



CARDIFF ROAD

READING

PHASE 1 GEOENVIRONMENTAL
DESK STUDY

Prepared for THAMES PROPERTIES LTD

Report Ref: 32933/01

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Report Ref: 32933/01

PROJECT: Proposed Residential Development

CONSULTANT: N/A

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EXECUTIVE SUMMARY

Site Address	Cox & Wyman, Cardiff Road, Reading, RG1 8LB
NGR, Site area	SU 47094 17411 , approximately 1.3Ha.
Current Use	The site comprised a warehouse used for the storage of mainly theatre, film and television props, sets and equipment.
Geography	The site is at an elevation of approximately 38.7m above Ordnance Datum (AOD) with little discernible variation in topography.
Geology	The site is recorded as being underlain by superficial deposits of the Langley Silt Member. These are underlain by undifferentiated chalk formation strata.
Hydrogeology	The underlying chalk bedrock is designated as a Principal Aquifer. Former and existing potable water abstractions are located on and within 50m of the site.
Hydrology	One surface water feature is recorded within 250m of the site. No Environment Agency GQA Classifications for chemical quality are located within 500m of the site. A Zone 2 floodplain is recorded as extending within the site boundaries relating to fluvial flooding.
Site History	The site had been first developed as a printing works by 1910 and was subsequently extended over time. The present layout was shown on maps from the late 1960s.
Current Surrounding Land Use	The area surrounding the site is of mixed usage with residential properties mainly to the east and south and industrial/commercial premises to the north and west.
Conclusions and recommendations	Potential sources of contamination identified include an on-site electricity sub-station, on-site fuel storage former industrial usage as a printing works (possible chemical storage, oil and fuel spills), presence of ACMs in existing buildings Made Ground associated with existing and former buildings. A maximum very high permeability is associated with the underlying solid geology. A LOW risk rating has been designated to buildings & foundations. A LOW-MEDIUM rating has been designated to soils, fauna & flora and surface water. A MEDIUM rating has been applied for human health and groundwater. Overall Risk Assessment of the site is generally MEDIUM for ground contamination. Recommendations for further works - Asbestos surveys are recommended prior to site clearance. - Site investigation for geoenvironmental assessment including targeting former building locations and contamination sources



1. INTRODUCTION

It is proposed to demolish the existing Cox & Wyman premises at Cardiff Road, Reading and replace with a residential development comprising 96 dwellings. Geotechnical Engineering Limited (GEL) was instructed by Thames Properties Ltd to carry out a desk study to determine the geoenvironmental conditions at the site.

The scope of work was defined in correspondence by GEL, reference T25180 dated 20th December 2016, being broadly in accordance with the guidance of BS 5930:2015.

The purpose of the study is to identify and qualify geoenvironmental issues and to determine potential liabilities associated with possible contamination derived from present and previous site use, with reference to public information sources and visual inspection. This report describes the findings of the study and comments accordingly.

The comments given in this report and the opinions expressed are based on a variety of sources which GEL believes to be reliable but cannot guarantee their authenticity or accuracy. There may also be information for the site and its surrounding area that has not been disclosed by this study and therefore has not been considered in this report. Accordingly, a careful watch should be maintained during any future development and the recommendations of this report reviewed as necessary.

It should be appreciated that any Desk Study information is not necessarily exhaustive and that further information relevant to the proposed site usage may be available. The accuracy of any map extracts cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.



The recommendations given in this report should not be used for any other schemes on or adjacent to this site without further reference to GEL.

It is advised that acceptability of the recommendations be confirmed in writing by representatives of the Local Authority prior to commencing any development on the site.

1.1 Methodology

The methodology adopted for the geoenvironmental desk study comprised the following:

- A visual reconnaissance by GEL on the 24th April 2017, to include an inspection of the site, identifying surface features indicative of possible site contamination, which may present environmental liabilities for the site.
- An assessment of environmental records from local, regional, and national agencies. The information is derived from Groundsure GeoInsight and EnviroInsight Reports provided by Centremaps, Ref. CMAPS-AAC-611633-13562-290317GEO and CMAPS-AAC-611633-13562-290317EDR respectively. Please note the terms and conditions attached to the supply of data from Centremaps.
- An assessment of potential sources of contamination on and surrounding the site, from a historical review of maps dated from 1877; information sourced from Centremaps, Ref. CMAPS-AAC-611633-13562-290317HIS.
- The production of a report, collating and summarising information gathered for this desk study, with an initial qualitative risk assessment to identify potential hazards which may present risks to local receptors defined using a “source – pathway – receptor pollutant linkage” concept. This concept, introduced in the Environmental



Protection Act (1990), considers whether potential source contaminants reach targets and the significance of the impact of this linkage.

It should be noted that no intrusive investigation, testing of soil, building materials, surface water or groundwater has been carried out within this assessment. Dependent on the findings of this study, recommendations for further studies by means of an intrusive investigation may be advised.



2. SITE SETTING

2.1 Site Location

The site is situated at Cardiff Road, Reading, RG1 8EX and may be located by its National Grid co-ordinates SU 47094, 17411, see Figure 1. The rectangular shaped site is approximately 1.3Ha and is positioned at an estimated elevation of approximately 38.7m above Ordnance Datum (AOD), based upon Ordnance Survey spot heights adjacent to the site on Cardiff Road to the south and Addison Road to the east with little discernible variation in topography across the site.

2.2 Site Description

A site inspection was undertaken by a representative of GEL on the 24th April 2017 accompanied for part of the time by Mr I. Foster (site tenant); photographs taken during the site reconnaissance are presented in Appendix B. It should be noted that photographs within the warehouse part of the premises were prohibited. A plan of the site, with notes, is presented in Figure 2.

At the time of the reconnaissance, the site was being let to the current tenants by Cox & Wyman for the storage of film, theatre, television props, stage equipment, costumes and sets, some in boxes and containers. Also present in the building were seating, electrical equipment, furniture and 205-litre drums of concentrated fruit juices. Some of the larger set and stage items were also stored outside the building.

On the eastern side of the building (**Photograph 1**) was the main commercial vehicle entrance to the site leading into an open area of concrete panel hardstanding. On the northeastern end of the building was a weighbridge. In the northeast was a brick and tiled roof outbuilding assumed to be for storage and with a hazard warning sign for flammable gas



and LPG on the door. In front of the outbuilding was the storage area for waste materials awaiting collection. These included a large open skip and eurobins containing foam and polystyrene as well as stockpiled plastic bags, plastic containers and drums of mainly textiles and general waste such as food wrappers and drink containers (**Photograph 4**).

The main building comprised an open brick building with roller shutter access on all sides. The building had a suspected probable Asbestos Containing Material (pACM) roof for much of the structure with area of tiles and skylights elsewhere. In the southwest was an upper floor office area. On the ground floor in the central area was a boiler/plant room.

The ground floor was densely packed with storage items with routes for forklift trucks to traverse through the building. This prevented the visual assessment of much of the remaining features from the use of a printing works however there were layout plans on a noticeboard on the ground floor of the building that identified areas of previous maintenance, binding operations and adhesive storage in the north, colour printing in the southwest and film and paper stores in the south.

Site Access

There were two main points of access to the site at the time of inspection. Access to the eastern half of the site for deliveries and collections was from a gated entrance in the northeast from Meadow Road.

An alternative point of access to the first-floor offices was in the southwest of the site where there was a small tarmac car park and building entrance off Cardiff Road.



Drainage and Services

Inspection covers and surface water drains were noted in the small car park in the southwest corner of the site. Also present in this car park was a stopcock cover. The site is understood to have no live gas supply. The tenants were operating a wood recycling plant in the southeastern extension of the main building for heating the premises (**Photograph 6**).

Potential Contamination Sources

To the southeast of the main building was an area of pallet and stillage storage of polystyrene materials. Also here were two 205-litre oil drums (**Photograph 2**). At the time of inspection these were empty.

In the southeastern part of the site was an electricity sub-station fronting onto Cardiff Road (**Photograph 3**). A warning sign for asbestos was also present on the gated entrance to the sub-station. The electricity sub-station mentioned above may represent a possible source of Polychlorinated Biphenyls (PCB) contamination given its age.

In the central southern part of the site close to the plant room was a large rectangular tank within a brick bund structure. From site layout plans on the interior walls of the premises it is evident that this contained diesel. It is unknown as whether there is still diesel present in the tank (**Photograph 5**).

It is apparent that there are asbestos containing materials used in the construction of the electricity sub-station building and it is suspected that parts of the roofing of the main building are also composed of Asbestos Containing Materials (ACMs) in a corrugated cement-bound form. It is also suspected that ACMs may have been used for pipe lagging as noted on the first floor of the office part of the building (**Photographs 7 and 8**).



2.3 General Surroundings

The land to the south and east of the site comprised mainly terraced residential properties. Opposite the site on Meadow Road were “Manrose Manufacturing Ltd” (ventilation fans manufacturers) and a derelict plot of land previously occupied by a company named “Waymaster”. On the western side were terraced residential properties fronting onto Cardiff Road and units of the “Milford Road Trading Estate”, the occupied units including vehicle maintenance and repair premises, car rental, window fabricators and carpet suppliers/fitters.

2.4 Proposed End Use

It is understood that the proposed development will comprise ninety-six residential properties, assumed to comprise mixed apartments and houses, some with private gardens, with an access road leading from “Milford Road” to the west.

2.5 Regional Geology and Mining

British Geological Survey (BGS) England and Wales (Sheet No SU 77 SW 1:10,000 and Sheet No. 268, 1:50,000) and the BGS online geology (1:50,000) indicate the site is underlain by superficial deposits of the Langley Silt Member (predominantly clays and silts). Underlying the superficial deposits are undifferentiated solid strata of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and the Newhaven Chalk Formation.

Made Ground is anticipated locally, associated with current and previous outbuildings and structures.

The following information is derived from the Groundsure reports presented in Appendix A.



The Health Protection Agency indicates that the site is located within an area where less than 1% of homes are above the Action Level for radon. Radon protective measures are not considered necessary by the Building Research Establishment, BR211 (2015).

Two historical surface ground workings are recorded within 250m of the site. The closest was located 39m south – “unspecified ground workings”. No historical underground workings are recorded within 1000m of the site. Two “current” ground workings are shown within 1000m of the site; the closest relating to “sand and gravel extraction” at Battle Farm, approximately 747m to the southwest of the site. The status of this record is ‘ceased’.

The site is not located in an area considered to be affected by coal mining, assessed on a 1km buffer zone from the site boundary. Non-coal mining (chalk) may have occurred 378m south as localised and small-scale and not likely to present difficult ground conditions.

Regarding natural subsidence on site, a null/negligible hazard risk relates to compressible deposits and running sands and very low risk for ground dissolution of soluble rocks, shrink-swell clays, landslides and collapsible deposits.

Sites underlain by chalk can be prone to the presence of natural solution features (including “solution pipes”) formed by dissolution of the soluble chalk strata. These features can be present in a stable or potentially unstable condition and metastable cavity forms may be disturbed and triggered to cause ground subsidence. Trigger mechanisms may include loading, leaking drains, or water supply pipes. The Groundsure report identifies seven natural cavity locations on the Peter Brett Associates (PBA) natural cavities database within 1000m of the site, although none of these are within 650m.



Five British Geological Survey (BGS) boreholes are recorded within 50m of the site. Four of these are identified as being located on the site, however further inspection limited this to two boreholes (SU77SW/190 and SU77SW/660). One of these records is for a water well, used to supply water for cooling processes/toilets and bored circa 1938. No geological information is presented on this record. The other on-site record (SU77SW/190) dates from 1960 and indicates Made Ground to approximately 1.37m below ground level (bgl) in turn underlain by 'brown clay and stones' (assumed to be the Langley Silt Member) to 2.59m bgl, 'sands and gravels' to 8.38m bgl and 'chalk and flints' to the base of the boring at 11.43m bgl.

2.6 Regional Hydrogeology

The following information is derived from the Groundsure reports presented in Appendix A.

The Environment Agency (EA) have classified the superficial deposits (Langley Silt Member) at the site as unproductive strata having negligible significance for water supply or base flow to rivers. Records relating to the permeability of the bedrock indicate a low to very low permeability.

The EA have classified the underlying bedrock (Chalk Formations) at the site as a Principal Aquifer, comprising geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Records relating to the permeability of the bedrock indicate a very high permeability.

There are four groundwater abstraction licences recorded on the site. Two of these are identified as an active licence for "Manrose Manufacturing Ltd" which is the premises immediately north of the site. The other two are identified as historical licences for "Cox



and Wyman Ltd” from the ‘Thames Groundwater aquifer’ for non-evaporative cooling and drinking/cooking/sanitary/washing/commercial/industrial/public services. The two licences for “Manrose Manufacturing Ltd” are for similar uses. Both locations include potable abstraction licences.

The site is not located within 500m of a Source Protection Zone (SPZ).

No Environment Agency List 1 or List 2 pollution incidents are recorded within 250m of the site.

There are two former licensed discharge consents to groundwater recorded within 500m of the site. Both were located 395m to the southwest for sewage discharges of effluent at Cow Lane, Reading and were revoked in 2007 and 2010.

The BGS have concluded that the site is not prone to groundwater flooding based on the rock type.

The site is located within a Nitrate Vulnerable Zone (NVZ), as classified by DEFRA under the Nitrates Directive (91/676/EC).

2.7 Hydrology

The following information is derived from the Groundsure reports presented in Appendix A.

One surface water feature is recorded within 250m of the site, this is a partially culverted secondary river approximately 150m south of the site. No Environment Agency GQA Classifications for chemical quality are located within 500m of the site.



No licensed surface water abstractions are recorded within 500m of the site.

Eight licensed discharge consents to surface water are recorded within 500m of the site. The closest recorded at 186m to the south for trade discharges to Abattoir Ditch, assumed to be the nearest watercourse referenced above.

A Zone 2 floodplain is recorded as extending within the site boundaries relating to fluvial flooding. The site is located within an identified low flood risk area based upon the EA/National Resource Wales RoFRaS database.



3. SITE HISTORY

A review of historical mapping has been carried out with the aim of identifying potentially significant historical features at or near to the site. This review included large scale (1:1,250 and 1:2,500) and small scale (1:10,000 [historically 1:10,560]) Ordnance Survey mapping presented with the GroundSure MapInsight report (Appendix C).

Historical mapping is a useful tool in determining the presence of suitable large-scale features present during map production and revision periods. It should be noted that certain features and details may not be readily determined from historical mapping; either due to the size or presence of features during the map production and revision periods.

A summary of relevant information from the review is detailed in the table below. For convenience and for ease of hard copy reproduction historical maps have been reduced from A3 to A4.

Date of Map:	Observations
1877-1900	The site is undeveloped. The northern half of the site is crossed by two water-bearing ditches in a roughly east-west orientation. The general area to the north and west is also crossed by drainage ditches and identified as "liable to flood". There is mainly terraced residential occupation by 1900 to the east and "Cardiff Road" has been constructed on the southern boundary by this date. Approximately 150m east are "Malthouses" and "Timber Yards" and 100m south, multiple "railway lines" and "sidings" (GWR) on embankment. Approximately 175m-250m south are "Reading Abattoirs" and "Cattle Market".
1910-1914	The site has been redeveloped as a "Printing Works" with "Meadow Road" constructed on the northern boundary and "Milford Road" on the western boundary. The main works building is centrally located with outbuildings present in the northeast. The development would appear to have included land raising with the drainage ditches shown extending beneath the two roads. Further residential development has taken place to the east and south. A "Corporation Yard" is also present to the south of the railway close to the "abattoirs".



