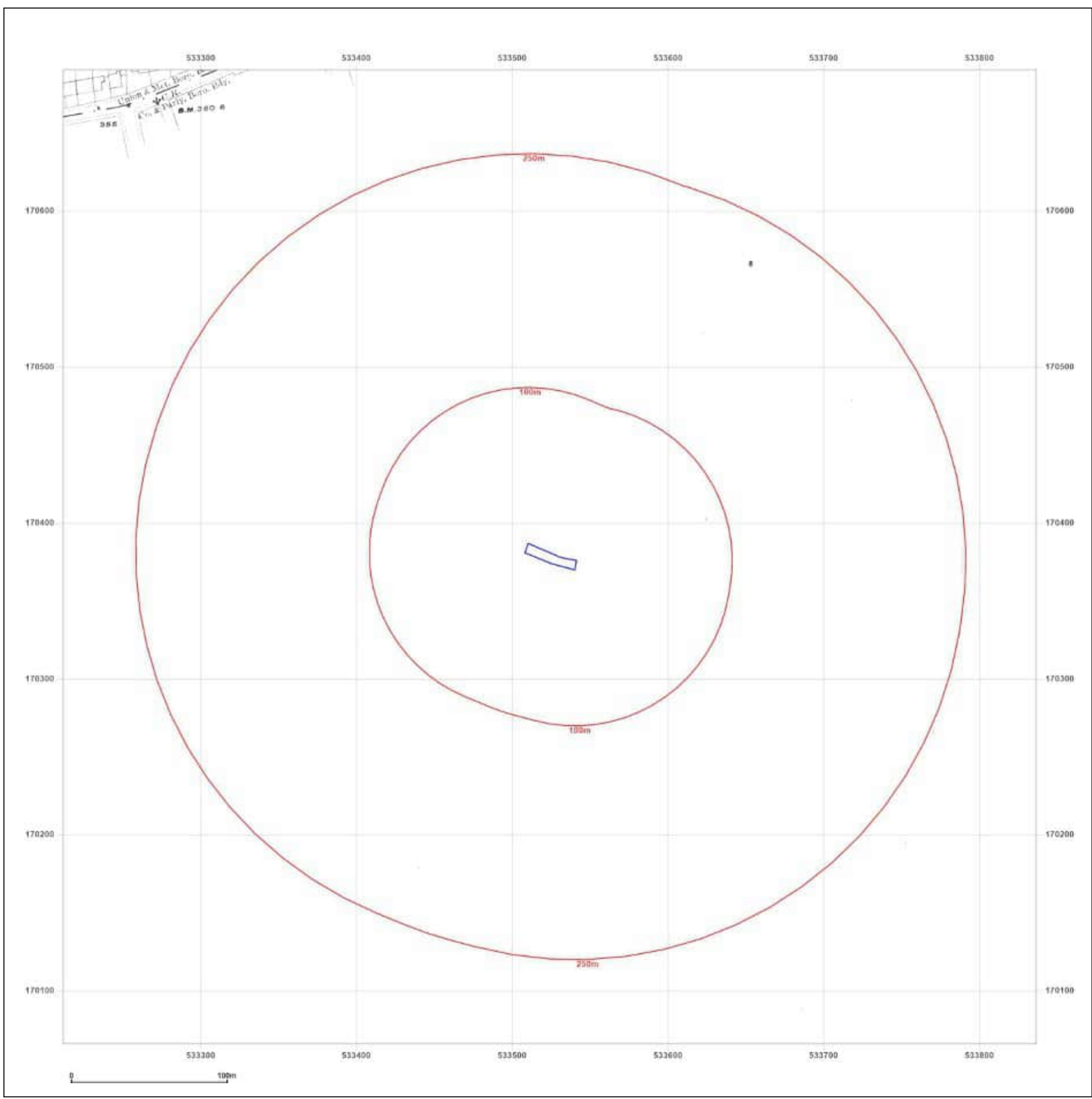


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NORWOOD, LONDON, SE19  
2PR

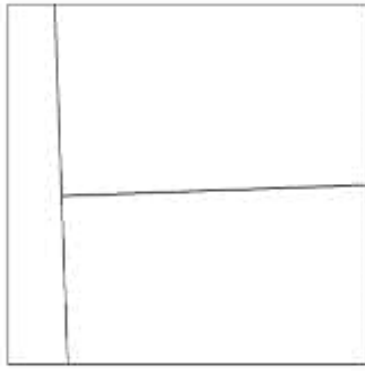
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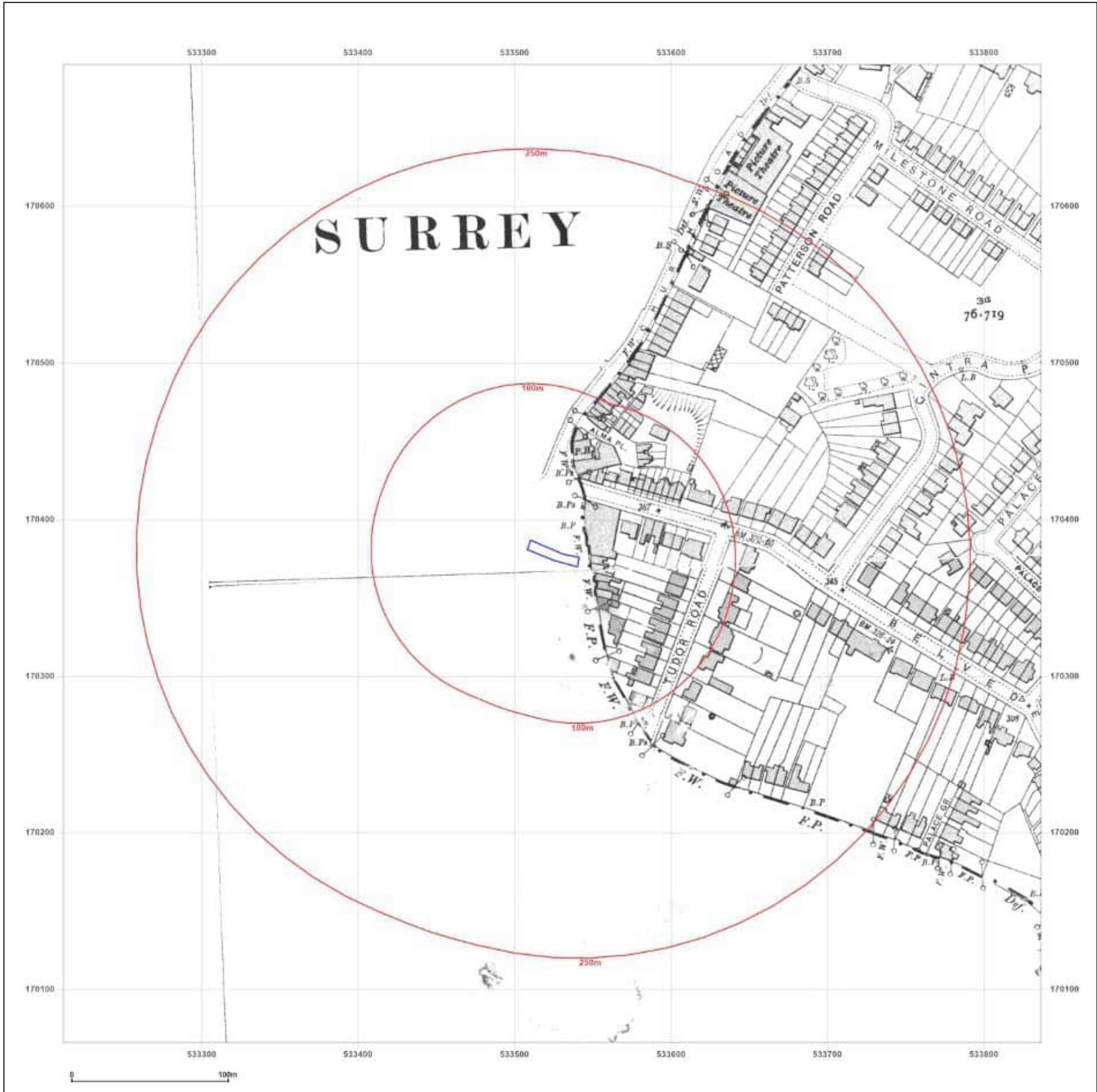
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Revised 1933  
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Edition N/A  
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**Site Details:**  
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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series  
**Map date:** 1933  
**Scale:** 1:2,500  
**Printed at:** 1:2,500



Surveyed 1933  
 Revised 1933  
 Edition N/A  
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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1940

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
Copyright N/A  
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Surveyed 1940  
Revised 1940  
Edition N/A  
Copyright N/A  
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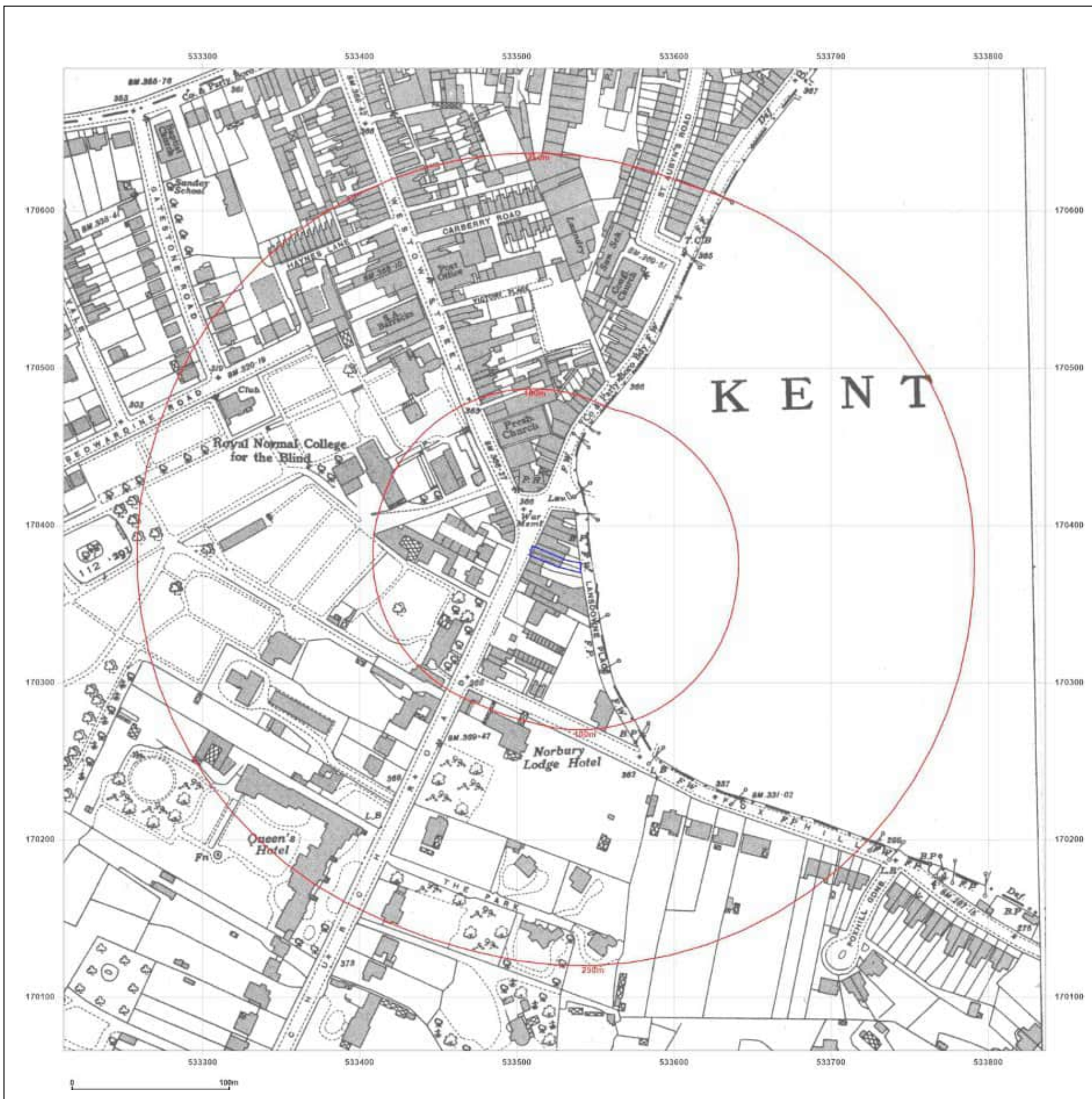