Date of Map:	Observations
1931-1936	The "Printing Works" has been extended to the north. Additional assumed industrial buildings have been constructed to the north of "Meadow Road" and 150m west on "Cardiff Road". Extensive residential development has taken place on the eastern and southern sides of the site.
1956-1962	The "Printing Works" (shown as "works") has been further extended to the northwest and additional outbuildings constructed in the southwest and southeast. The building 150m west is identified as a "depot". "Works" buildings are present on the northern side of "Meadow Road", 125m to the north and 200m east and alongside "Cardiff Road" 20m and 50m southwest. Numerous "warehouses" are present within 250m to the east (including former "Malthouses") and to the southwest alongside Cardiff Road".
1969-2014	The southwestern part of the main building has been further extended. A "tank" is present alongside the building in the central southern part of the site and an "Electricity Sub-Station" in the southeast. There has been significant industrial development in the close surrounding area during this time period. On the northern side of "Meadow Road" are "Engineering Works" and a "Builders Yard". Also within 100m north is a "Scrap Metal Yard" and "coal yard". Approximately 125m north is a "joinery works". Within 100m to the northwest and west are several units on unidentified industrial estates including a "Chemical Works", "Engineering Works" and to the southwest "Typewriter Works".



4. REGULATORY ENQUIRIES

Details provided by general searches of accessible databases of Local Authority (LA), BGS, Environment Agency (EA) and Statutory Authorities' records, together with commercial archives (Groundsure Report - Appendix A), have been reviewed to determine potentially contaminative activities. Salient details are presented in the table below:

Integrated Pollution Control (IPC) and Integrated Pollution Prevention and Control (IPPC) Process Authorisations, Parts A and B (legislation governing certain industrial activities and their impact on the environment)	One Part A(1)/IPPC Authorised Activity is recorded within 500m of the site relating to use of organic chemicals (hydrocarbons) 352m west at Kingfisher Colours Ltd.
Water Industry Referrals (potentially harmful discharges to public sewers)	One Water Industry Referral is identified within 500m of the site. This is 465m west (E. Hillier & Son (Holdings) Ltd).
List 1/2 Dangerous Substances Inventory Sites	One former List 2 Dangerous Substance Site is recorded within 500m of the site relating to Unimet Enamellers Ltd 355m west for "release of Chromium into the River Kennet".
Records of Part A(2) and Part B Activities and Enforcements	Six Part A(2) or Part B activities or enforcements are recorded within 500m of the site. The closest is 73m west (Rivermead Accident Repair Centre) for "respraying of road vehicles".
Radioactive Substances Act, 1993	No Radioactive Substance Authorisations are registered within 500m of the site.
Planning Hazardous Substance Consents/Enforcements	No Planning Hazardous Substance Consents or enforcements are recorded within 500m of the site.
COMAH/NIHHS Sites (Dangerous or Hazardous Sites)	No COMAH/NIHHS sites are recorded within 500m of the site.
EA Recorded Pollution Incidents (National Incident Recording System, List 1 & 2)	Ten Environment Agency Recorded Pollution incidents are recorded within 500m of the site. The closest is 305m east relating to a "diesel spillage" in 2002.
Part IIA EPA 1990 (sites determined as Contaminated Land)	One Contaminated Land Register (under the Environment Protection Act (EPA, 1990) Part IIa) entry is recorded within 500m of the site relating to "George Street Allotments" 431m southwest and elevated concentrations of Benzo(a)pyrene in soil.



Landfill and other Waste Sites EA landfill data EA historic landfills BGS/DoE non-operational landfill sites Local Authority landfill sites Waste treatment, transfer or disposal sites EA licensed waste sites	One Environment Agency historic landfill site is present within 500m of the site. This is 286m north and was used for disposal of household, commercial, sludge and liquid wastes. Two waste treatment, transfer and disposal sites, or Environment Agency Licensed waste sites are recorded within 500m of the site. The closest is a "Scrapyard" 60m north.
Potentially Contaminative Activities (list of commercial/industrial premises close to site)	Sixty potentially contaminative industrial sites are recorded within 250m of the site; the closest being the on-site premises and electricity sub-station. The majority of the other records are for sub-stations and vehicle repair garages. Three fuel stations are recorded within 500m of the site. The closest is an obsolete record for the site named as "BRS Southern".
Designated Environmentally Sensitive Sites	The site recorded as being within a Nitrate Vulnerable Zone. There are no other environmentally sensitive sites within 500m.

4.1 Environment Agency

The Environment Agency (EA) was not contacted as part of this exercise.

4.2 Local Authority

Reading Borough Council was not contacted as part of this exercise.



5. ENVIRONMENTAL SENSITIVITY ASSESSMENT

5.1 Conceptual Model

A conceptual model is a testable representation of environmental processes on a site and its vicinity. Its purpose is to identify potential contaminants, pathways and receptors with a view to identifying (initially) potential and (eventually) significant pollutant linkages.

5.1.1 Potential Sources of Contamination

Major potential sources of contamination identified at the site are outlined below:

- Potential contamination from unknown constituents of Made Ground associated with construction/demolition of existing and previous structures on the site. These may include probable Asbestos Containing Materials (pACMs);
- Contaminants for historical printing related processes are likely to include use of acids (chromic, sulphuric and phosphoric) in preparation of printing plates, organic solvents for cleaning and degreasing, inorganic or organometallic pigments (possibly containing lead, cadmium or copper) and adhesives for book manufacture;
- Drum storage of hydrocarbons;
- Diesel storage tank in the southern part of the site;
- Fuel/oil spillages from vehicles on site;
- Probable use of ACMs in the fabric of the existing main building and sub-station on site;
- Electricity sub-station on southern boundary. Older sub-stations can represent a potential source of Polychlorinated Bi-phenyls (PCBs) present within di-electric fluids/oils, prior to their use being prohibited by the 1980s;



- Several off-site potential contaminant sources including current and historical industrial land uses and the railway to the south.

6.1.2 Potential Pathways of Contamination

The mechanisms or routes by which potential contaminants identified may be brought into contact with the potential receptors may include:

- Dermal contact / Ingestion / Inhalation with / of soils, dusts or liquids;
- Indirect ingestion of contaminated soil on vegetables or vegetables grown in contaminated soils;
- Migration of airborne dust/fibres (including airborne particulates from the railway or asbestos fibres from on/off site sources);
- Migration of aqueous phase contamination via made ground and permeable natural strata. The Langley Silt Member may represent an aquitard in preventing mobile contaminants from impacting on the underlying principle aquifer if present and of a cohesive low permeability nature;
- Chemical attack via direct contact with soils/groundwater;
- Migration of gaseous phase contamination via made ground and soils;
- Migration of aqueous phase contamination via the underlying groundwater.

Some of the pathways listed above may currently operate, for example surface run-off following rainfall. Pathways may be modified or exacerbated by disturbance of the site.

6.1.3 Potential Receptors of Contamination

Potential targets or receptors of contamination associated with the existing site may include:



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- Construction workers and end-users of the site;
 - Neighbouring existing buildings/occupants;
 - Groundwater (Principal Aquifer);
 - Proposed building structures and services;
 - Landscaping, gardens and plants.

6.1.4 Textual representation of Conceptual Model

A general representation of the potential sources, potential receptors and the likely exposure pathways by which receptors might reasonably come in contact with potential contaminants of concern is presented in the table below. This was produced using the information detailed above in general accordance with DEFRA/EA publication CLR11 (2004).



SOURCE		PATHWAY		RECEPTOR	JUSTIFICATION	POSSIBLE MITIGATION MEASURES
Contaminated Soil/ Made Ground	→	Dermal exposure Inhalation of soil dust Inhalation of soil vapour Direct ingestion of soil Ingestion of vegetables	→	Construction workers and future site users	The presence of historical Made Ground and contaminated soils from past land use beneath the site cannot be discounted particularly in the vicinity of the sub-station, areas of former/existing structures, tank/drum storage or any areas of former storage of chemicals associated with the printing works.	The use of appropriate PPE can limit the risk to construction workers. The risk to future users, if present can be controlled by appropriate remedial measures i.e. material removal, cover layers in landscaped areas and membranes beneath structures.
	→	Airborne migration of soil dust/fibres	→	On-site and neighbouring existing buildings/occupants	Groundworks may expose potentially contaminated material, therefore a possible pollutant linkage will exist where soils are exposed. Given site observations, presence of ACMs in Made Ground and building fabric is considered possible.	Risk will be dependent on the soil contaminant concentrations. In dry conditions dampening down of exposed materials could reduce dust generation and risk to off-site receptors. It is recommended that an asbestos survey is undertaken prior to demolition of existing buildings.
	→	Leaching through soils as vertical flow	→	Groundwater (Principal Aquifer)	Superficial deposits are classified as Unproductive strata and may retard vertical migration of leachable/liquid contaminants. Chalk strata classified as Principal aquifer however depth to groundwater unknown.	The risk to receptors will be dependent on the contaminant concentrations of the shallow soils and/or the presence of shallow groundwater. If risk identified remedial measures may need to be considered i.e. possible removal of leachable contaminant sources or hydrocarbon impacted soils for example.
	→	Chemical Attack via direct contact	→	Proposed building foundations/water supply pipes	Potentially deleterious Made Ground from past activities may be present on site. Natural strata are not considered to present a significant risk to buried structures or services.	Use of concrete designed in accordance with BRE Special Digest 1 (2005) "Concrete in aggressive ground" or water supply pipes in accordance with current guidance.
Flammable/toxic gases and vapours from on-site or off-site sources	→	Migration of soil vapour and gases through unsaturated zone of granular soils to indoor/outdoor air	→	Future site users and buildings	Although identified as a a low risk, as significant depths of Made Ground with the potential to generate gas is unlikely at the site there is a recorded landfill site within 300m north and possible localised fuel spillages from the tank or vehicles cannot be discounted entirely.	The Risk is dependent upon the extent and nature of Made Ground and presence of relic features. Removal of source material and active/passive venting may be suitable mitigation measures.
Contaminated Shallow/ deep groundwater	→	Vertical/lateral migration through soils to underlying water-bearing strata /possible underlying culverted drains	→	Shallow groundwater /surface water	Leaching of soil contamination, and possible presence of liquid contaminants may pose a risk to groundwater/surface water.	Risk to the aquifer and surface water depends on the composition and/or degree of contamination within shallow soils. Mitigation may involve possible removal of leachable contaminant sources for example.



6.2 Site Specific Sensitivity Analysis

A summary of potential risks associated with the plausible pollutant linkages identified during the site reconnaissance and the desk study review is provided in the table below.

ENVIRONMENTAL HAZARDS		
In summary, possible sources include: • Made Ground from demolition materials/stockpiled materials (incl pACMs). • Electricity sub-station. • Probable ACMs in on site buildings. • Localised fuel/oil spills from tank and drum hydrocarbon storage on site and from delivery vehicles using the site and weighbridge. • Historical usage as a printing works including possible use and storage of acids, solvents, adhesives and inks/pigments. • Multiple off-site sources within 250m including engineering works, vehicle maintenance garages, railway lines, chemical works and abattoirs.		
ENVIRONMENTAL RISKS		
POTENTIAL PATHWAYS	RISK CATEGORY	COMMENTS
Contamination from on-site sources	MEDIUM	Possible contaminants from Made Ground associated with previous and existing construction/demolition, and from potentially hazardous chemicals/fuels used on site in periods of previous industrial usage.
Contaminant migration off Site	LOW	The underlying chalk strata have a very high permeability suggesting potential for migration of liquid/leachable contaminants, however the presence of overlying low permeability superficial deposits which are unlikely to be water-bearing would suggest migration potential is low.
Contamination from off-site sources	LOW/MEDIUM	Low permeability superficial deposits likely to minimise potential for migration. Airborne migration pathway may still be valid.
Other Environmental Issues	MEDIUM	There is the high potential for ACMs in existing buildings it is recommended that a specialist survey is undertaken for confirmation.

Qualitative Risk Assessment



POTENTIAL RECEPTORS	RISK CATEGORY	COMMENTS
Human Health	MEDIUM	Potential inhalation, ingestion and dermal contact to contractors on site during maintenance, demolition and construction works, particularly in any areas of Made Ground and industrial usage. Gases/vapours and shallow soil may pose a residual risk to site occupiers, however, PPE provisions to workers will limit exposure potential.
Soils	LOW-MEDIUM	Possible presence of contaminants within Made Ground and shallow soils anticipated at the site, possible leaching of contaminants from Made Ground to shallow superficial deposits unlikely given extensive hardstanding/building cover.
Groundwater	MEDIUM	Unproductive Strata recorded in superficial geology however the bedrock geology is classed as a Principal Aquifer and there is a groundwater abstraction well on site and on the neighbouring property to the north. Soil contamination (if present) may pose a risk to the Principal Aquifer.
Surface Water	LOW-MEDIUM	Low permeability superficial deposits may retard lateral transit of contaminants to surface water, the presence of culverted surface watercourses beneath the site cannot be discounted.
Buildings & Foundations	LOW	Negligible/very low hazards have been identified by BGS relating to landslides, collapsible deposits, running sands, shrink-swell clays, compressible deposits and ground dissolution of soluble rocks, The Health Protection Agency indicates that the subject site is located within an area where less than 1% of homes are above the action level for radon. Radon protection measures are not considered necessary.
Fauna and Flora	LOW-MEDIUM	Extensive hardstanding cover on site means that there is no existing vegetation other than on eastern and western boundary. Potential for phytotoxic contaminants cannot be discounted.
CURRENT OVERALL RISK		MEDIUM

Qualitative Risk Assessment (continued)

6.3 General Environmental Liability

Environmental liabilities from a contaminated site can have a significant effect on its value. This may be due to remediation costs involved, and the possibility of prosecution as



a result of a pollution incident or third-party impact. Thus, resulting in an increase in development costs, where required for planning consent or Building Control. Current legislation imposes these liabilities on both polluters and the owners and/or occupiers of historically contaminated land.

Based on the past use of the site, there is a MEDIUM potential for environmental liability related to ground contamination for the proposed residential end-use.



7. CONCLUSIONS

Based on the findings of this Desk Study, the following conclusions have been determined:

- The site is underlain by superficial deposits of the Langley Silt Member. In turn, these are underlain by solid strata of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and the Newhaven Chalk Formation
- The Health Protection Agency indicates that the subject site is located within an area where less than 1% of homes are above the Action Level for radon. No radon protective measures are considered necessary by the BRE in the construction of new dwellings or extensions.
- The underlying hydrogeology has been identified as unproductive strata for the superficial deposits and a Principal Aquifer for the undifferentiated Chalk Formation strata. There are former and existing groundwater abstractions (potable supply) located on the site and adjoining premises.
- One surface water feature is recorded within 250m of the site some 150m south. No Environment Agency GQA Classifications for chemical quality are located within 500m of the site.
- The earliest map extract (1877) shows the site as undeveloped and crossed by drainage ditches. From 1912 onwards the site was occupied by a Printing Works and more recently used as a warehouse for storage of film, theatre and television props and equipment.
- The sensitivity assessment, discussed in Section 6, gives the site a Low risk rating to buildings and foundations, LOW-MEDIUM rating for soils, surface water and fauna &



flora and MEDIUM rating for human health and groundwater. An overall MEDIUM Risk is applicable to the site.

Current guidance sets out risk assessment on a contamination-pathway-target basis, in accordance with Part IIA of the Environmental Protection Act 1990. In this respect, if remediation were required, it would need to take the form of removing one or more pollutant “linkages” or the source of pollution (i.e. contaminated soil or water).

Based on the past use of the site, there is a MEDIUM potential for environmental liability related to ground contamination for the proposed residential end-use. At this site, the main potential contamination relates to sources identified during the Desk Study including historical use as a printing works, fuel storage and the use of asbestos materials in building construction.



8. RECOMMENDATIONS

Due to the possibility of localised on-site contamination from the identified sources, we would recommend that a geo-environmental ground investigation is undertaken in general accordance with CLR11, BS5930 (2015) and BS10175:2011+A1 (2013) to assess distribution of Made Ground and contaminant concentrations. Given the extensive cover of buildings and hardstanding and current occupation and usage of the premises, it is recommended that this should comprise both shallow and deeper investigation. Shallow dynamic continuous sampler boreholes into the Made Ground and underlying superficial deposits to confirm thickness and composition and deeper boreholes into the chalk aquifer to allow for monitoring wells to assess any potential adverse impact on the underlying chalk aquifer. The investigation should include the targeting of the locations of former structures, the diesel tank and electricity sub-station.

Any qualitative risk assessment included in this report considers the significance of any contamination based on generic standards for the stated end use, together with an assessment of the presence of a pollutant linkage between sources, pathways and receptors. A qualitative assessment of low or insignificant risk does not imply that elevated concentrations of various determinands are not present compared to background or 'green field' conditions. A different assessment may apply if a different end use were proposed. It should also be acknowledged that institutional bodies may consider the presence of 'contaminants' in other ways regardless of whether an apparent risk is present based on defined sources, pathways and receptors.

GEOTECHNICAL ENGINEERING LIMITED



9. REFERENCES

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mapapps.bgs.ac.uk/geologyofbritain/home.html.

British Standards Institution (2015): Code of practice for ground investigations. BS 5930:2015.

British Standards Institution (2010): Environmental Management – Environmental Assessment of Sites and Organisations (EASO). BS ISO 14015:2010.

British Standards Institution (2013): Code of practice for the investigation of potentially contaminated sites. BS 10175:2011+A1:2013.

Building Research Establishment (2015): Radon: guidance on protective measures for new dwellings. BRE Report BR211.

Department of Food and Rural Affairs (2012). Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance.

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European Commission (1991) Nitrates Directive. Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC).

GroundSure EnviroInsight, GeoInsight and MapInsight reports (2017): Groundsure Reports (Ref. CMAPS-AAC-611633-13562-290317).



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LOCATION PLAN

CLIENT THAMES PROPERTIES LTD
 SITE CARDIFF ROAD, READING
 SCALE Approximately 1:50,000

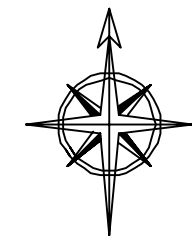
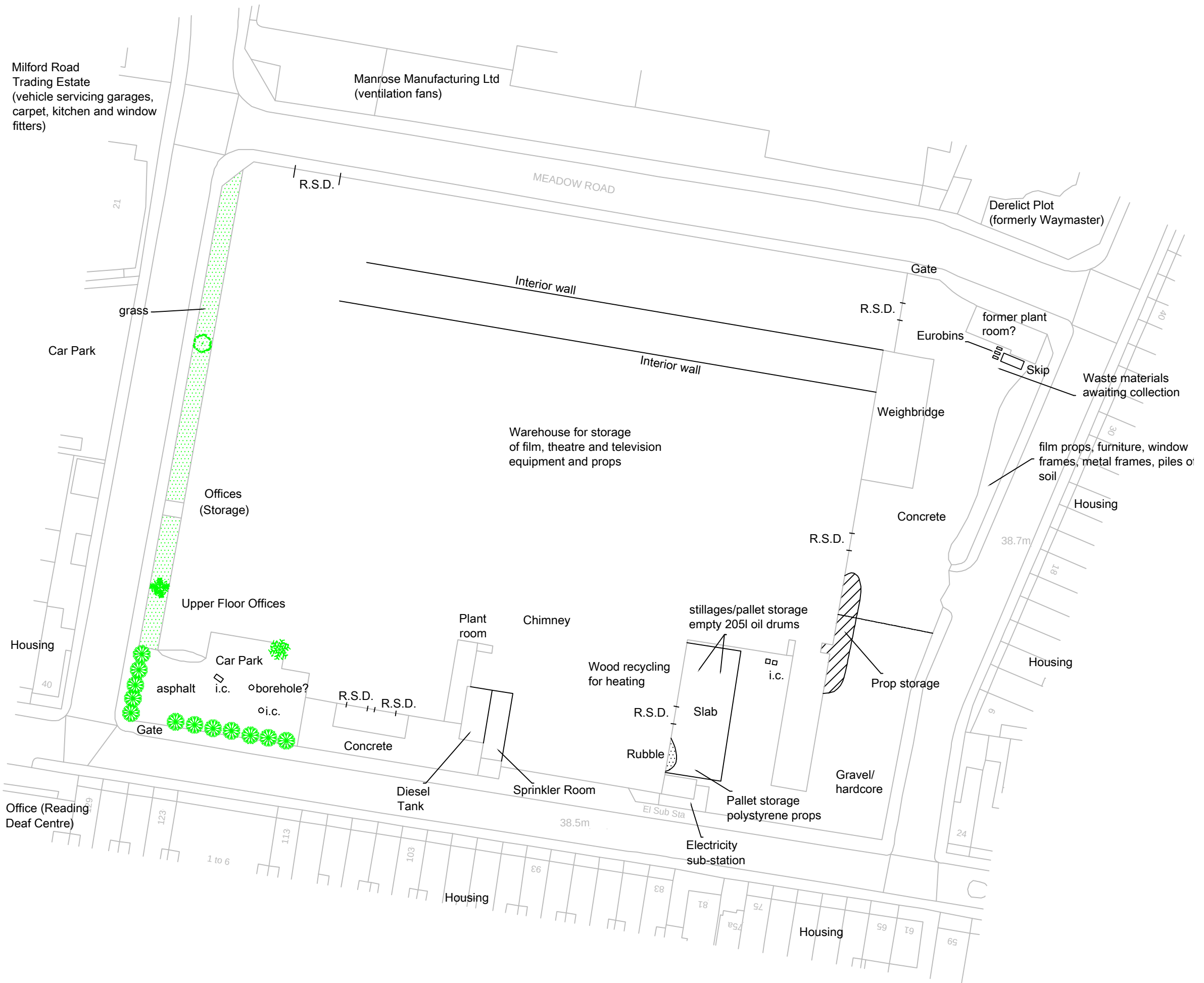
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CONTRACT

32933

FIGURE

1

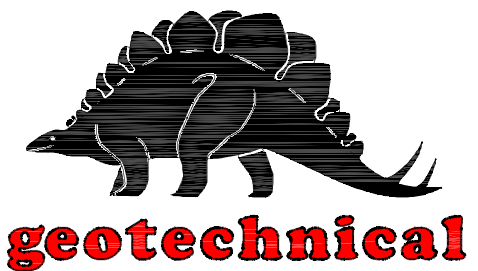


Key:

RSD = Roller Shutter Door
i.c. = Inspection Cover

Notes:

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Client:

THAMES PROPERTIES LTD

Project:

CARDIFF ROAD
READING

Title:

SITE WALKOVER PLAN

Drawn By:	GR	Checked By:	MM	Paper Size:	A3
Scale:	N.T.S.		Date:	APRIL 2017	
Contract:	32933			Figure:	2



APPENDIX A

GROUNDSURE REPORTS

Groundsure Geo Insight

Address: Cox and Wyman Ltd, Cardiff Road, Reading, RG1 8EX

Date: 29 Mar 2017

Reference: CMAPS-AAC-611633-13562-290317GEO

Client: CENTREMAPS



Aerial Photograph Capture date: 20-Apr-2015
Grid Reference: 470943,174108
Site Size: 1.31ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of faults within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and Faults

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?

Yes

2.3.3 Are there any records of faults within 500m of the study site boundary?

No

Section 3: Radon

3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

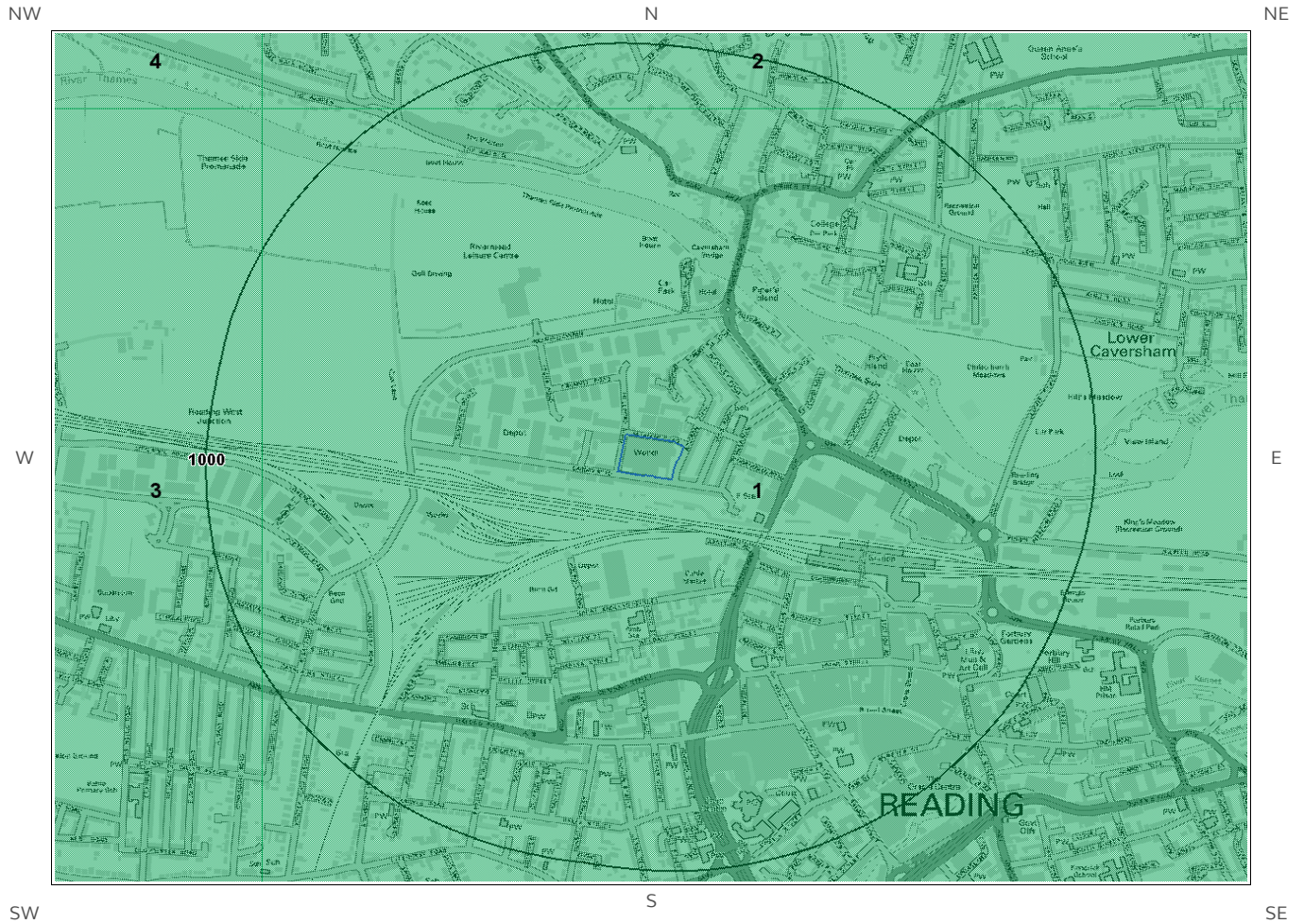
No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	2	2	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	2

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	2	1	1	0	4
5.4 Non-Coal Mining*	0	0	0	2	10
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	7

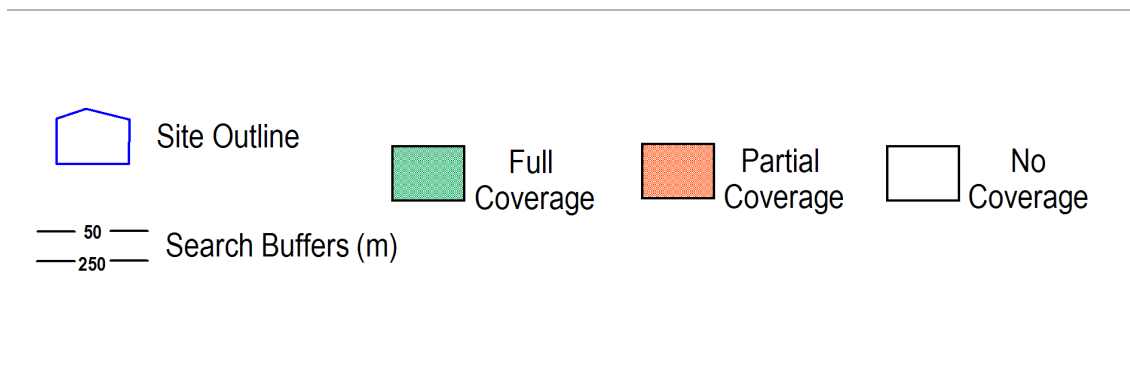
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Very Low				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Very Low				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Negligible				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	4	1	40		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	2	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	3	59	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	102	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	834.0	Some deposits are mapped	Full	Full	No coverage
3	864.0	Some deposits are mapped	Full	Full	No coverage
4	1215.0	Some deposits are mapped	Full	Full	No coverage