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1951-1952

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised 1952  
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Revised 1952  
Edition N/A  
Copyright N/A  
Levelled 1934

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

Surveyed 1952  
Revised 1952  
Edition N/A  
Copyright N/A  
Levelled 1932

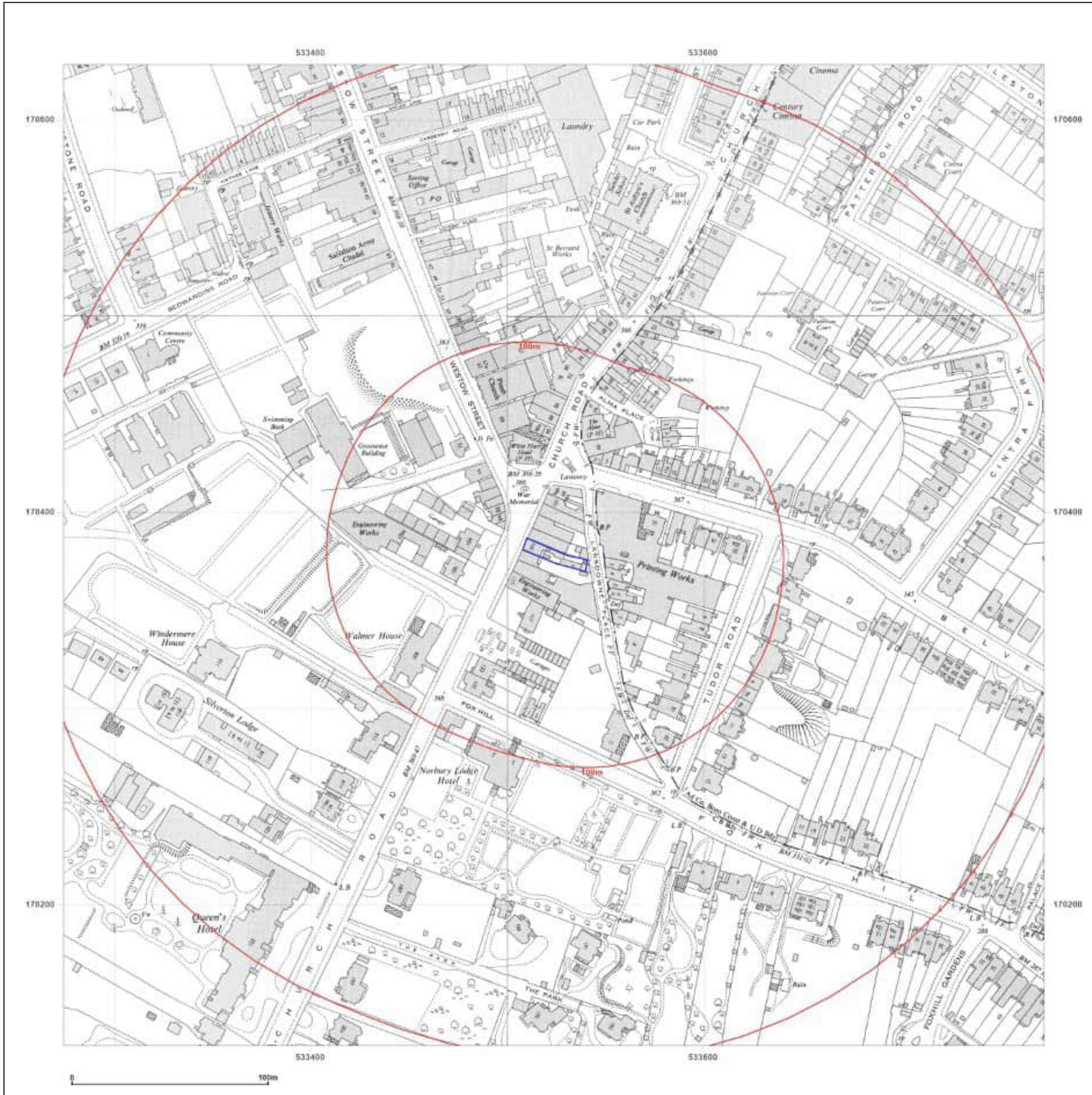


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1952

**Scale:** 1:2,500

**Printed at:** 1:2,500



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 Edition N/A  
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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

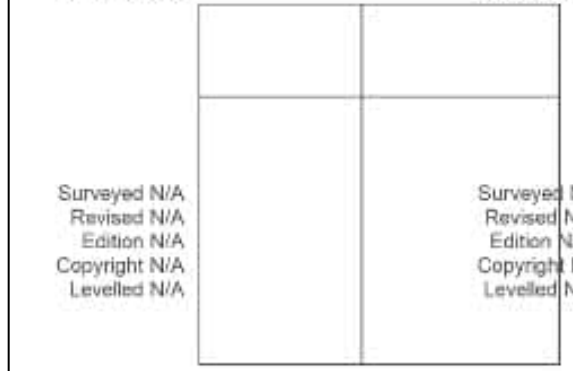
**Map date:** 1952-1953

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1934
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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
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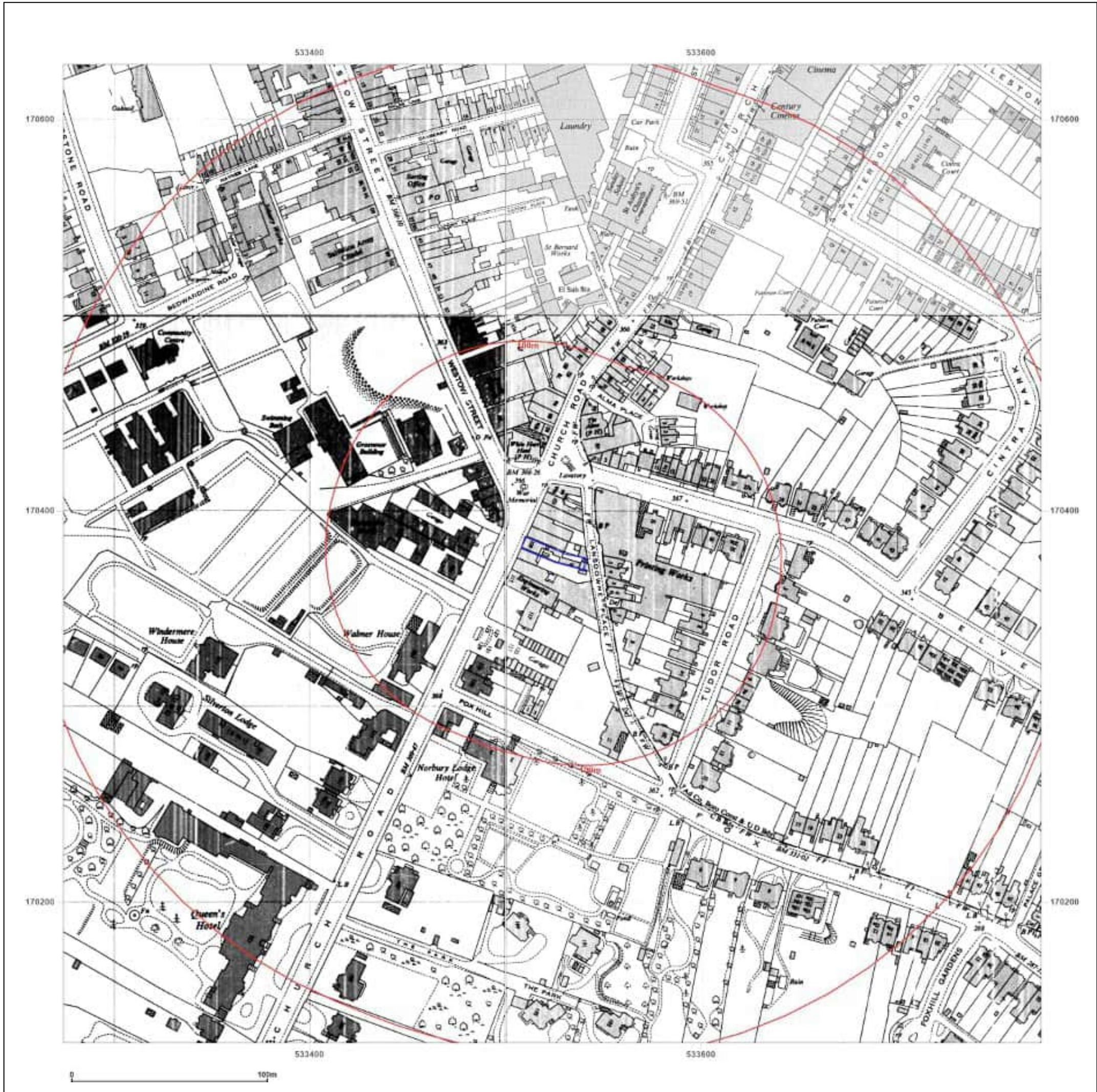