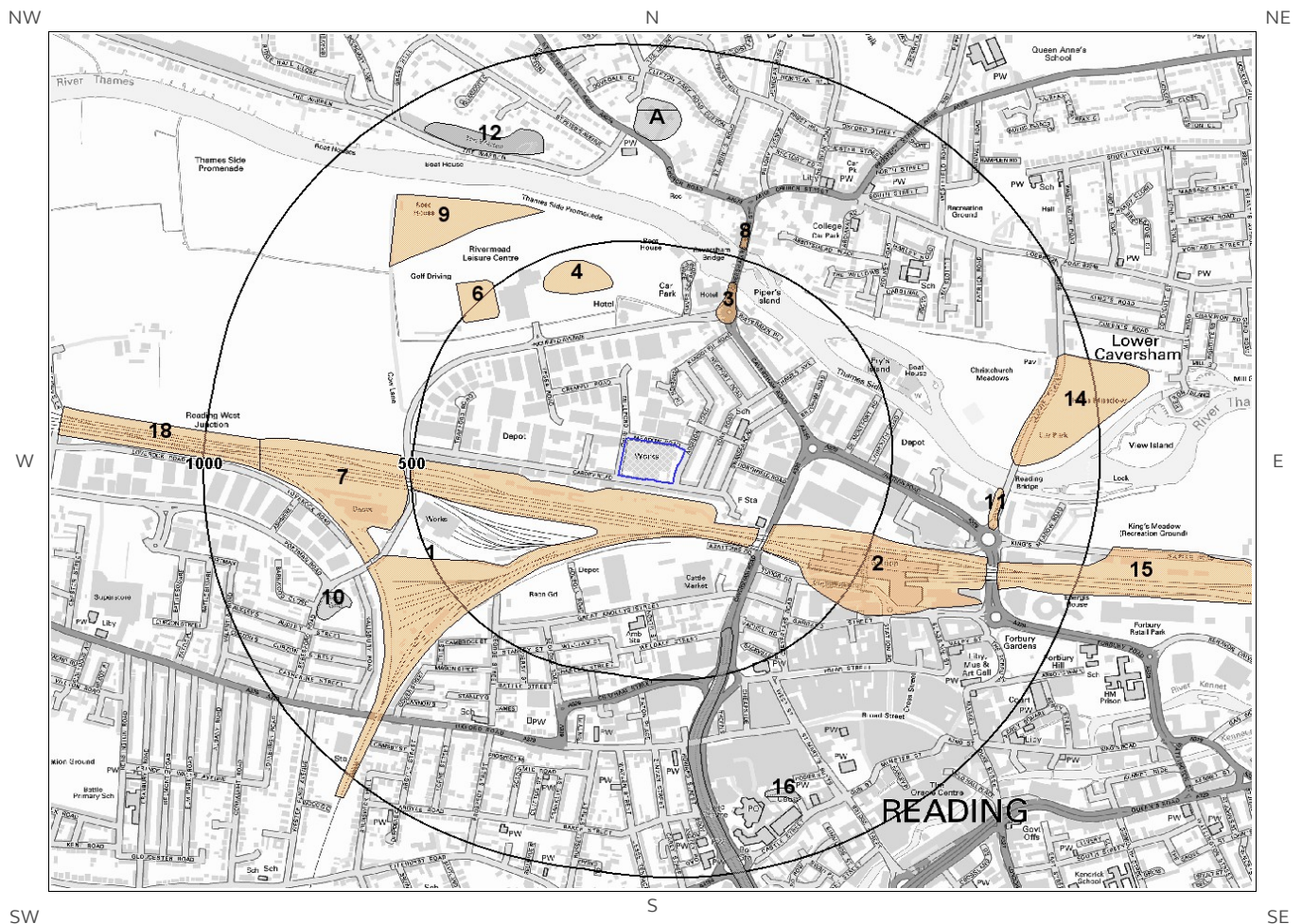
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

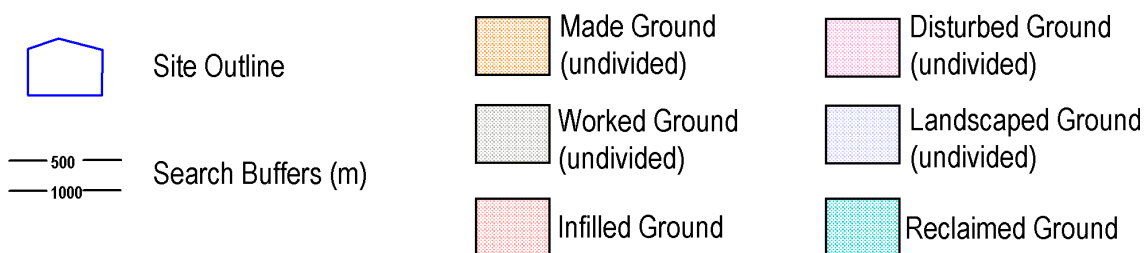
1 Geology (1:10,000 scale).

1.1 Artificial Ground Map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

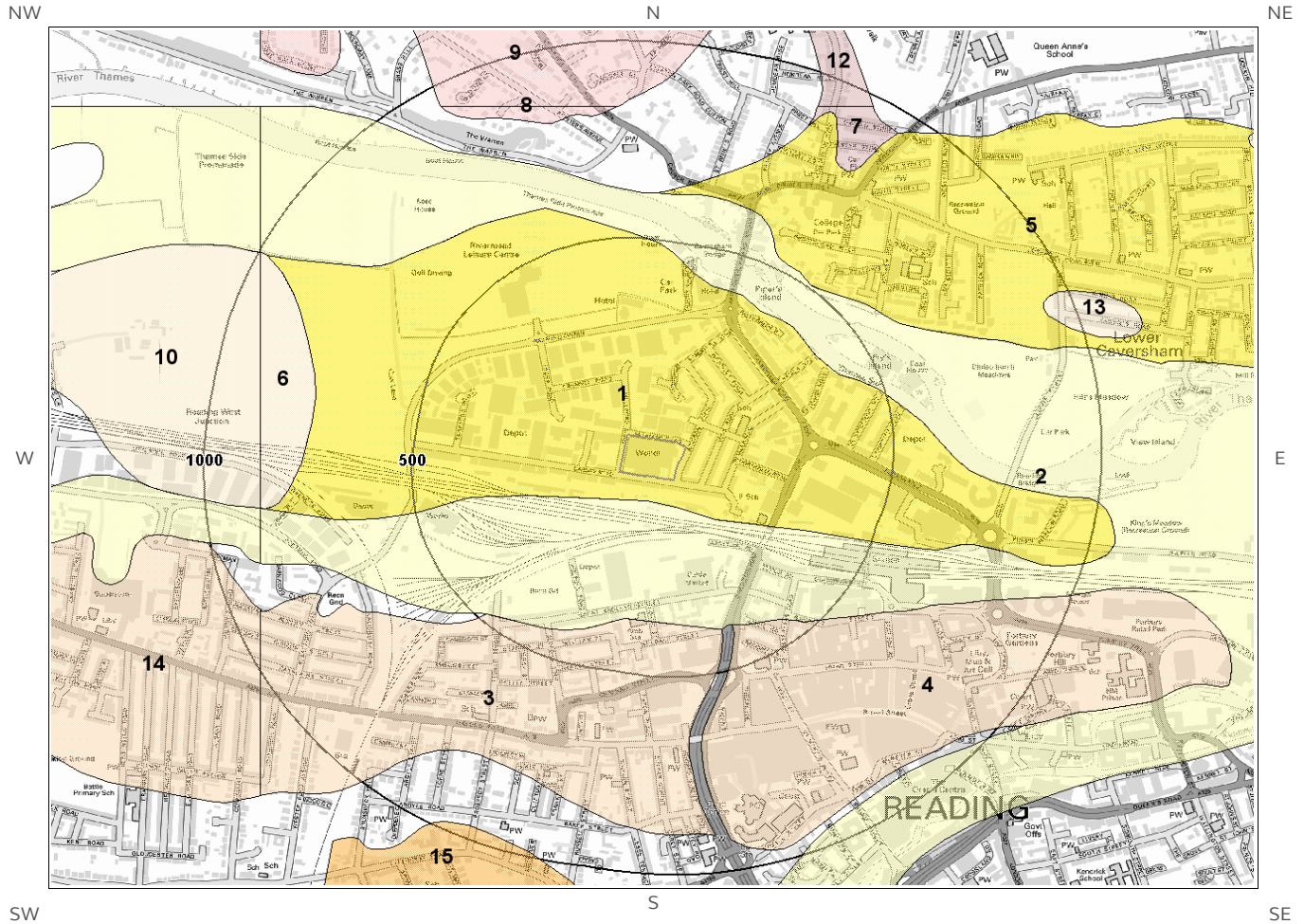
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

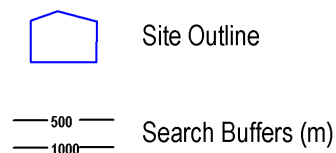
ID	Distance	Direction	LEX Code	Description	Rock Description
1	34.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	263.0	SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	333.0	N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	381.0	N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	388.0	S	WGR-VOID	Worked Ground (Undivided)	Void
6	438.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

1.2 Superficial Deposits and Landslips Map (1:10,000 scale)



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	LASI-XCZ	Langley Silt Member - Clay And Silt	Clay And Silt
2	61.0	S	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
3	361.0	S	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
4	391.0	S	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

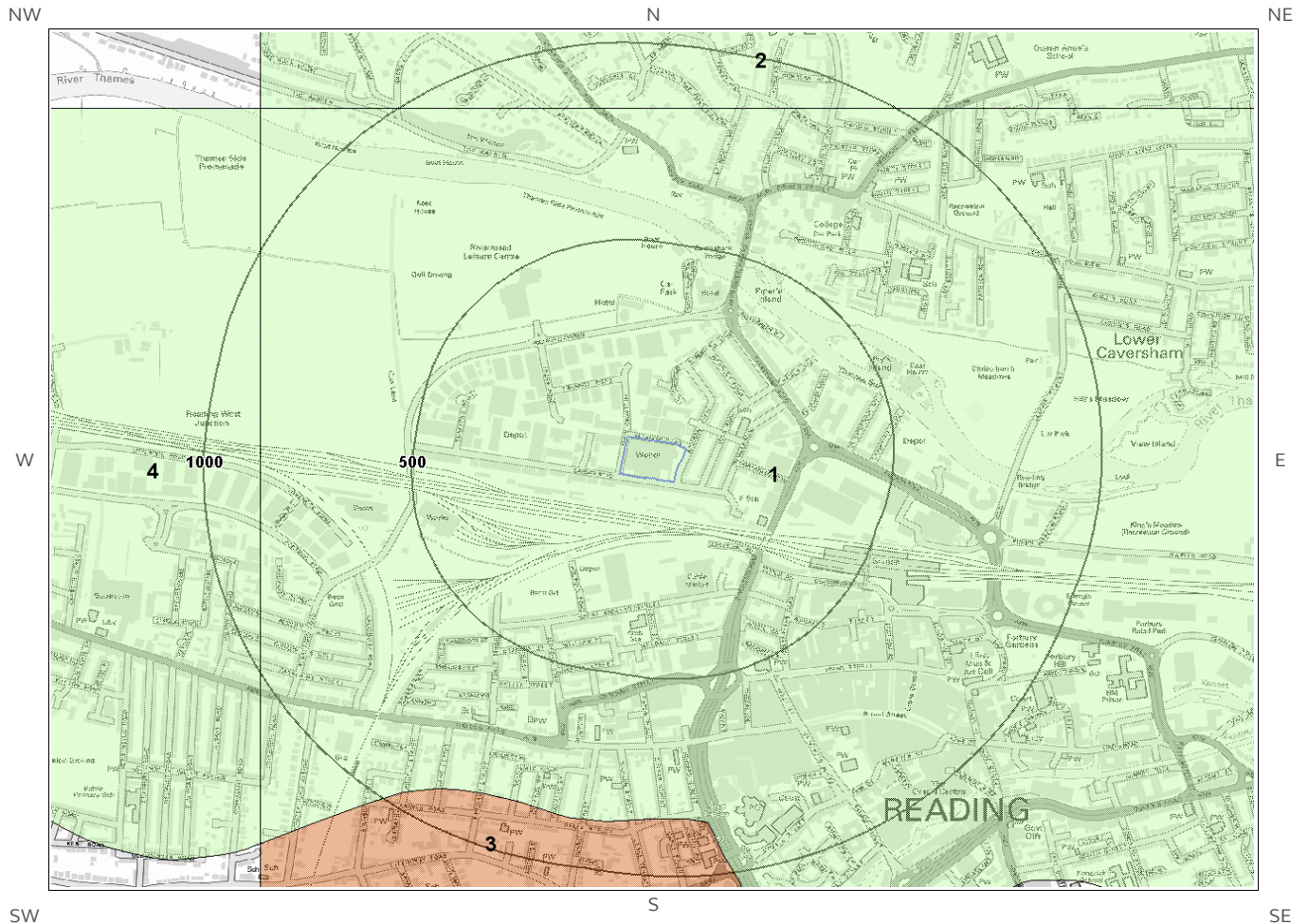
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and Faults Map (1:10,000 scale)

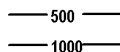


Bedrock and Faults Legend

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Site Outline



Search Buffers (m)

1.3 Bedrock and Faults

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	LSNCK-CHLK	Lewes Nodular Chalk Formation, Seaford Chalk Formation And Newhaven Chalk Formation (undifferentiated) - Chalk	Campanian Age - Turonian Age

1.3.2 Faults

Are there any records of Faults within 500m of the study site boundary at 1:10,000 scale? No

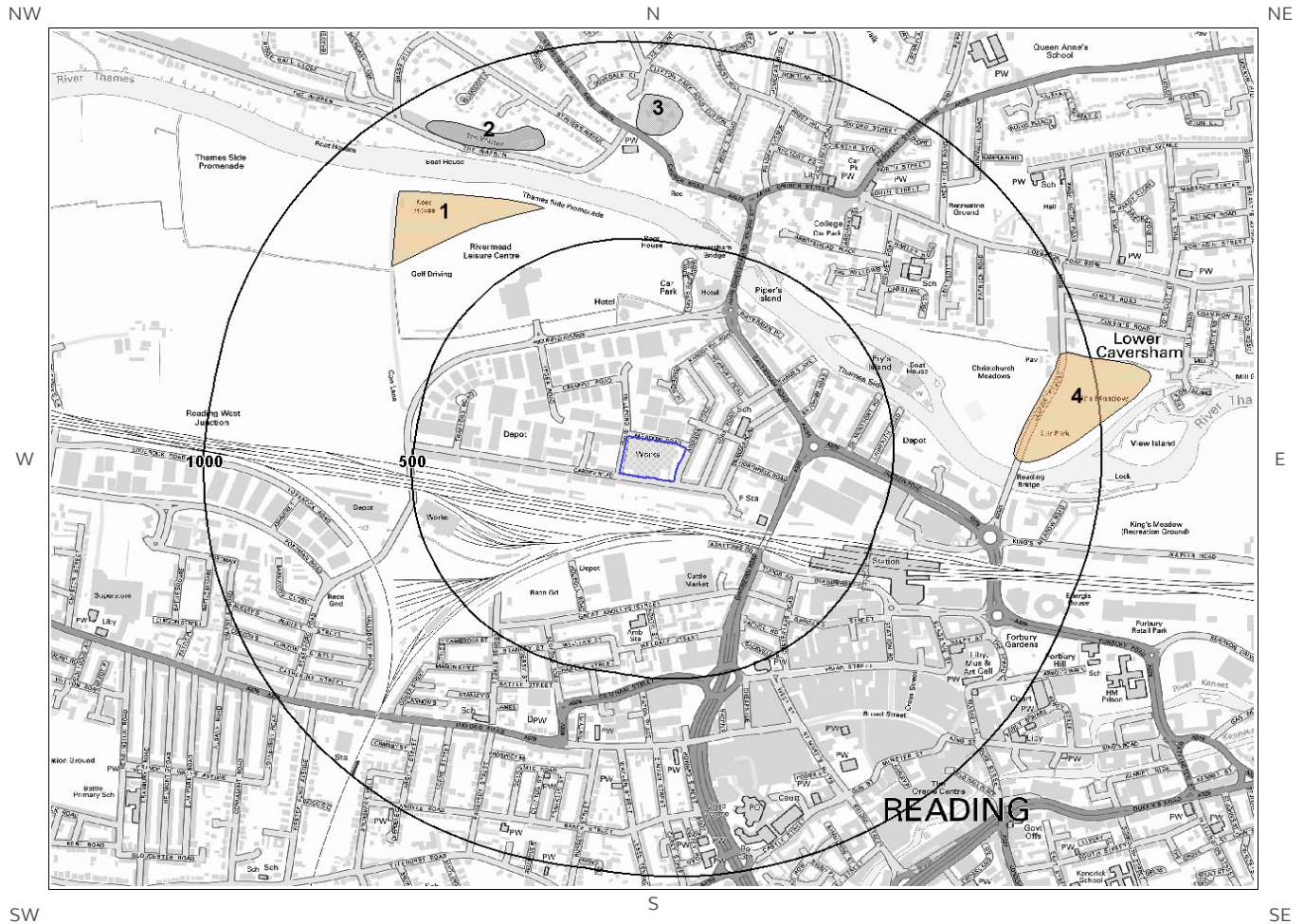
Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

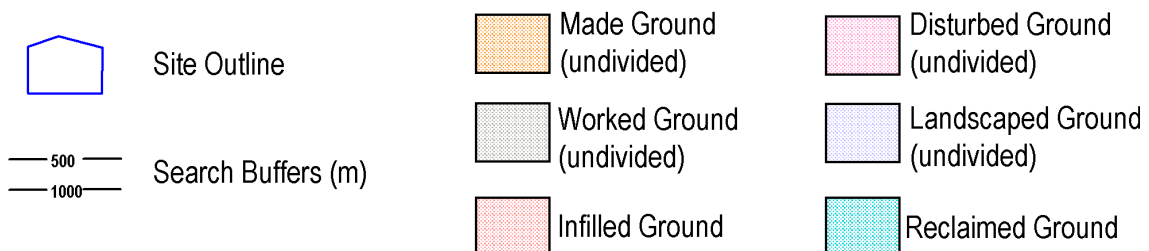
2 Geology 1:50,000 Scale

2.1 Artificial Ground Map



Ground Workings Legend

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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 268

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

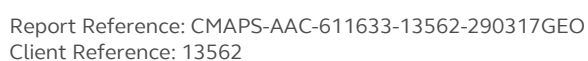
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

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2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
2	58.0	S	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	360.0	S	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
4	391.0	S	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Low	Very Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

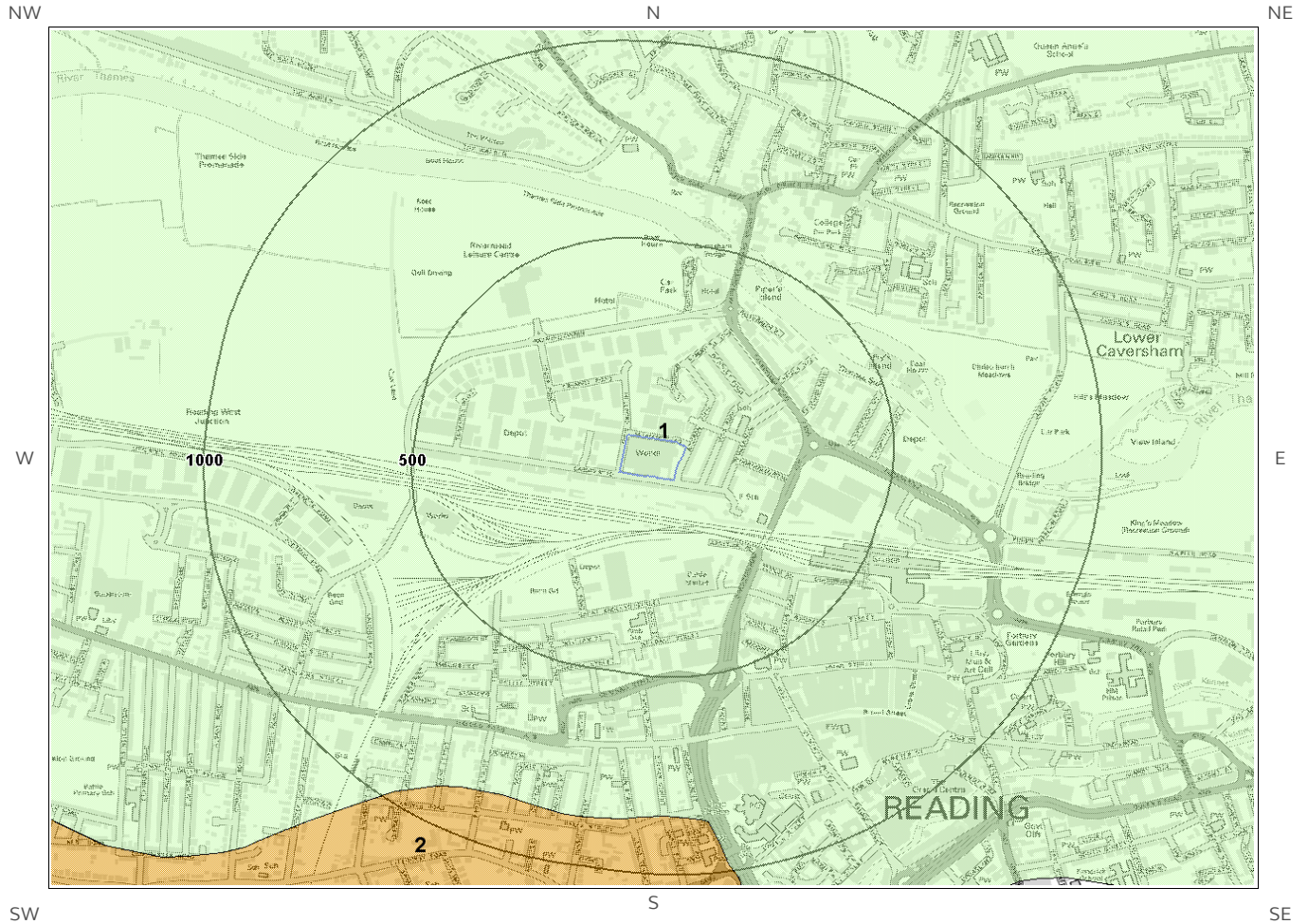
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and Faults Map (1:50,000 scale)

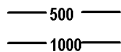


Ground Workings Legend

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Site Outline



Search Buffers (m)

2.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 268

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	SNCK-CHLK	SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	CONIACIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Very High	Very High

2.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

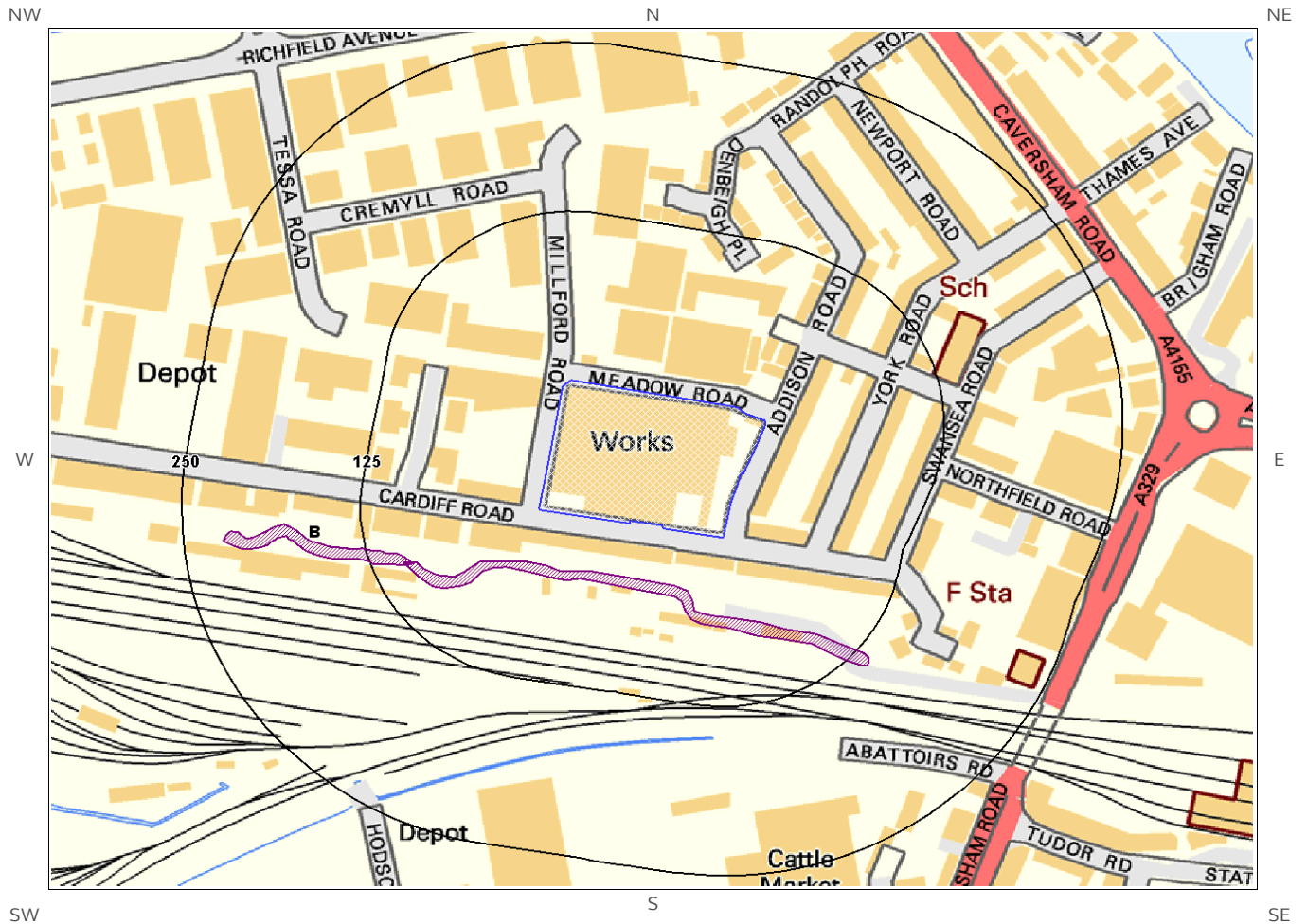
3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

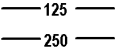
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings Map



Ground Workings Legend

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- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | Current Ground Workings |

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	39.0	S	470973 173994	Unspecified Ground Workings	1938
2A	39.0	S	470973 173994	Unspecified Ground Workings	1910
3B	97.0	SW	470709 174044	Unspecified Ground Workings	1938
4B	97.0	SW	470709 174044	Unspecified Ground Workings	1910

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

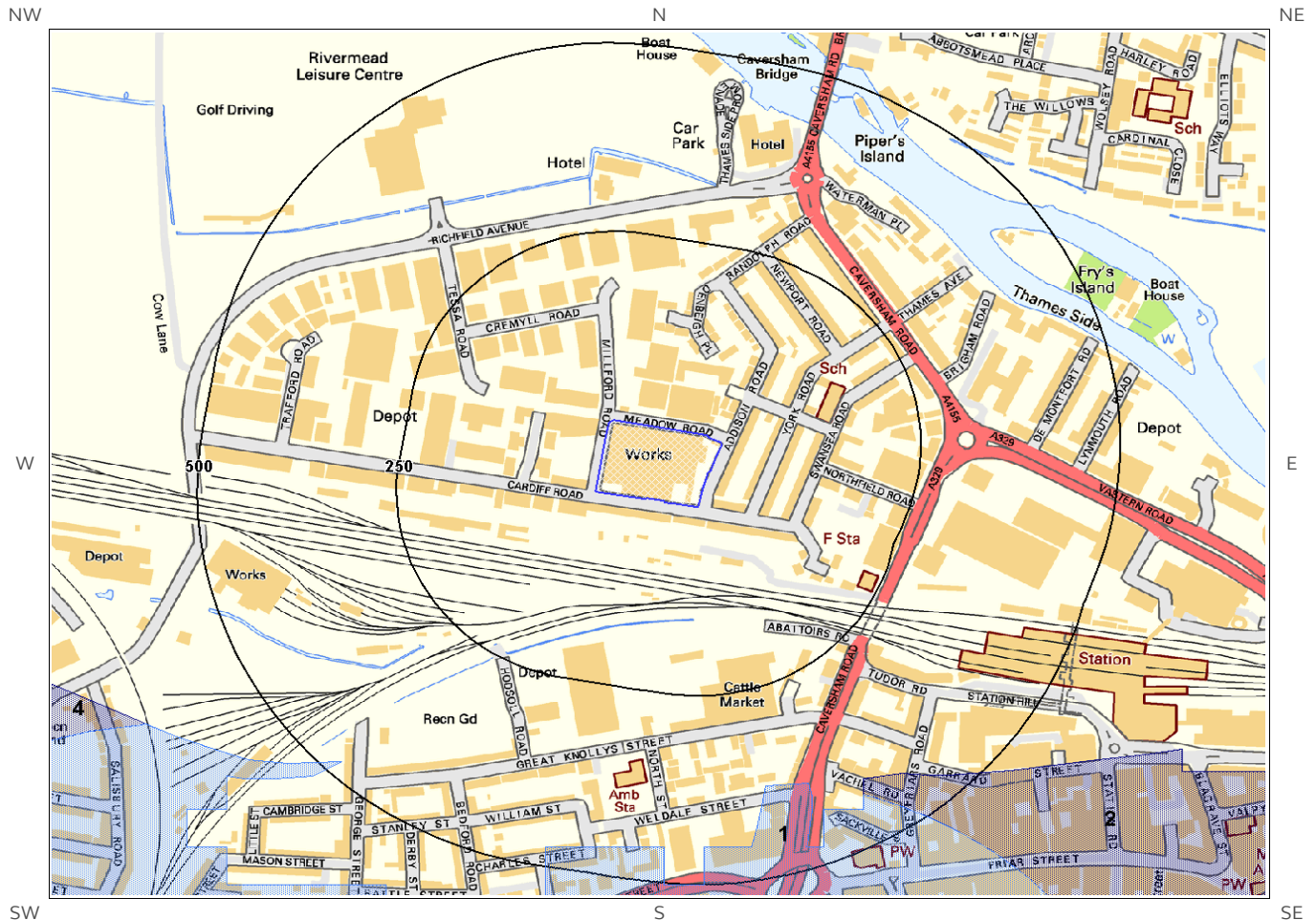
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	747.0	SW	470178 173774	Sand & Gravel	Battle Farm Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	818.0	N	470960 174980	Chalk	St Peter's Hill Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? Yes

The following information provided by JPB is not represented on mapping: Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	378.0	S	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
2	415.0	SE	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
Not shown	616.0	N	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
4	643.0	SW	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
Not shown	834.0	N	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
Not shown	894.0	W	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
Not shown	950.0	SW	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
Not shown	954.0	S	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
Not shown	965.0	S	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
Not shown	976.0	S	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
Not shown	988.0	S	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
Not shown	991.0	S	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? Yes

The following Natural Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
Not shown	659.0	S	471100 173400	Taplow Gravel	Chalk Group	Solution Pipe x 3
Not shown	824.0	SE	471500 173400	Taplow Gravel	Chalk Group	Solution Pipe x 3
Not shown	850.0	S	471010 173200	-	Chalk Group, Lambeth Group	Solution Widened Joint or Fissure x 3
Not shown	856.0	SE	471550 173400	Taplow Gravel	Chalk Group	Solution Pipe x 5
Not shown	905.0	SE	471500 173300	Taplow Gravel	Chalk Group	Solution Pipe x 1
Not shown	942.0	SE	471400 173200	Taplow Gravel	Chalk Group	Solution Pipe x 2
Not shown	990.0	S	470980 173060	-	Chalk Group, Lambeth Group	Solution Pipe x 1