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1953

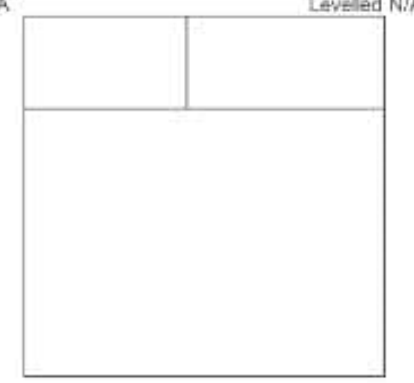
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Revised N/A  
Edition N/A  
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Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright N/A  
Levelled N/A

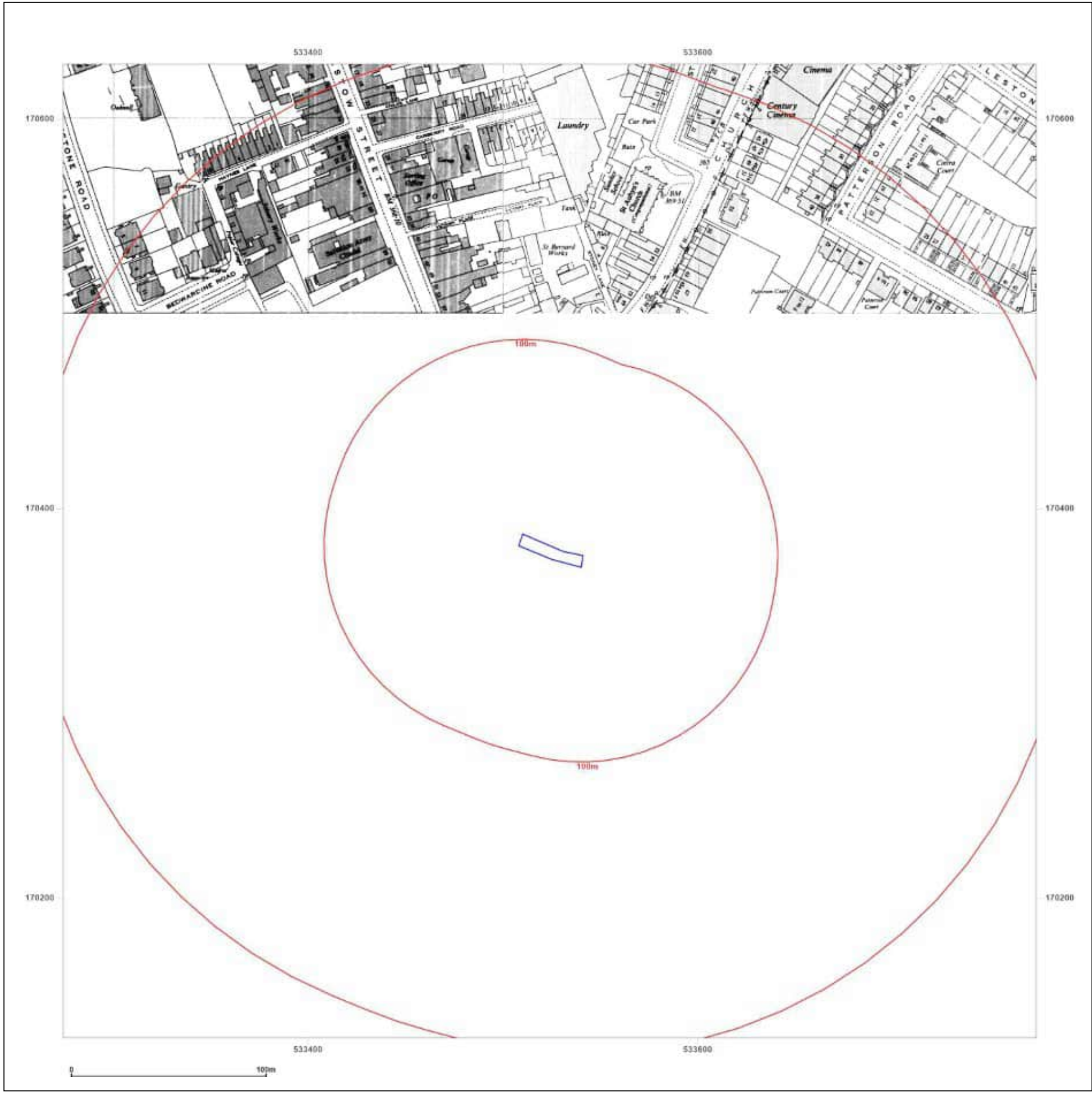


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2PR

**Client Ref:** PH1-2022-000076  
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**Grid Ref:** 533524, 170378

**Map Name:** National Grid

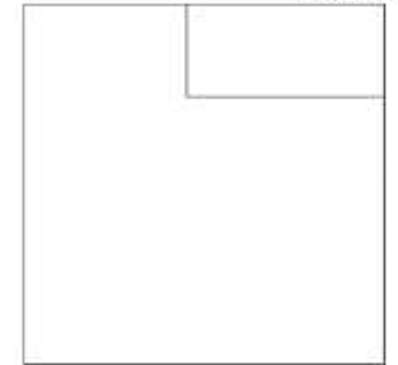
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**Printed at:** 1:2,000



Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright N/A  
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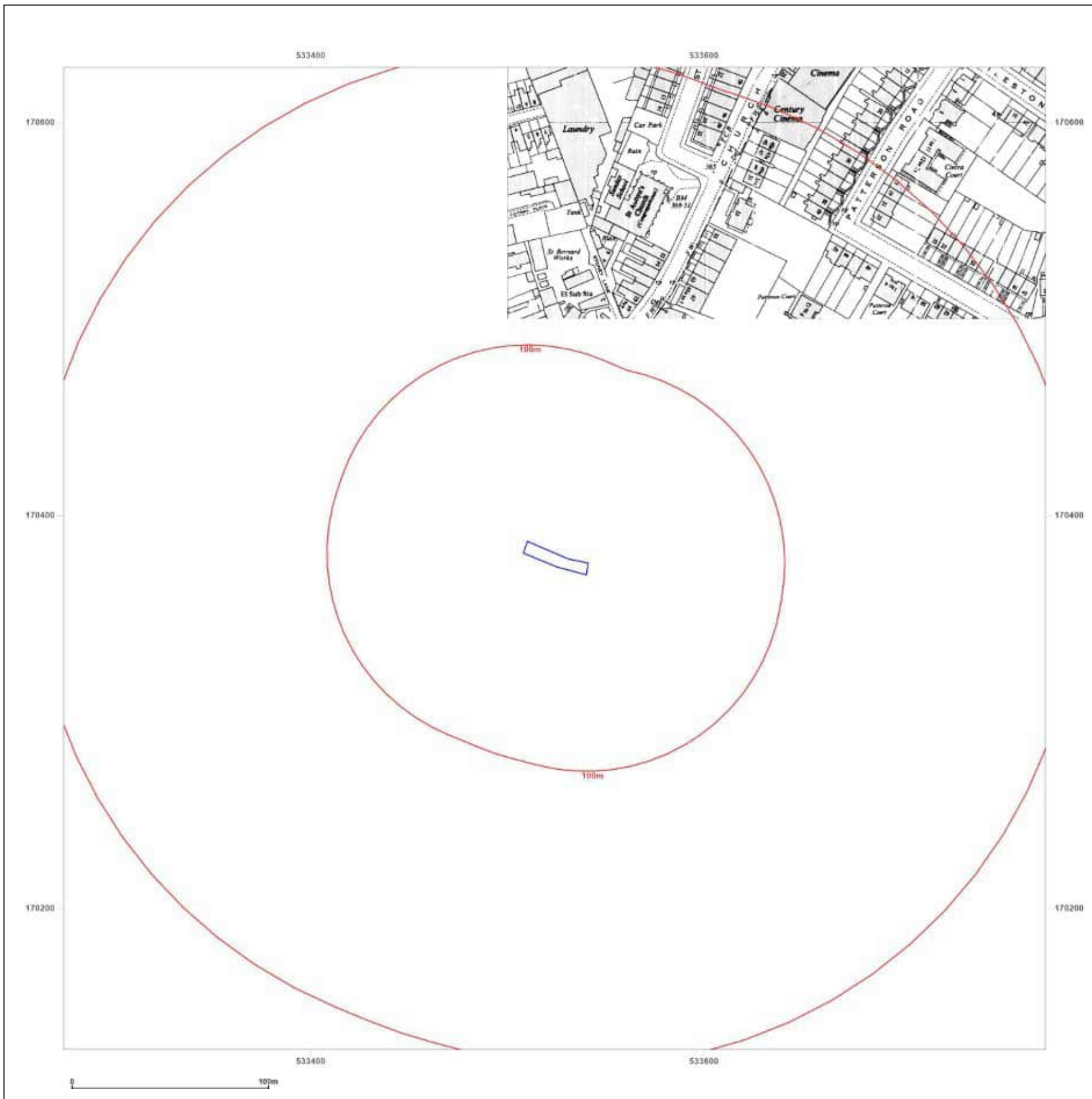


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

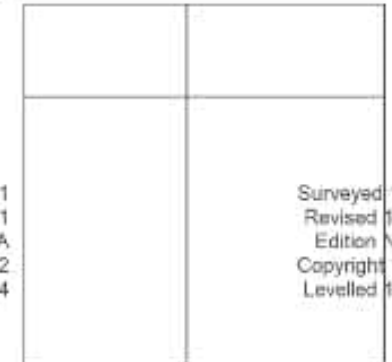
**Map date:** 1962-1965

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised 1965  
Edition N/A  
Copyright 1953  
Levelled 1934



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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

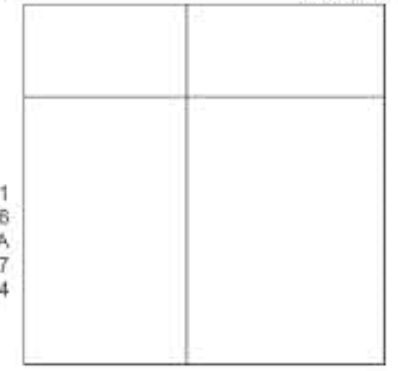
**Map date:** 1967-1969

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1952 Revised 1966 Edition N/A Copyright 1967 Levelled 1954	Surveyed 1968 Revised 1968 Edition N/A Copyright 1969 Levelled 1954
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Surveyed 1951  
 Revised 1966  
 Edition N/A  
 Copyright 1967  
 Levelled 1954