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

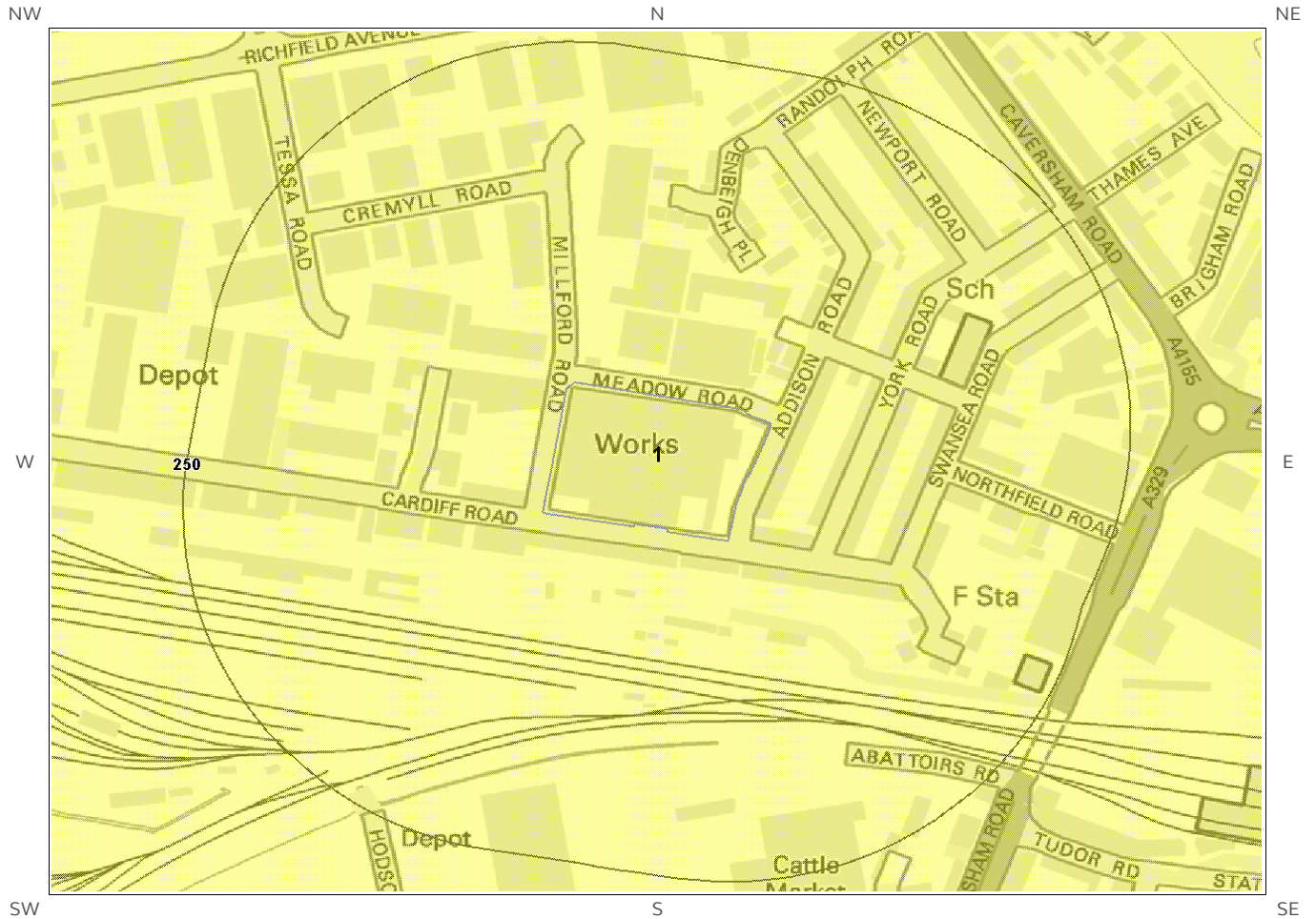
Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay Map

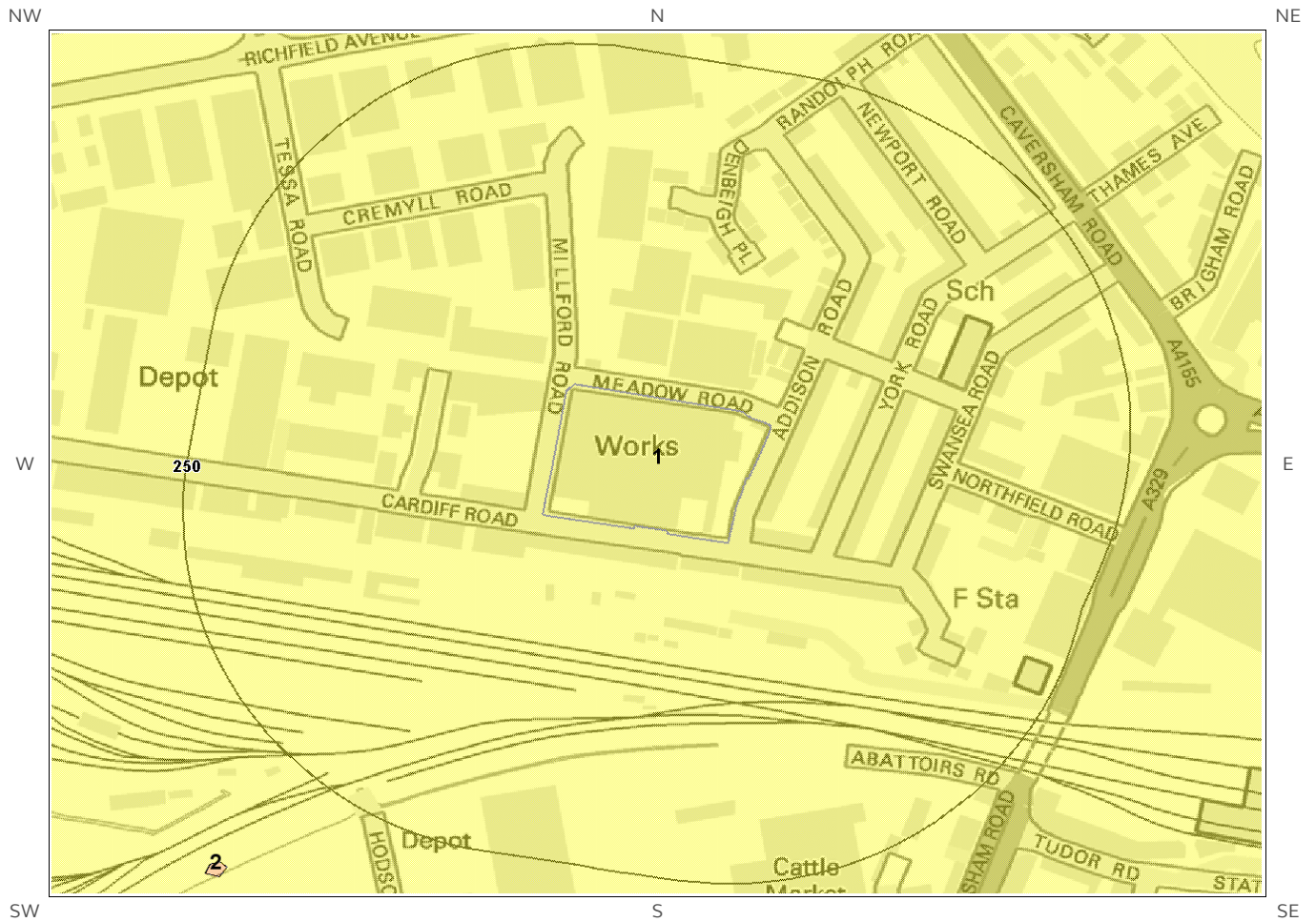


Shrink Swell Clay Legend

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6.2 Landslides Map

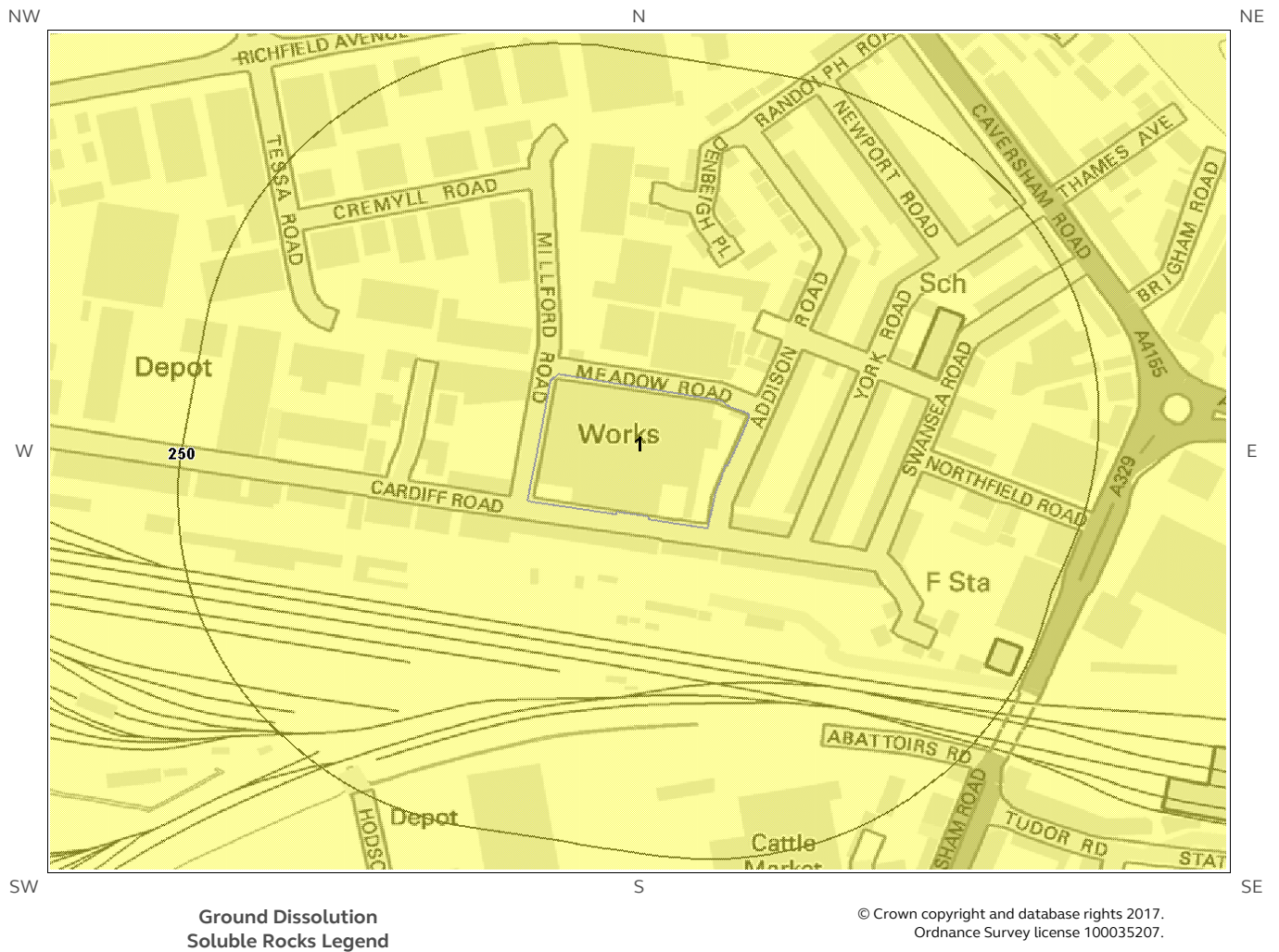


Landslides Legend

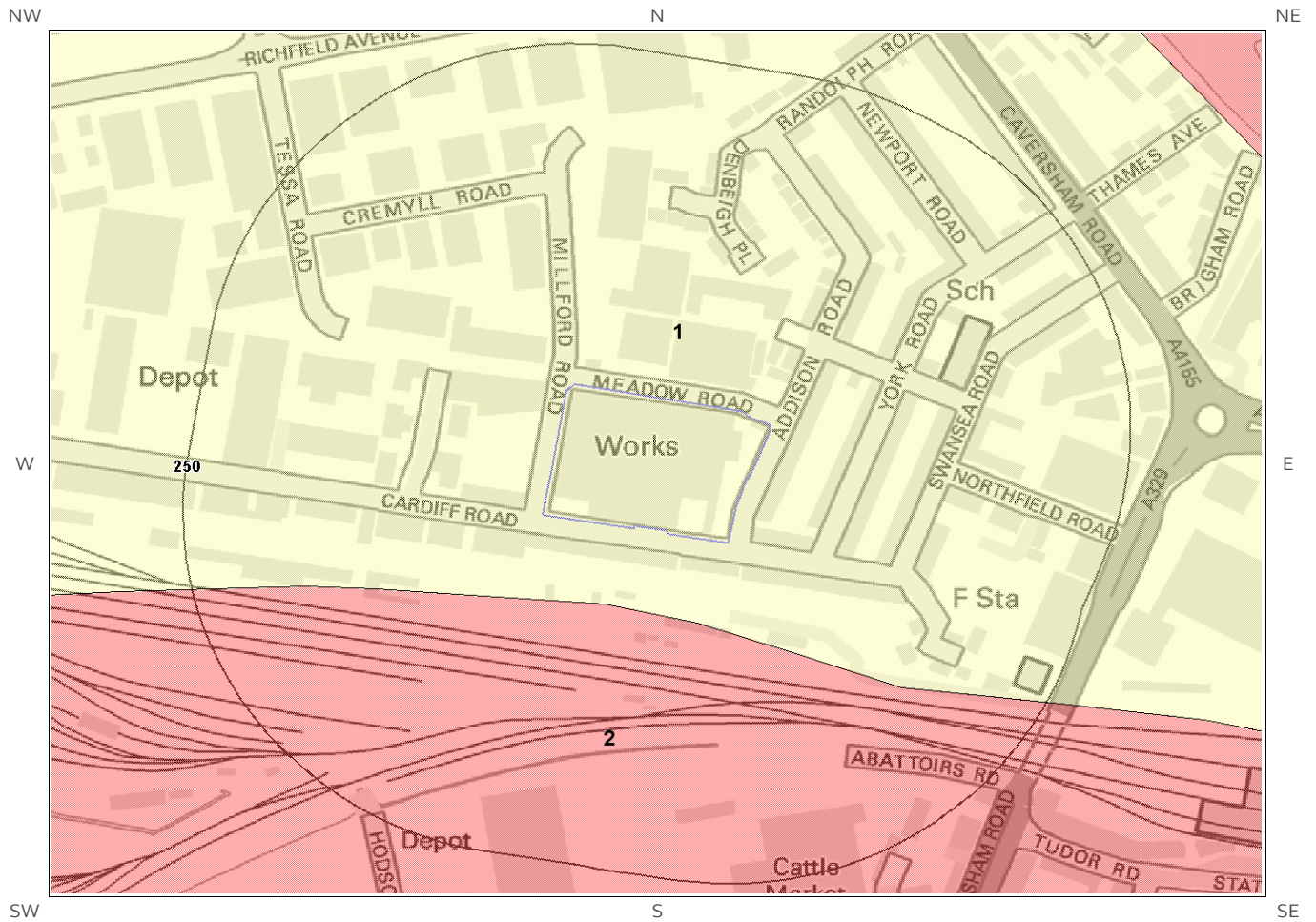
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6.3 Ground Dissolution of Soluble Rocks Map



6.4 Compressible Deposits Map

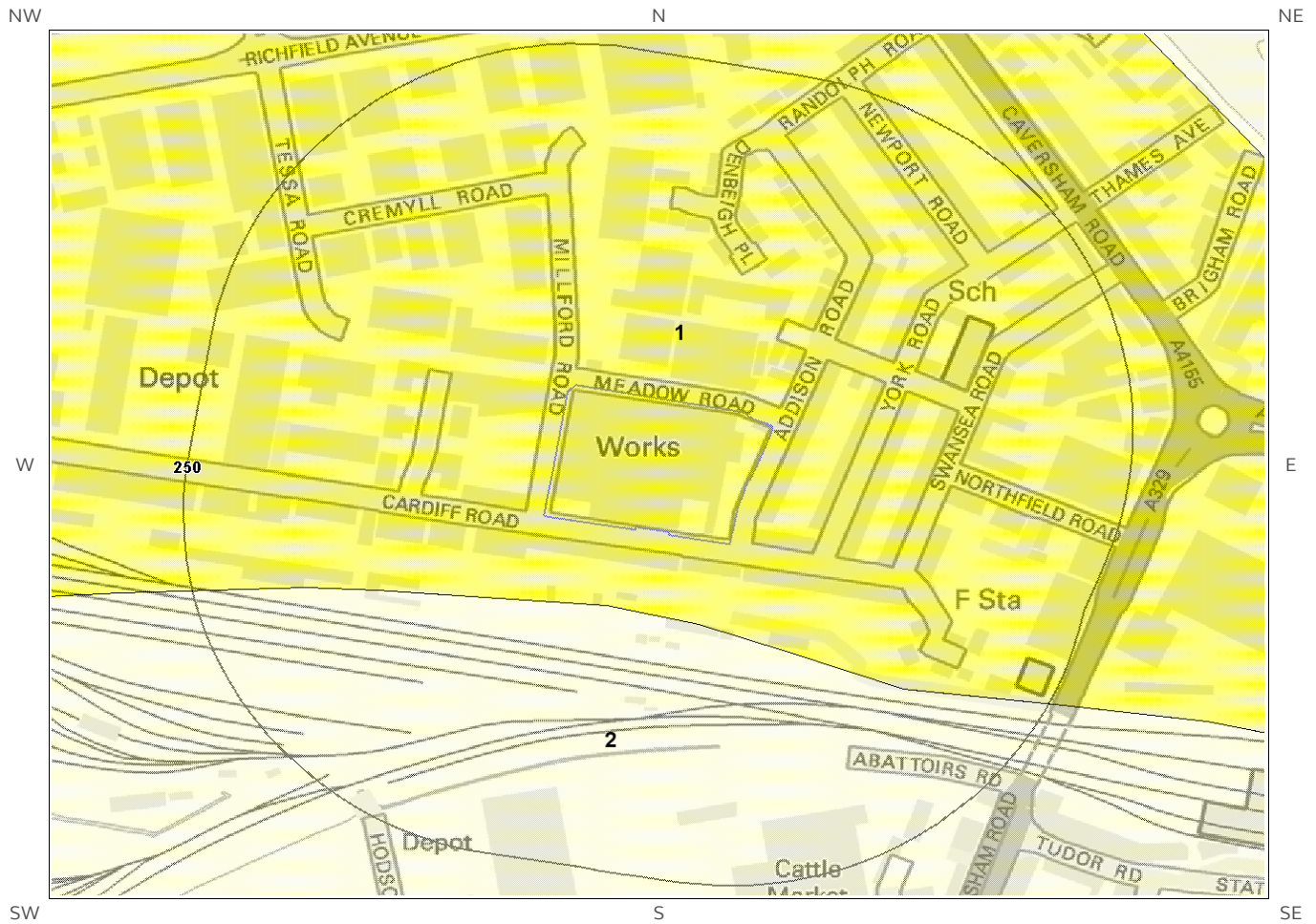


Compressible Deposits Legend

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6.5 Collapsible Deposits Map

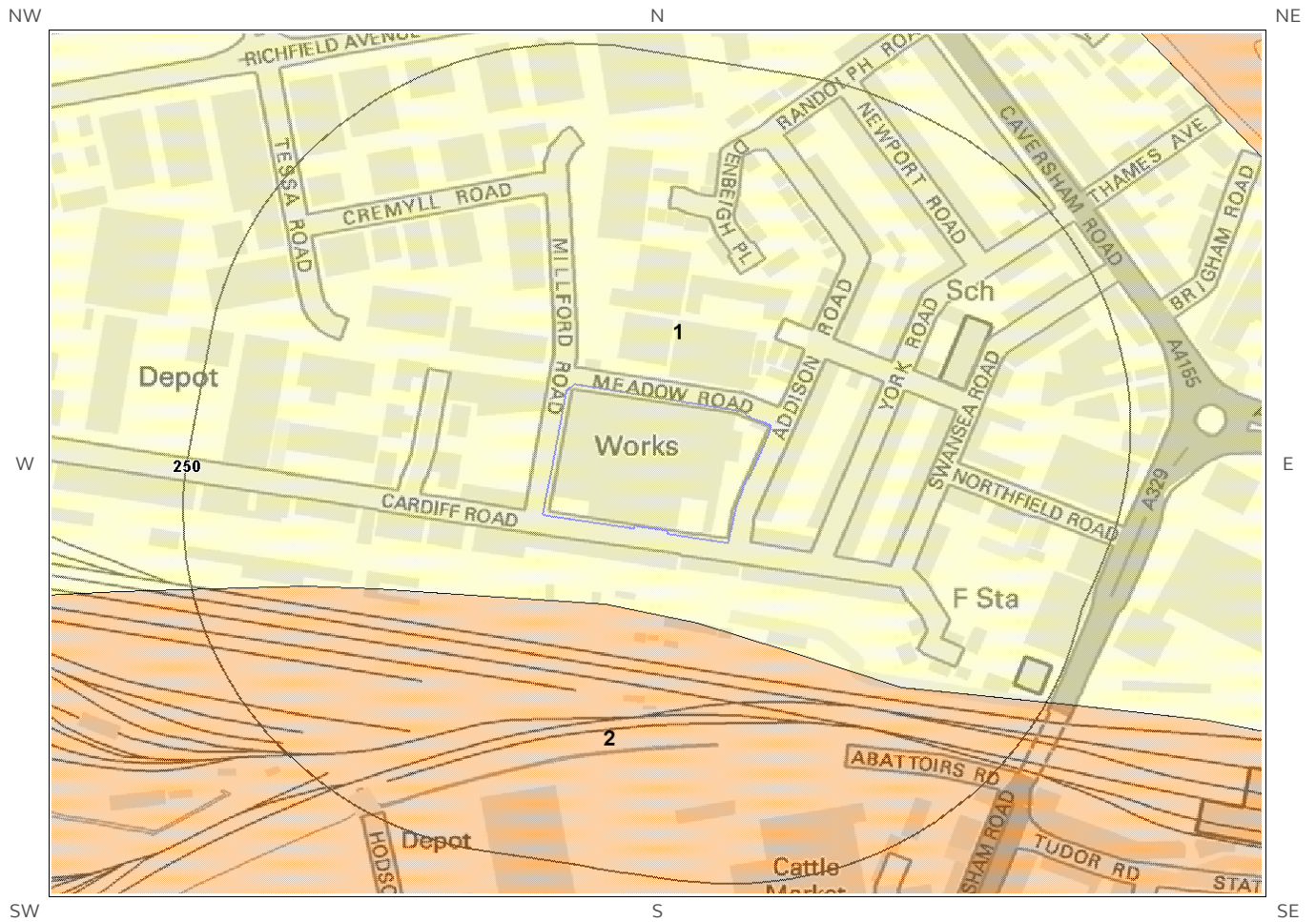


Collapsible Deposits Legend

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6.6 Running Sand Map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? **Very Low**

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

* This includes an automatically generated 50m buffer zone around the site

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

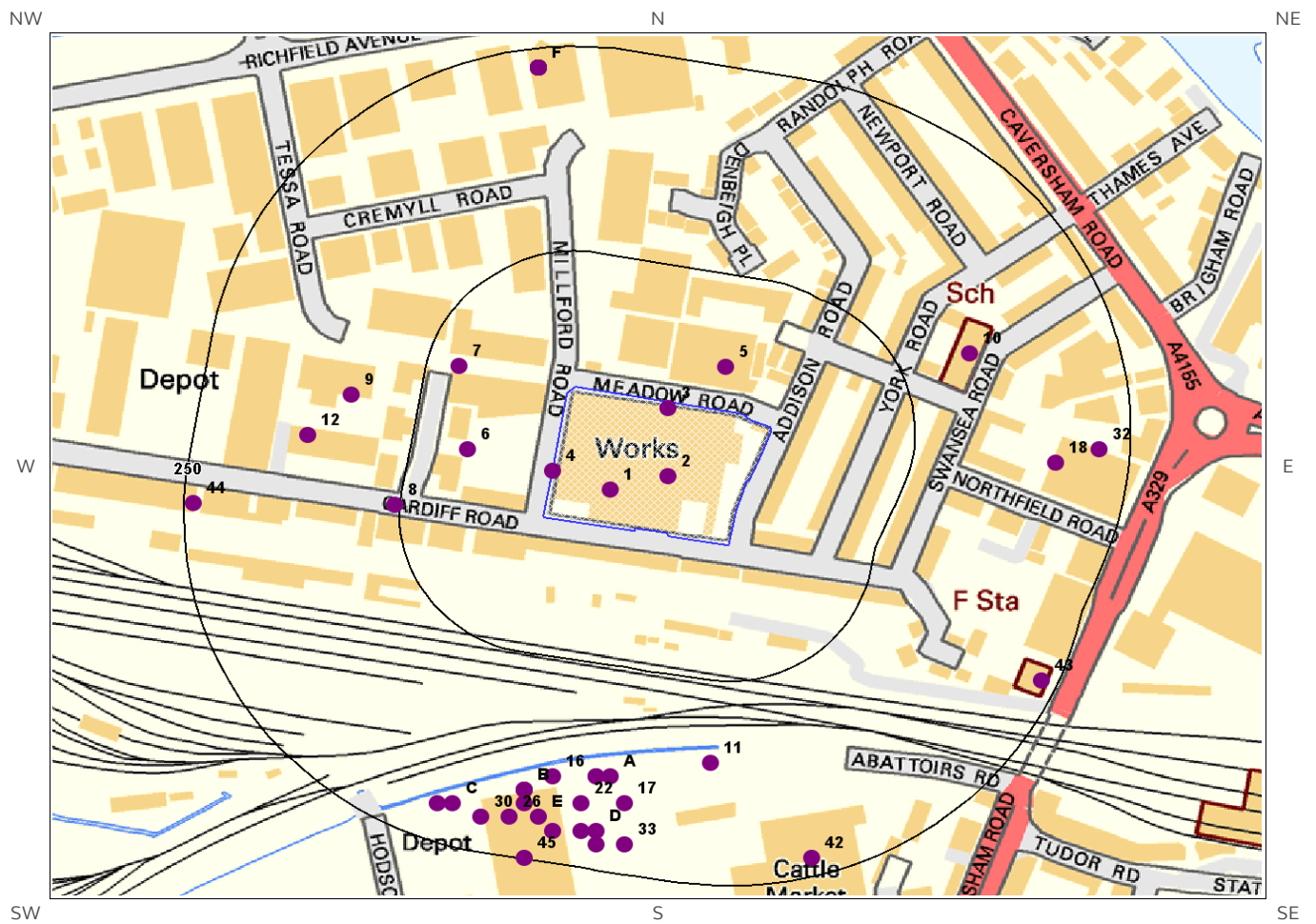
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

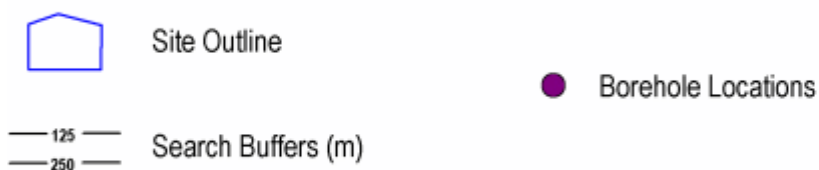
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records Map



Borehole Records Legend

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7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

45

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	470910 174090	SU77SW660	15.24	ADDISON ROAD READING
2	0.0	On Site	470950 174100	SU77SW190	11.43	14 CROSS ST READING
3	0.0	On Site	470950 174150	SU77SW649	18.28	MEADOW ROAD READING
4	0.0	On Site	470870 174104	SU77SW861	6.0	QTR DEPOT CARDIFF ROAD READING 2/2A
5	32.0	N	470990 174180	SU77SW48	45.72	MEADOW ROAD WORKS CAVERSHAM
6	61.0	W	470811 174120	SU77SW862	6.0	QTR DEPOT CARDIFF ROAD READING 3
7	78.0	W	470805 174181	SU77SW860	6.0	QTR DEPOT CARDIFF ROAD READING 1
8	104.0	W	470760 174079	SU77SW863	6.0	QTR DEPOT CARDIFF ROAD READING 4
9	147.0	W	470730 174160	SU77SW659	4.57	CARDIFF ROAD READING
10	149.0	E	471160 174190	SU77SW49	7.31	SCHOOL BOARD SWANSEA ROAD
11	161.0	S	470980 173890	SU77SW46	91.44	THE ABATTOIRS READING
12	172.0	W	470700 174130	SU77SW658	3.65	CARDIFF ROAD READING
13A	181.0	S	470910 173880	SU77SW1188	-1.0	READING BUS GARAGE 96/9
14A	182.0	S	470900 173880	SU77SW1080	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 7
15A	182.0	S	470900 173880	SU77SW1173	-1.0	GREAT KNOLLYS STREET READING TP96/6
16	187.0	S	470870 173880	SU77SW1051	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 5
17	199.0	S	470920 173860	SU77SW1175	-1.0	GREAT KNOLLYS STREET READING TP96/8
18	199.0	E	471220 174110	SU77SW661	22.86	81 CAVERSHAM ROAD READING
19B	200.0	S	470850 173870	SU77SW1046	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE 3
20B	200.0	S	470850 173870	SU77SW1079	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 6
21B	200.0	S	470850 173870	SU77SW1179	-1.0	GREAT KNOLLYS STREET READING WS96/1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
22	204.0	S	470890 173860	SU77SW1070	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE 2
23B	210.0	S	470850 173860	SU77SW1177	-1.0	GREAT KNOLLYS STREET READING TP96/10
24E	218.0	S	470860 173850	SU77SW1168	-1.0	GREAT KNOLLYS STREET READING TP96/1
25C	220.0	S	470800 173860	SU77SW1069	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE 1
26	221.0	S	470840 173850	SU77SW1052	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 6
27D	222.0	S	470900 173840	SU77SW1161	-1.0	GREAT KNOLLYS STREET READING 96/2
28C	223.0	S	470790 173860	SU77SW1077	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 4
29D	224.0	S	470890 173840	SU77SW1160	-1.0	GREAT KNOLLYS STREET READING 96/1
30	225.0	S	470820 173850	SU77SW1078	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 5
31E	227.0	S	470870 173840	SU77SW1050	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE TP 4
32	228.0	E	471250 174120	SU77SW623	19.4	CAVERSHAM ROAD READING A
33	228.0	S	470920 173830	SU77SW1176	-1.0	GREAT KNOLLYS STREET READING TP96/9
34D	232.0	S	470900 173830	SU77SW1162	-1.0	GREAT KNOLLYS STREET READING 96/3
35F	236.0	N	470860 174400	SU77SW821	4.2	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM TP 2
36F	236.0	N	470860 174400	SU77SW824	3.7	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM TP 5
37F	236.0	N	470860 174400	SU77SW823	3.4	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM TP 4
38F	236.0	N	470860 174400	SU77SW820	3.6	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM TP 1
39F	236.0	N	470860 174400	SU77SW822	3.6	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM TP 3
40F	236.0	N	470860 174400	SU77SW818	15.0	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM 1
41F	236.0	N	470860 174400	SU77SW819	14.5	RICHFIELD AVENUE- READING FOR PROPOSED NEW PORSH SHOWROOM 2
42	237.0	S	471050 173820	SU77SW51	10.05	CATTLE MARKET READING