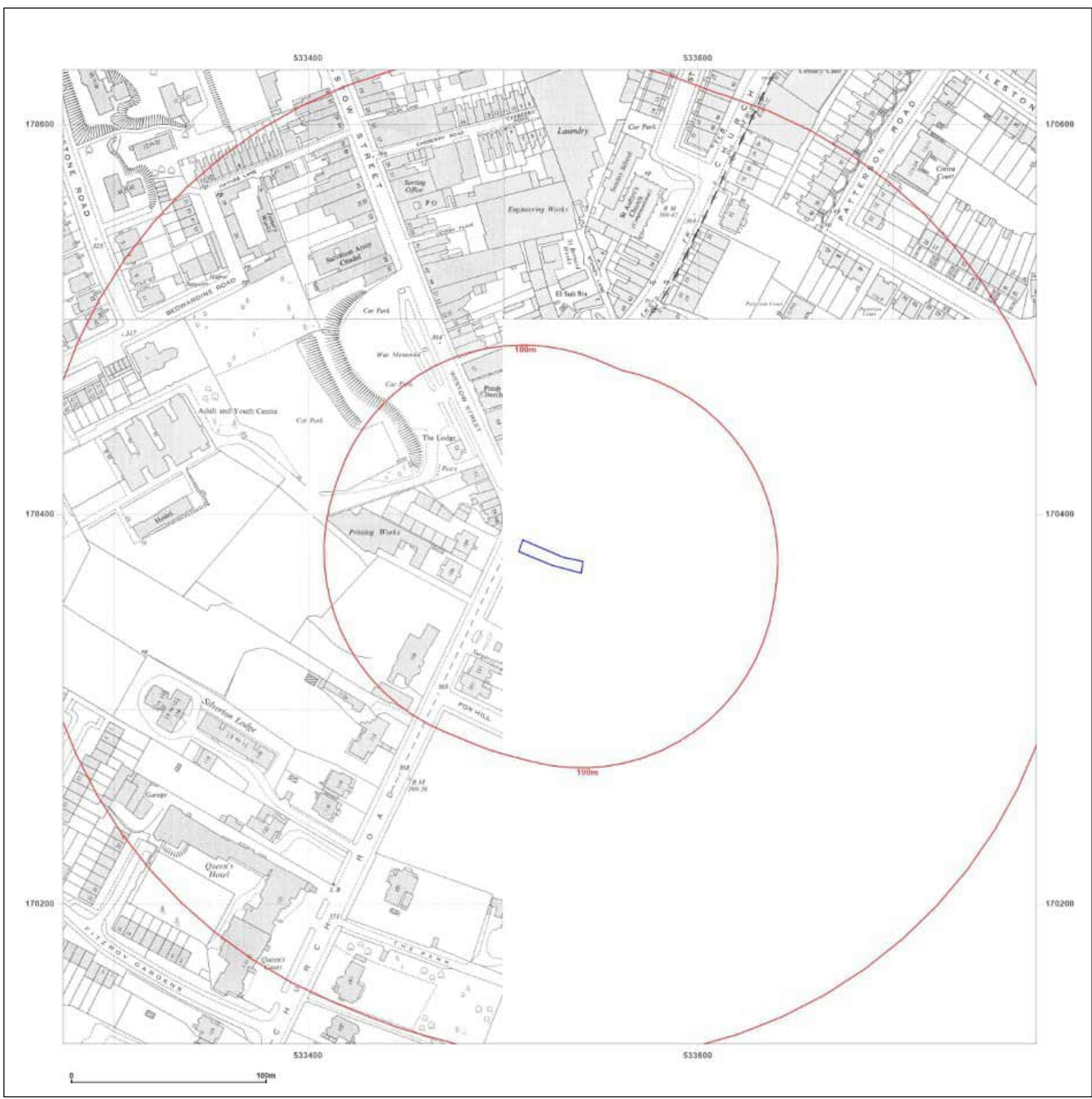


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

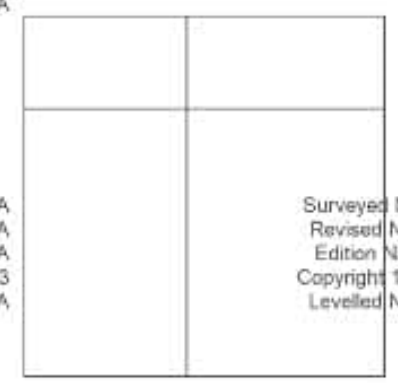
**Map date:** 1973

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised N/A  
Edition N/A  
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Edition N/A  
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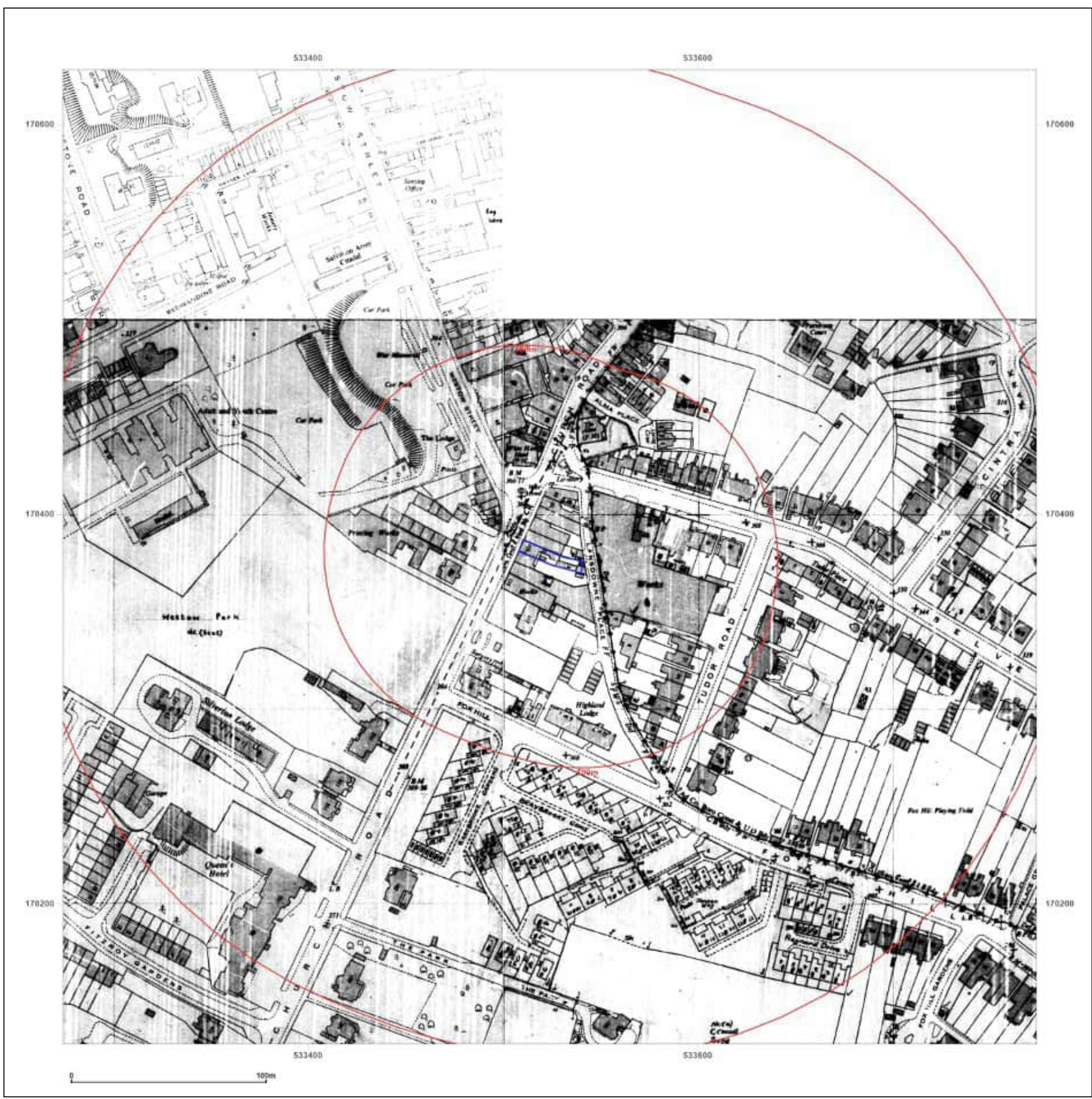


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1974-1979

**Scale:** 1:1,250

**Printed at:** 1:2,000



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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1982-1987

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Surveyed 1976 Revised 1987 Edition N/A Copyright 1987 Levelled 1978	Surveyed 1978 Revised 1985 Edition N/A Copyright 1985 Levelled 1978

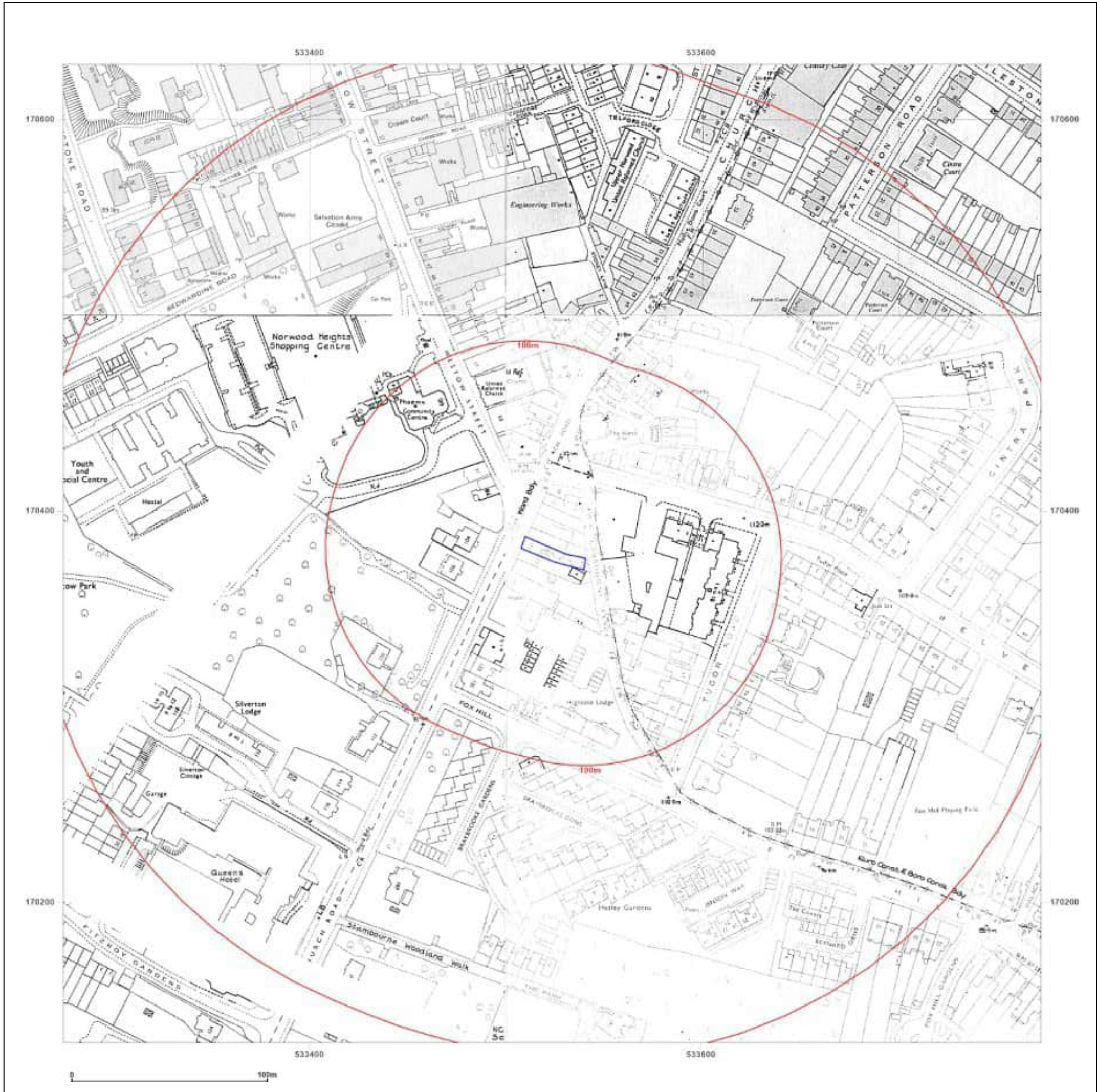


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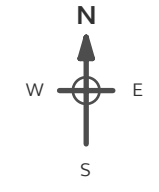
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**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1987-1991

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Surveyed N/A Revised N/A Edition N/A Copyright 1991 Levelled N/A	Surveyed 1978 Revised 1988 Edition N/A Copyright 1988 Levelled 1978

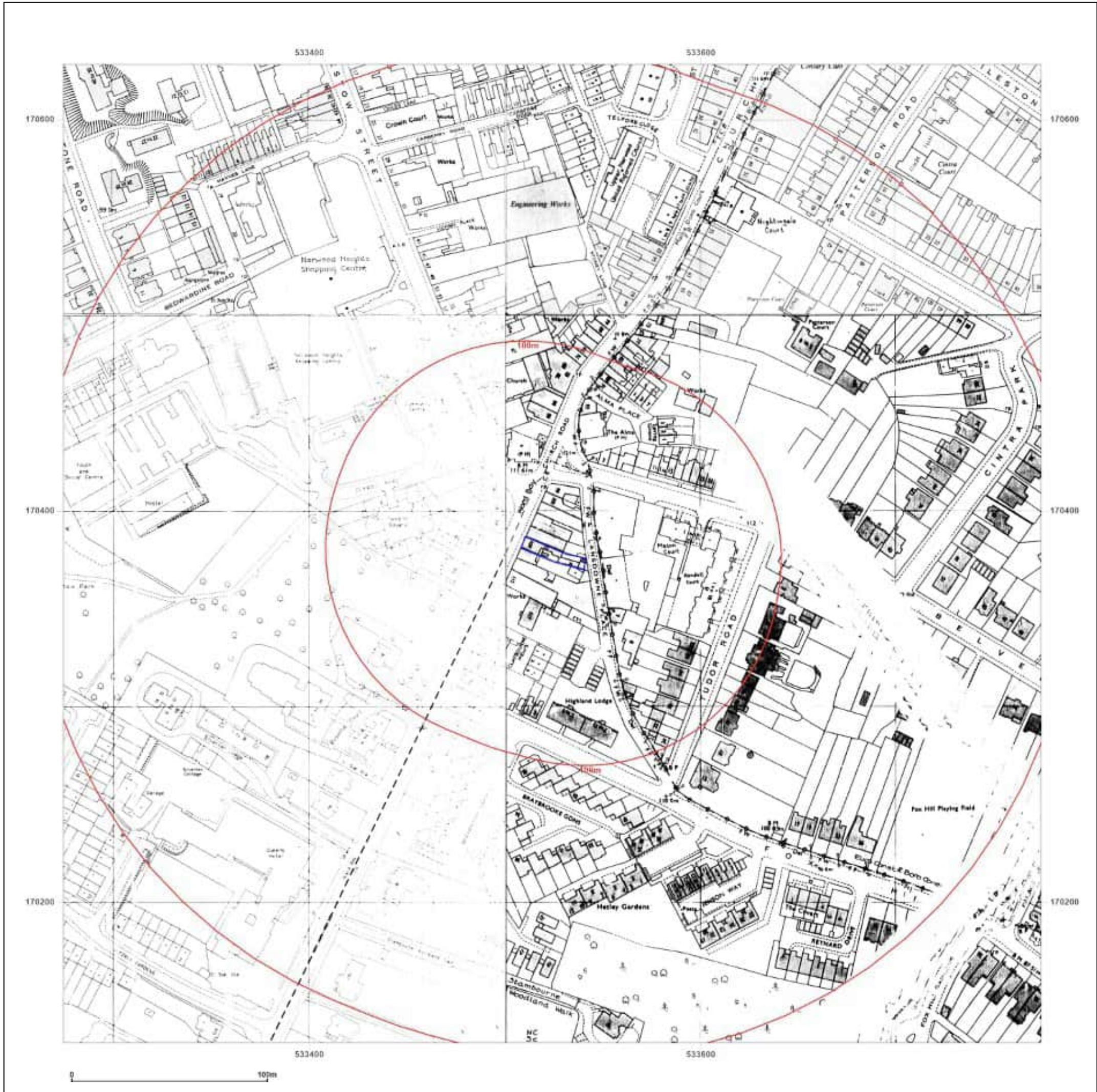


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1988-1991

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised N/A  
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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1991

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised 1991  
Edition N/A  
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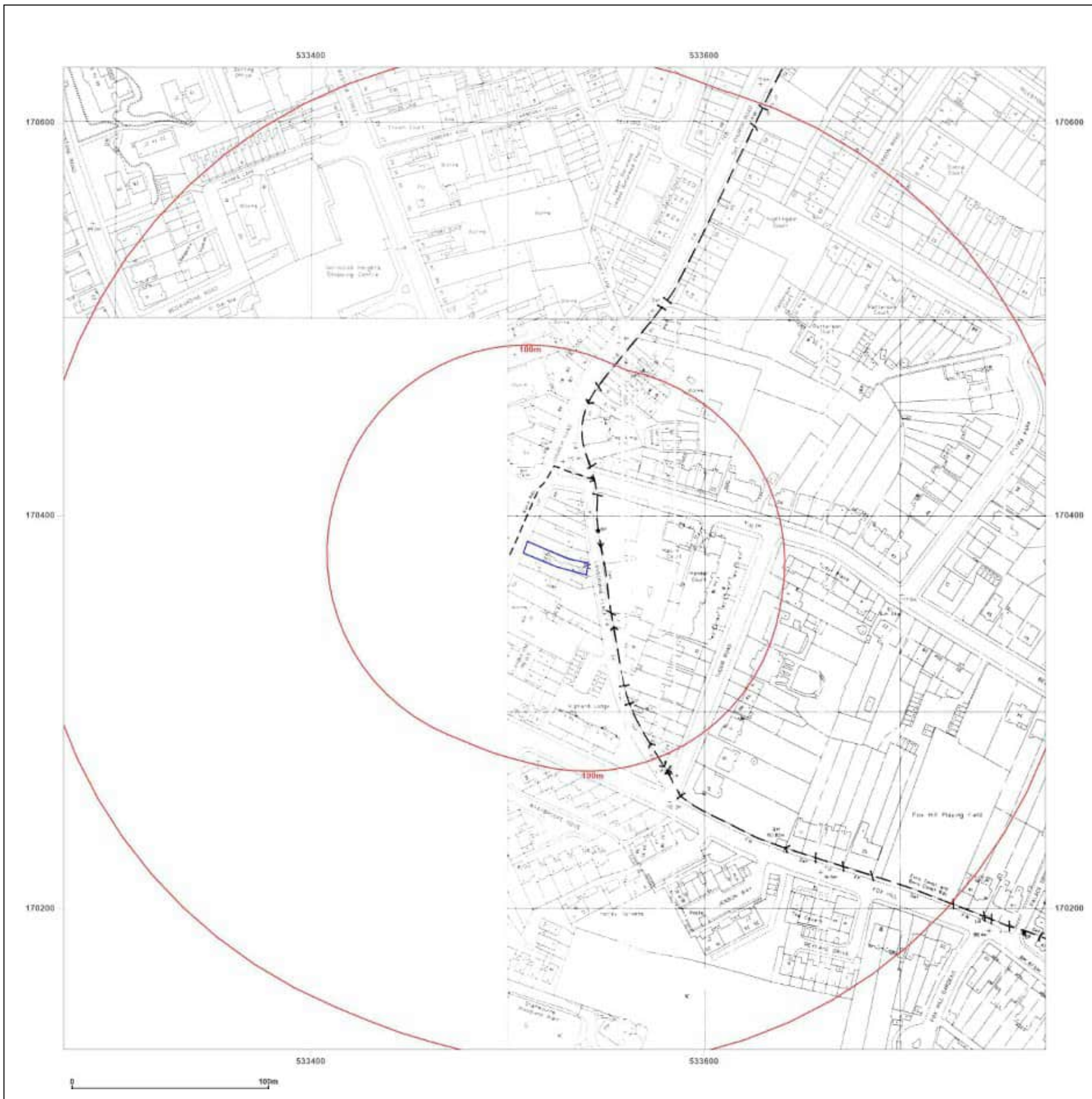


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** National Grid

**Map date:** 1991-1993

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Revised 1991  
Edition N/A  
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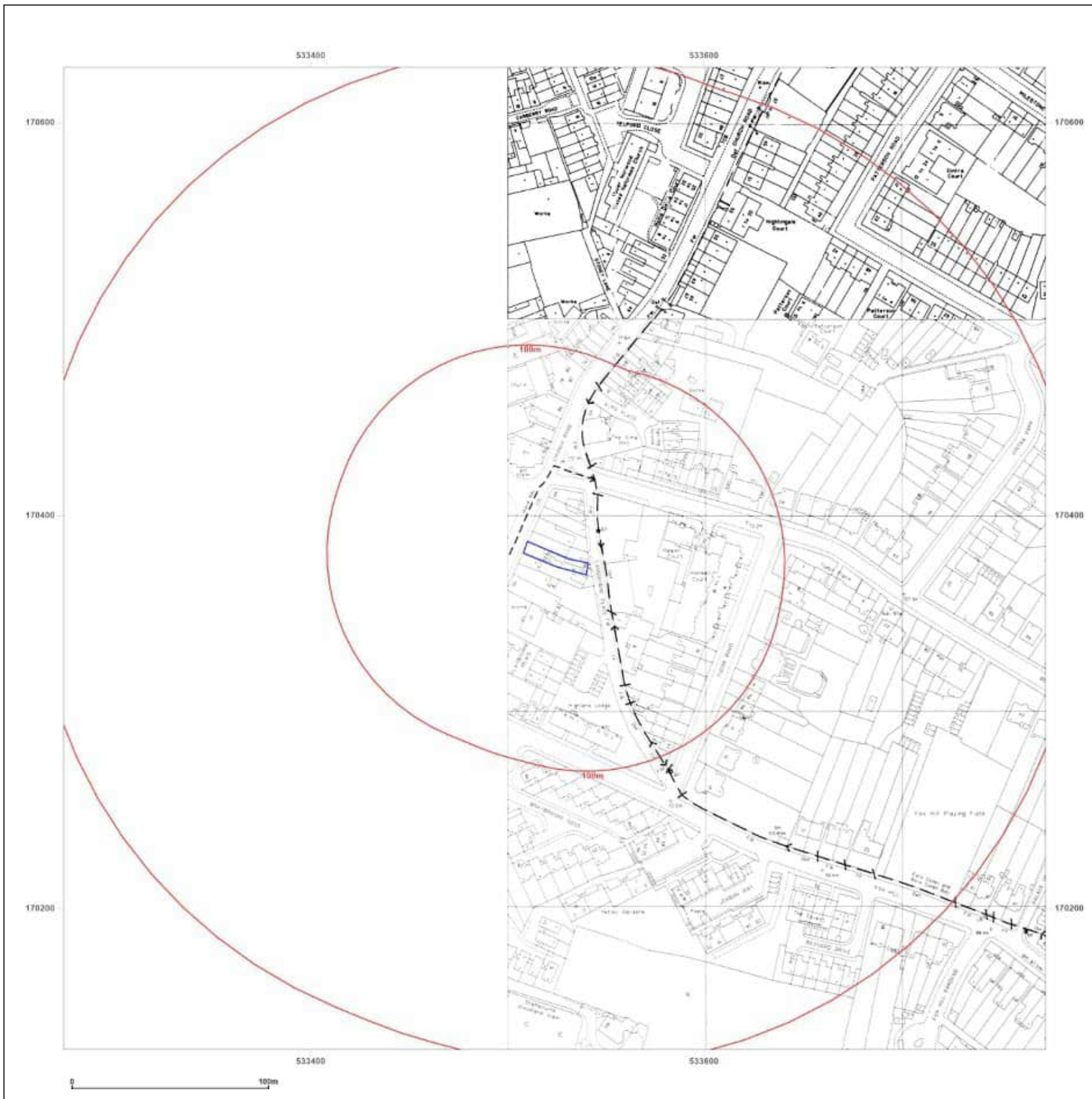


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**Client Ref:** PH1-2022-000076  
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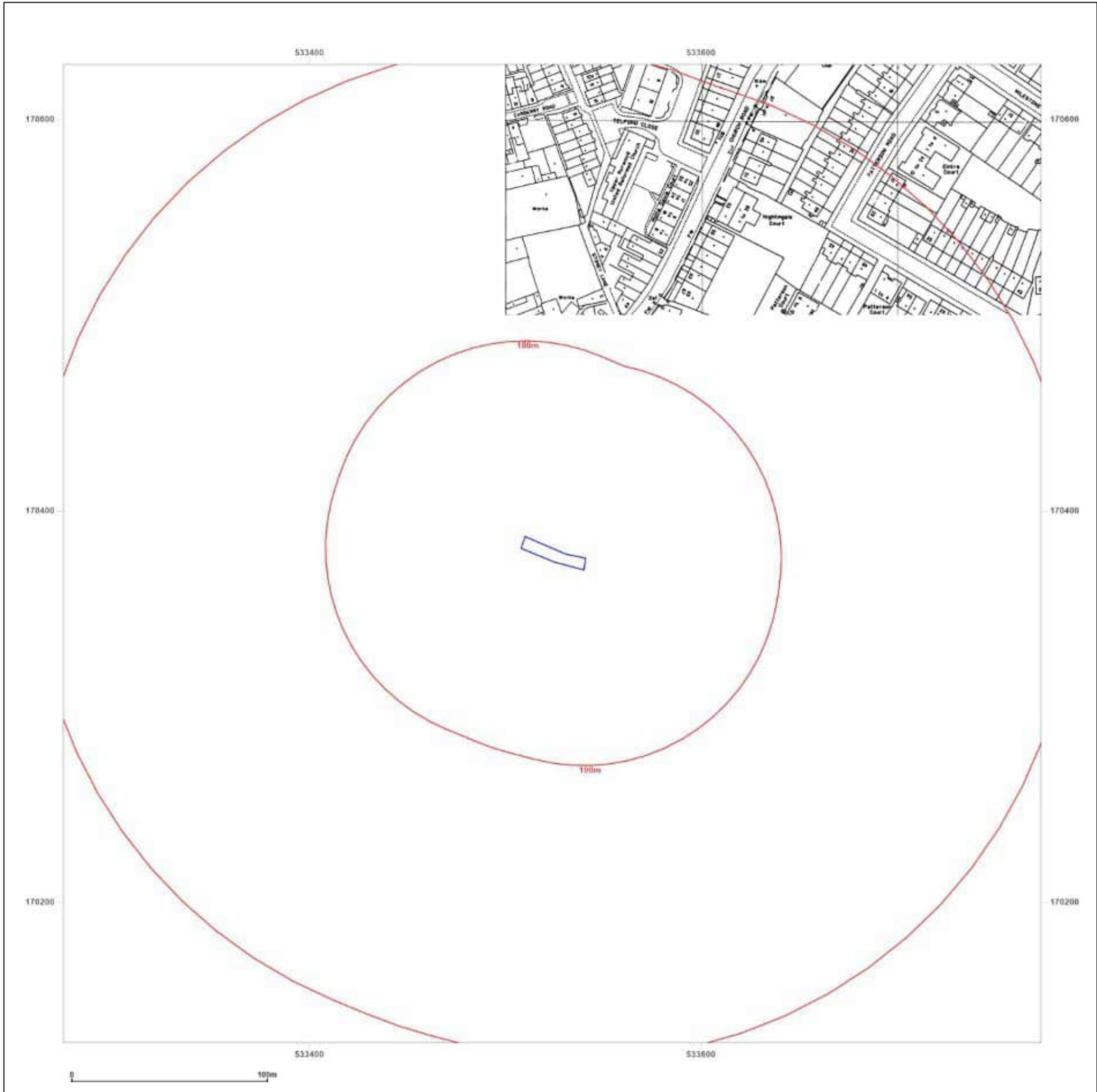
**Map date:** 1993

**Scale:** 1:1,250

**Printed at:** 1:2,000



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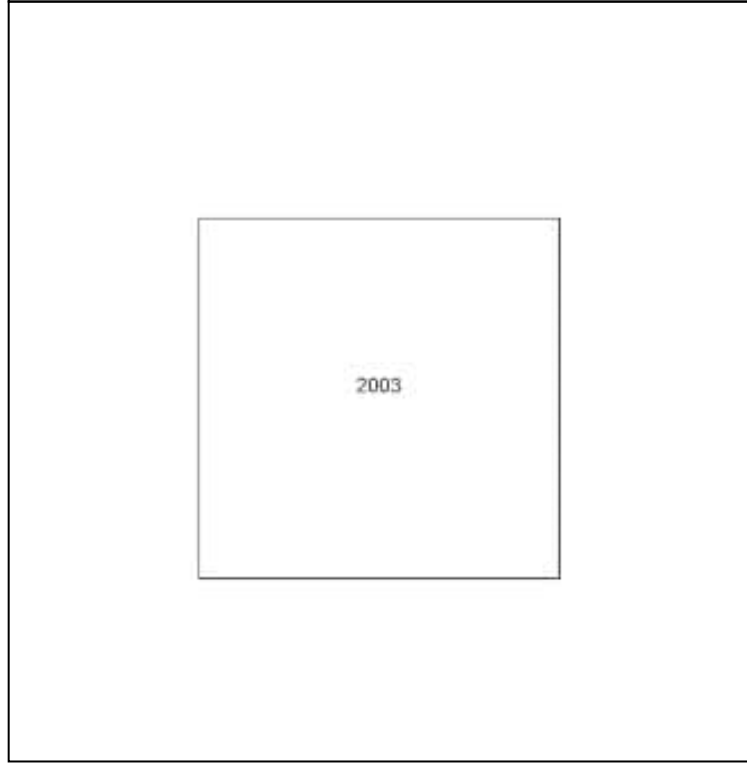
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**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

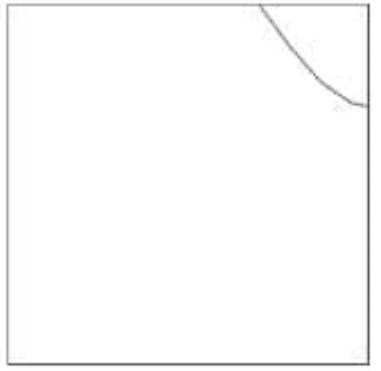
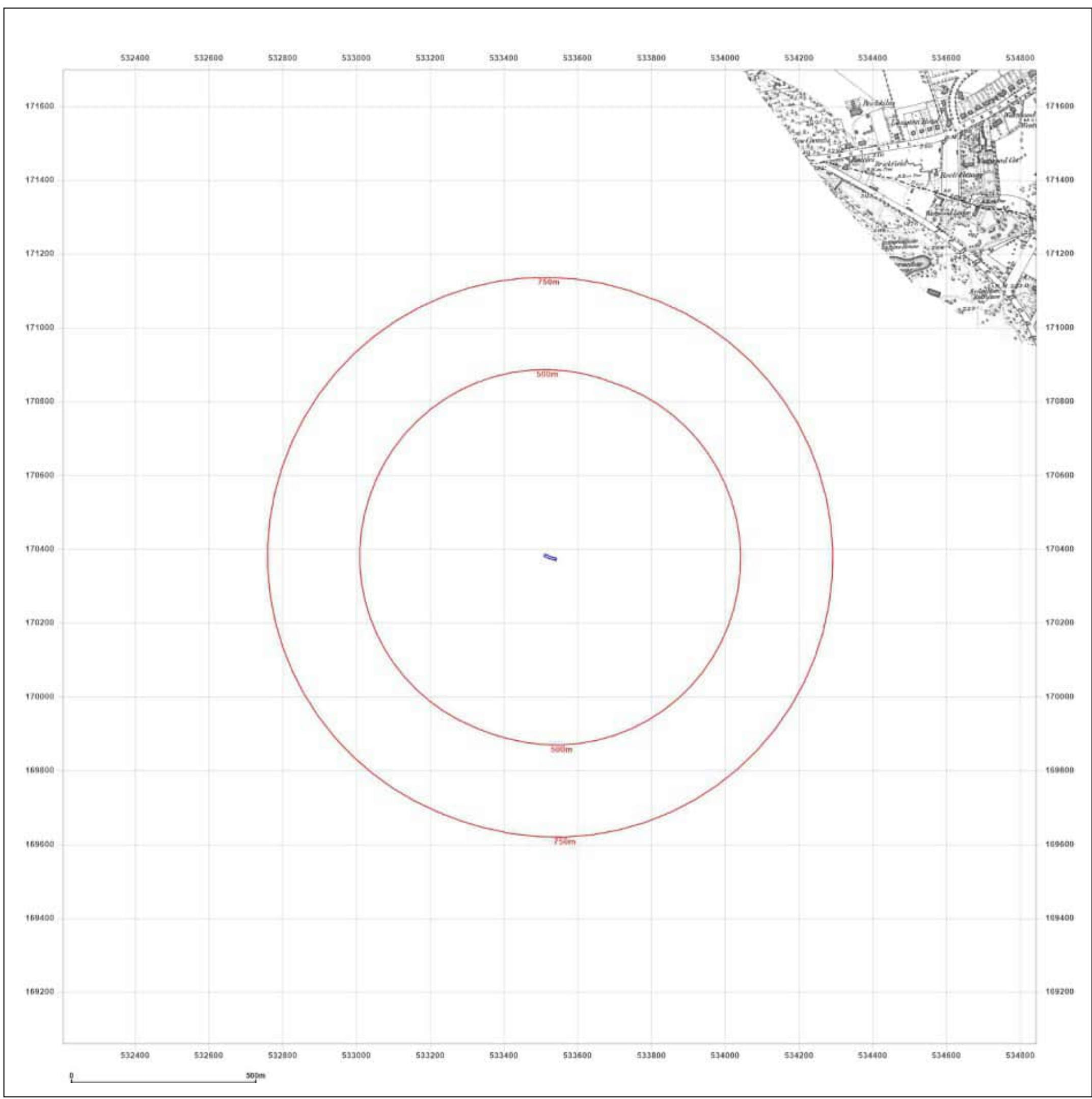
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**Printed at:** 1:10,560



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**Site Details:**

109, CHURCH ROAD, UPPER  
NORWOOD, LONDON, SE19  
2PR

**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

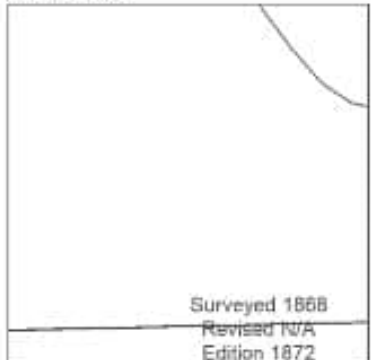
**Map date:** 1870-1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1870  
Revised 1870  
Edition N/A  
Copyright N/A  
Levelled N/A



Surveyed 1868  
Revised N/A  
Edition 1872  
Copyright N/A  
Levelled N/A

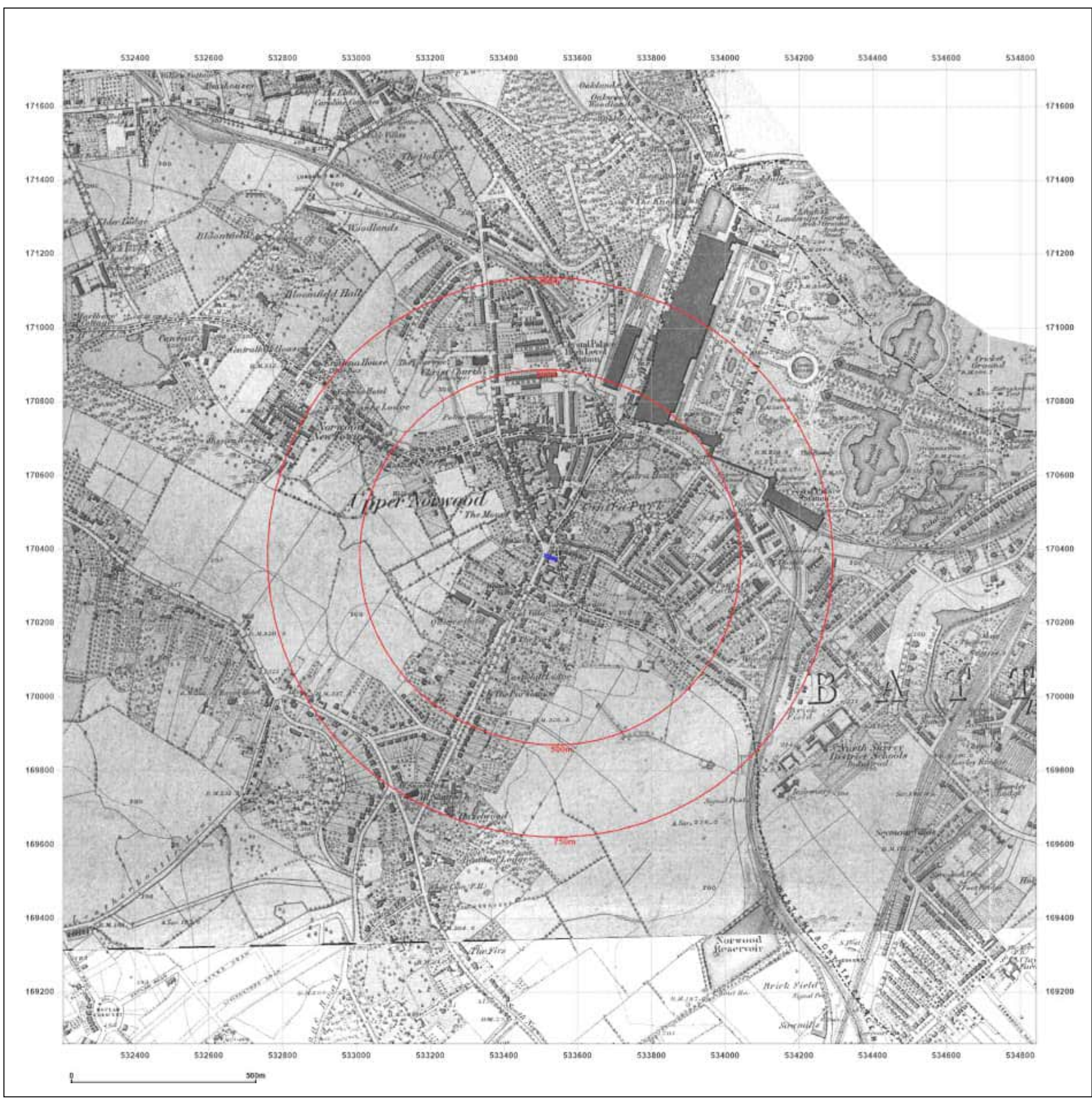


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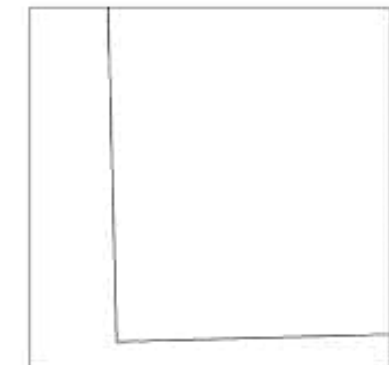
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**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1894

**Scale:** 1:10,560

**Printed at:** 1:10,560

Surveyed 1894  
Revised 1894  
Edition N/A  
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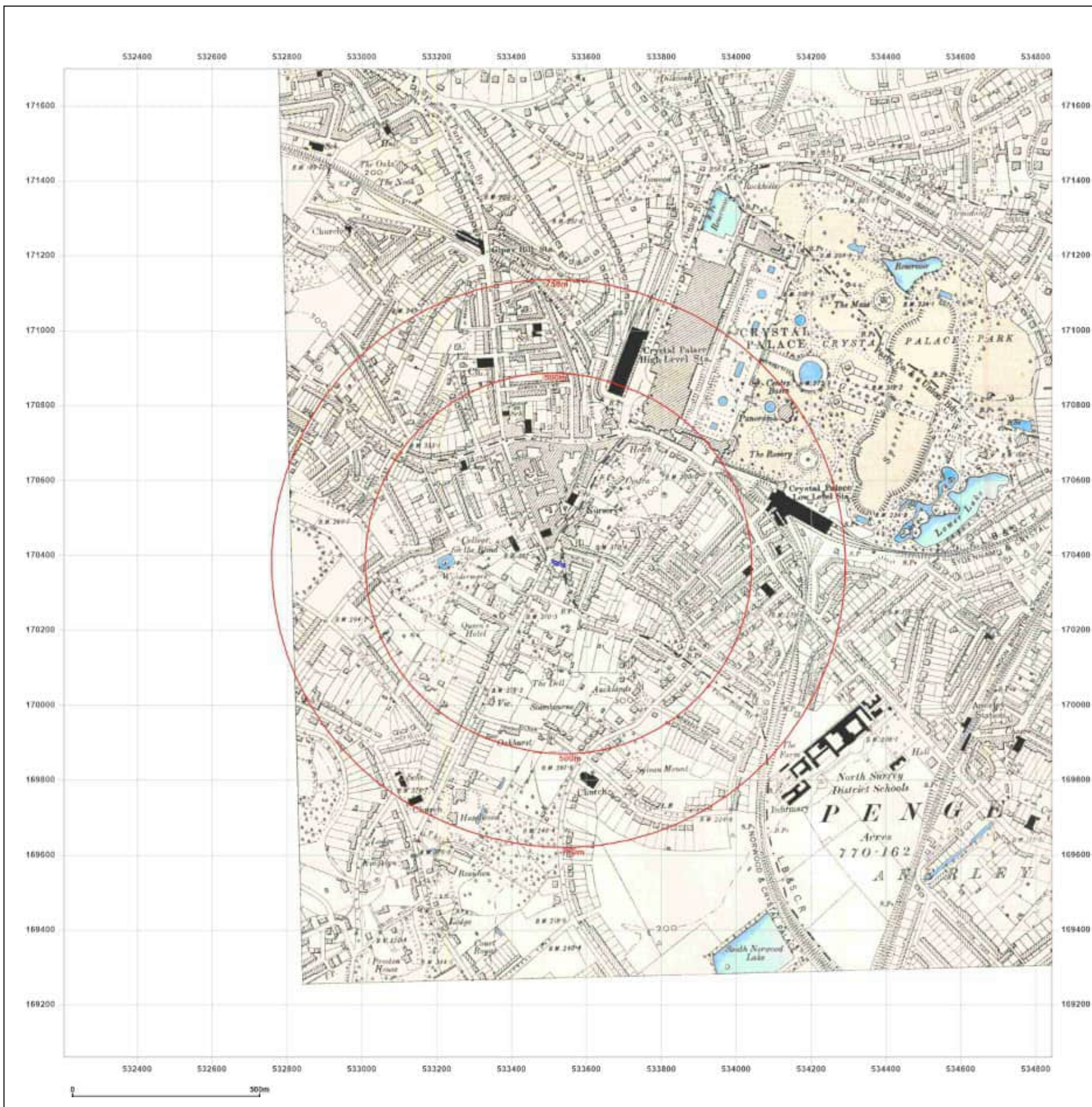


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1894-1895

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1894 Revised 1894 Edition N/A Copyright N/A Levelled N/A	Surveyed 1894 Revised 1894 Edition N/A Copyright N/A Levelled N/A
Surveyed 1895 Revised 1895 Edition N/A Copyright N/A Levelled N/A	Surveyed 1895 Revised 1895 Edition N/A Copyright N/A Levelled N/A

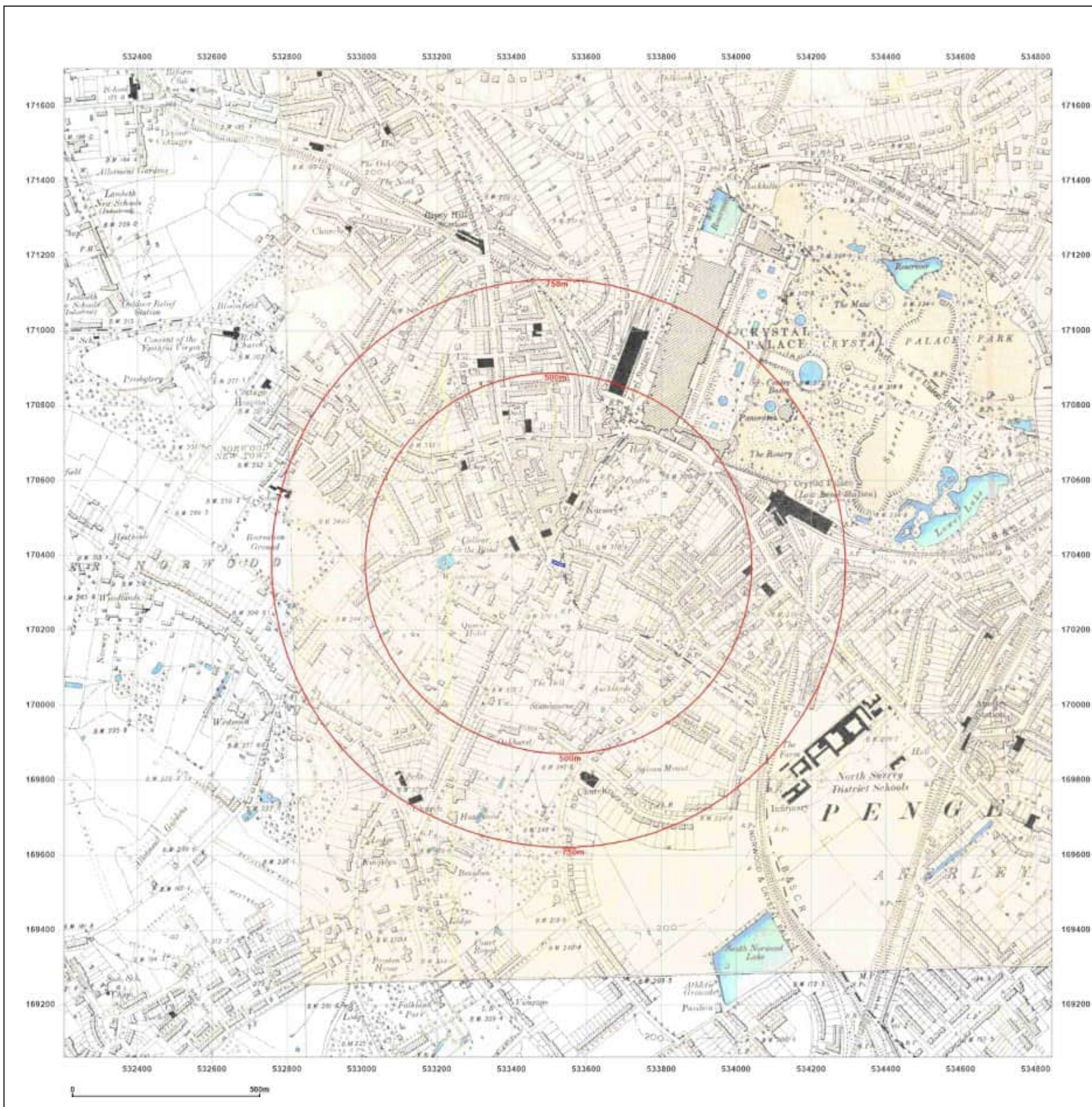


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1895-1898

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1855  
Revised 1894  
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Surveyed 1862  
Revised 1895  
Edition N/A  
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Surveyed 1868  
Revised 1895  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1868  
Revised 1895  
Edition N/A  
Copyright N/A  
Levelled N/A

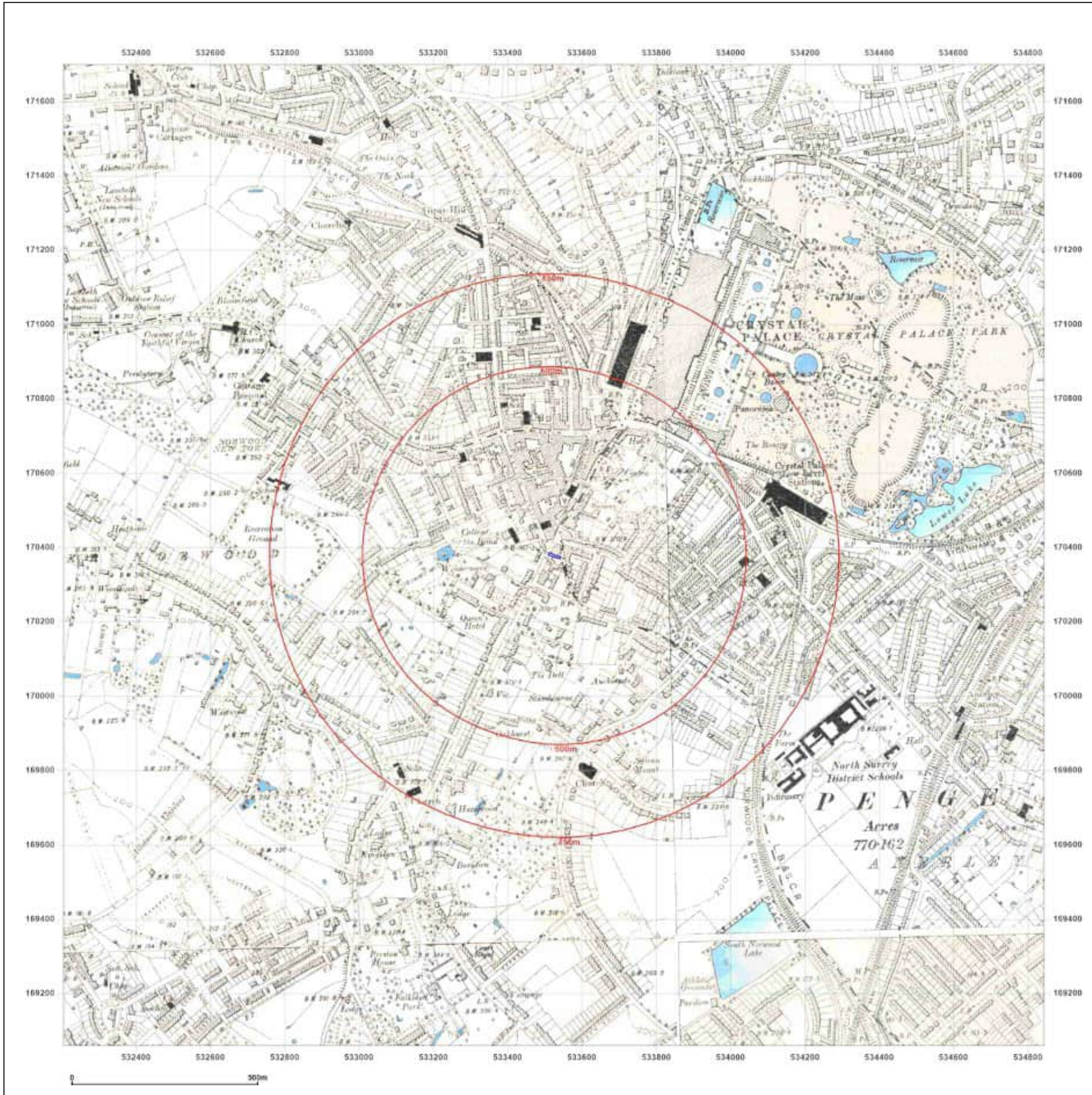


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**Client Ref:** PH1-2022-000076  
**Report Ref:** GS-8994761  
**Grid Ref:** 533524, 170378

**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1866  
Revised 1898  
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Revised 1898  
Edition N/A  
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Surveyed 1868  
Revised 1895  
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