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
43	239.0	SE	471210 173950	SU77SW44	5.79	CAVERSHAM ROAD READING
44	244.0	W	470620 174080	SU77SW648	18.29	CARDIFF ROAD READING
45	250.0	S	470850 173820	SU77SW1071	-1.0	GREAT KNOLLYS STREET READING BERKSHIRE 3

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/428812
 #2: scans.bgs.ac.uk/sobi_scans/boreholes/428342
 #3: scans.bgs.ac.uk/sobi_scans/boreholes/428801
 #4: scans.bgs.ac.uk/sobi_scans/boreholes/15637606
 #5: scans.bgs.ac.uk/sobi_scans/boreholes/428200
 #6: scans.bgs.ac.uk/sobi_scans/boreholes/15637607
 #7: scans.bgs.ac.uk/sobi_scans/boreholes/15637605
 #8: scans.bgs.ac.uk/sobi_scans/boreholes/15637608
 #9: scans.bgs.ac.uk/sobi_scans/boreholes/428811
 #10: scans.bgs.ac.uk/sobi_scans/boreholes/428201
 #11: scans.bgs.ac.uk/sobi_scans/boreholes/428198
 #12: scans.bgs.ac.uk/sobi_scans/boreholes/428810
 #18: scans.bgs.ac.uk/sobi_scans/boreholes/428813
 #32: scans.bgs.ac.uk/sobi_scans/boreholes/428775
 #35F: scans.bgs.ac.uk/sobi_scans/boreholes/15617880
 #36F: scans.bgs.ac.uk/sobi_scans/boreholes/15617887
 #37F: scans.bgs.ac.uk/sobi_scans/boreholes/15617885
 #38F: scans.bgs.ac.uk/sobi_scans/boreholes/15617878
 #39F: scans.bgs.ac.uk/sobi_scans/boreholes/15617883
 #40F: scans.bgs.ac.uk/sobi_scans/boreholes/15617870
 #41F: scans.bgs.ac.uk/sobi_scans/boreholes/15617876
 #42: scans.bgs.ac.uk/sobi_scans/boreholes/428203
 #43: scans.bgs.ac.uk/sobi_scans/boreholes/428196
 #44: scans.bgs.ac.uk/sobi_scans/boreholes/428800

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

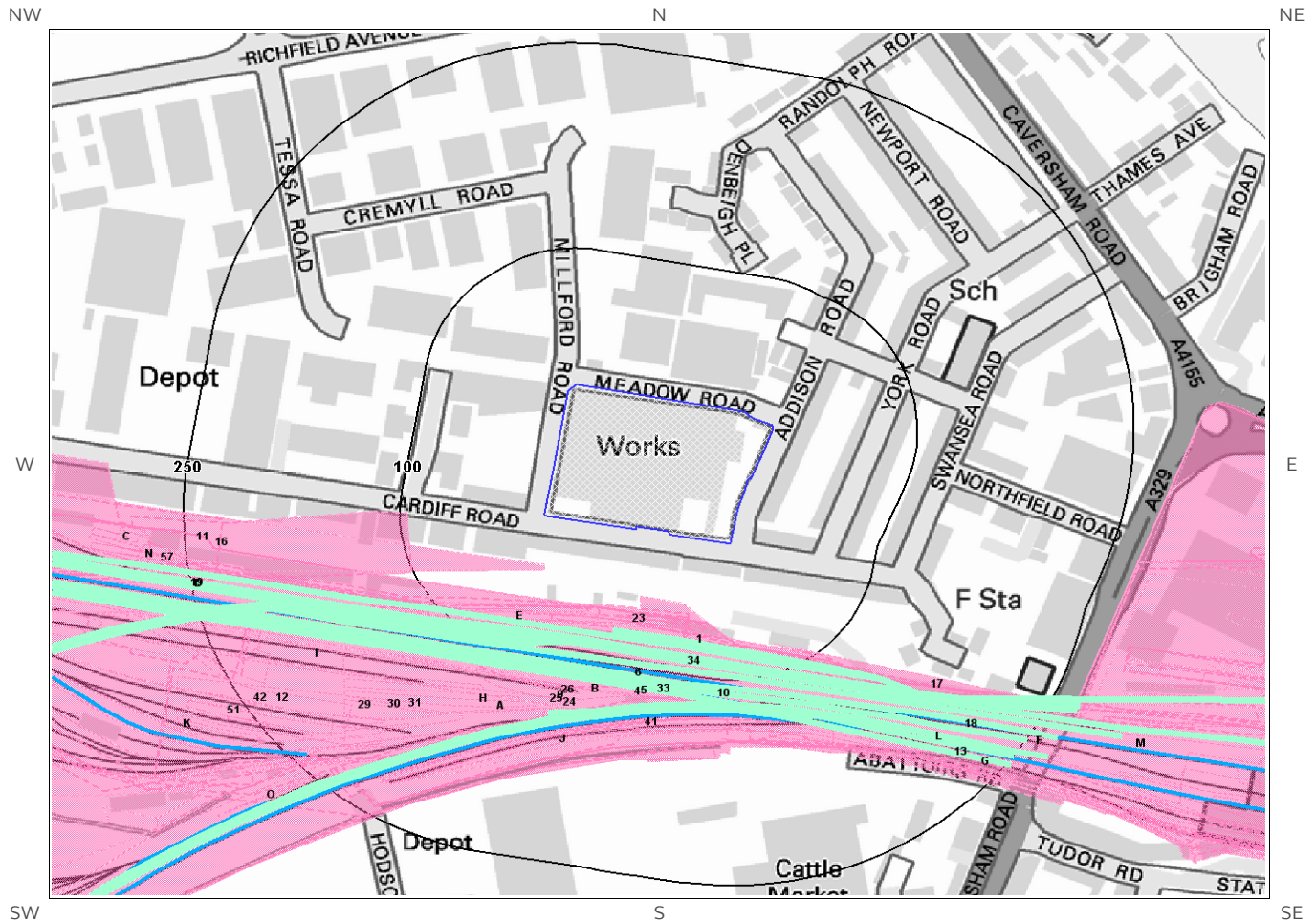
2

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels Map



Railways and Tunnels Legend

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	Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Railway Tunnel (OS Mapping)		High Speed 2
	Abandoned or Dismantled Railway (OpenStreetMap)		High Speed 2 Revised Proposed Route
	Railway Track (OS Mapping)		Crossrail 1
	Railway and/or Tunnel Feature from Historical Mapping		
	Site Outline		
	Search Buffers (m)		

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
16	35	S	n/a	Railway	1913
17	48	S	n/a	Railway	1910
18	48	S	n/a	Railway	1932
1	55	S	471797 173791	Railway Sidings	1933
2A	57	S	471493 173844	Railway Sidings	1994
3A	57	S	471493 173844	Railway Sidings	1989
4	58	S	471693 173770	Railway Sidings	1938

ID	Distance (m)	Direction	NGR	Details	Date
5	58	S	471677 173761	Railway Sidings	1913
6	60	S	471525 173860	Railway Sidings	1962
7B	60	S	470437 173767	Railway Sidings	1971
8B	60	S	470437 173767	Railway Sidings	1977
9	60	S	471714 173783	Railway Sidings	1938
19	61	S	470188 174076	Railway Sidings	1959
20D	62	S	470545 174034	Railway Sidings	1988
21D	63	S	470587 174033	Railway Sidings	1970
22D	63	S	470587 174033	Railway Sidings	1959
23	63	S	470842 173991	Railway Sidings	1959
24	64	S	471309 173894	Railway Sidings	1958
25	65	S	472120 173730	Railway Sidings	1931
26	65	S	472120 173730	Railway Sidings	1912
27E	66	S	470837 173992	Railway Sidings	1986
28E	66	S	470837 173992	Railway Sidings	1993
29	66	S	n/a	Railway	1931
30	66	S	n/a	Railway	1900
31	76	S	n/a	Railway	1879
10	77	S	471639 173719	Railway Sidings	1898
32E	79	S	470847 173990	Railway Sidings	1971
33	81	S	471629 173867	Railway Sidings	1879
34	82	S	472117 173727	Railway Sidings	1900
35F	84	S	471309 173894	Railway Sidings	1957
11	95	W	470053 174155	Railway Sidings	1901
36F	104	S	n/a	Railway	1879
12	109	S	470607 173955	Railway Sidings	1933
37G	112	S	471209 173878	Railway Sidings	1996
38G	112	S	471209 173878	Railway Sidings	1994
39H	116	S	470892 173935	Railway Sidings	1879
40H	116	S	470892 173935	Railway Sidings	1879
41	116	S	470683 173901	Railway Sidings	1900

ID	Distance (m)	Direction	NGR	Details	Date
42	117	S	470739 173940	Railway Sidings	1959
13	118	S	470754 173877	Railway Sidings	1933
43I	118	S	470696 173966	Railway Sidings	1993
44I	118	S	470696 173966	Railway Sidings	1986
45I	118	S	470694 173965	Railway Sidings	1971
46J	128	S	470830 173898	Railway Sidings	1959
47J	128	S	470824 173899	Railway Sidings	1986
48J	128	S	470824 173899	Railway Sidings	1993
49J	129	S	470824 173898	Railway Sidings	1971
50K	154	S	470510 173929	Railway Sidings	1993
51	154	S	470599 173939	Railway Sidings	1986
52K	155	S	470653 173929	Railway Sidings	1971
53L	167	SE	471138 173906	Railway Sidings	1879
54L	167	SE	471138 173906	Railway Sidings	1879
55M	177	SE	471249 173897	Railway Sidings	1957
56M	177	SE	471249 173897	Railway Sidings	1962
14C	223	W	470440 174077	Railway Sidings	1938
15C	223	W	470440 174077	Railway Sidings	1910
57	233	W	470603 174037	Railway Sidings	1913
58N	233	W	470603 174037	Railway Sidings	1936
59N	233	W	470603 174037	Railway Sidings	1932
60O	245	SW	470675 173864	Railway Sidings	1971
61O	245	SW	470679 173866	Railway Sidings	1993
62O	245	SW	470679 173866	Railway Sidings	1986

Any records that have been identified are represented on the Railways and Tunnels Map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels Map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
75	S	Not given	Rail
75	S	Not given	Rail
79	S	Not given	Rail
79	S	Not given	Rail
79	S	Not given	Rail
79	S	Not given	Rail
85	S	Not given	Rail
85	S	Not given	Rail
85	S	Not given	Rail
85	S	Not given	Rail
89	S	Not given	Rail
89	S	Reading to Plymouth Line	Construction
89	S	Not given	Rail
89	S	Reading to Plymouth Line	Construction
96	S	Reading to Plymouth Line	Construction
96	S	Reading to Plymouth Line	Construction
101	S	Not given	Multi Track
101	S	Not given	Multi Track
105	S	Great Western Main Line	Rail
105	S	Great Western Main Line	Rail
106	S	Great Western Main Line	Rail
106	S	Great Western Main Line	Rail
106	S	Great Western Main Line	Rail
106	S	Great Western Main Line	Rail
108	S	Great Western Main Line	Rail
108	S	Great Western Main Line	Rail
110	S	Great Western Main Line	Rail
110	S	Great Western Main Line	Rail
111	S	Not given	Multi Track
111	S	Not given	Multi Track
112	S	up relief	Rail

Distance (m)	Direction	Name	Type
112	S	up relief	Rail
113	S	Great Western Main Line	Rail
113	S	Great Western Main Line	Rail
115	S	Not given	Rail
115	S	Not given	Rail
117	S	down relief	Rail
117	S	down relief	Rail
118	S	Not given	Rail
118	S	Not given	Rail
121	S	Not given	Rail
121	S	Reading to Taunton line	Rail
121	S	Not given	Rail
121	S	Reading to Taunton line	Rail
125	S	Not given	Multi Track
125	S	Not given	Multi Track
126	S	Reading to Taunton line	Rail
126	S	Reading to Plymouth Line	Rail
126	S	Reading to Taunton line	Rail
126	S	Reading to Plymouth Line	Rail
128	SW	Great Western Main Line	Rail
128	SW	Great Western Main Line	Rail
132	SW	Great Western Main Line	Rail
132	SW	Great Western Main Line	Rail
136	S	Not given	Rail
136	S	Not given	Rail
141	SE	Reading to Taunton line	Rail
141	SE	Reading to Taunton line	Rail
158	SE	Great Western Main Line	Rail
158	SE	Reading to Taunton line	Rail
158	SE	Great Western Main Line	Rail
158	SE	Reading to Taunton line	Rail
160	SW	Great Western Main Line	Rail
160	SW	Great Western Main Line	Rail
166	SE	Not given	Multi Track
166	SE	Not given	Multi Track
193	SW	Great Western Main Line	Rail
193	SW	Great Western Main Line	Construction
193	SW	Great Western Main Line	Rail
193	SW	Great Western Main Line	Construction
195	SE	Not given	Rail
195	SE	Not given	Rail
199	SE	Not given	Rail
199	SE	Not given	Rail
202	W	Reading to Plymouth Line	Construction
202	W	Reading to Plymouth Line	Construction
212	SE	Not given	Rail
212	SE	Not given	Rail
228	SW	Reading to Plymouth Line	Rail
228	SW	Reading to Plymouth Line	Rail
230	SW	Reading to Taunton line	Rail
230	SW	Reading to Taunton line	Rail
240	W	Great Western Main Line	Rail
240	SW	Reading to Plymouth Line	Rail

Distance (m)	Direction	Name	Type
240	SW	Not given	Multi Track
240	SW	Not given	Multi Track
240	SW	Not given	Multi Track
240	SW	Not given	Multi Track
240	SW	Not given	Multi Track
240	SW	Not given	Multi Track
240	W	Great Western Main Line	Rail
240	SW	Reading to Plymouth Line	Rail
242	SE	Not given	Rail
242	SW	Reading to Taunton line	Rail
242	SE	Not given	Rail
242	SE	Not given	Rail
242	SW	Reading to Taunton line	Rail
242	SE	Not given	Rail
249	SE	up relief	Rail
249	SE	Great Western Main Line	Rail
249	SE	up relief	Rail
249	SE	Great Western Main Line	Rail

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels Map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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<https://www.groundsure.com/terms-and-conditions-sept-2016/>

Groundsure Enviro Insight

Address: Cox and Wyman Ltd, Cardiff Road, Reading, RG1 8EX
Date: 29 Mar 2017
Reference: CMAPS-AAC-611633-13562-290317EDR
Client: CENTREMAPS

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 20-Apr-2015
Grid Reference: 470943,174108
Site Size: 1.31ha

Report Reference: CMAPS-AAC-611633-13562-290317EDR
Client Reference: 13562

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	7	6	88	114
1.2 Additional Information – Historical Tank Database	1	0	21	49
1.3 Additional Information – Historical Energy Features Database	2	0	14	60
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	10	24
1.6 Potentially Infilled Land	0	2	2	4
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	1
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	3	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	2	6
2.1.9 Records of Water Industry Referrals	0	0	0	1
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	10
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	1

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	1	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	2	2	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	3	5	1

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	2	10	48	Not searched
4.2 Records of Petrol and Fuel Sites	1	0	1	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes					
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	4	0	0	2	4	7
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	3	3
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	2	0	0	0	1	2
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	No	Yes
6.10 Detailed River Network entries within 500m of the site	0	0	5	15	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	Yes					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	1
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	2	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Very Low
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

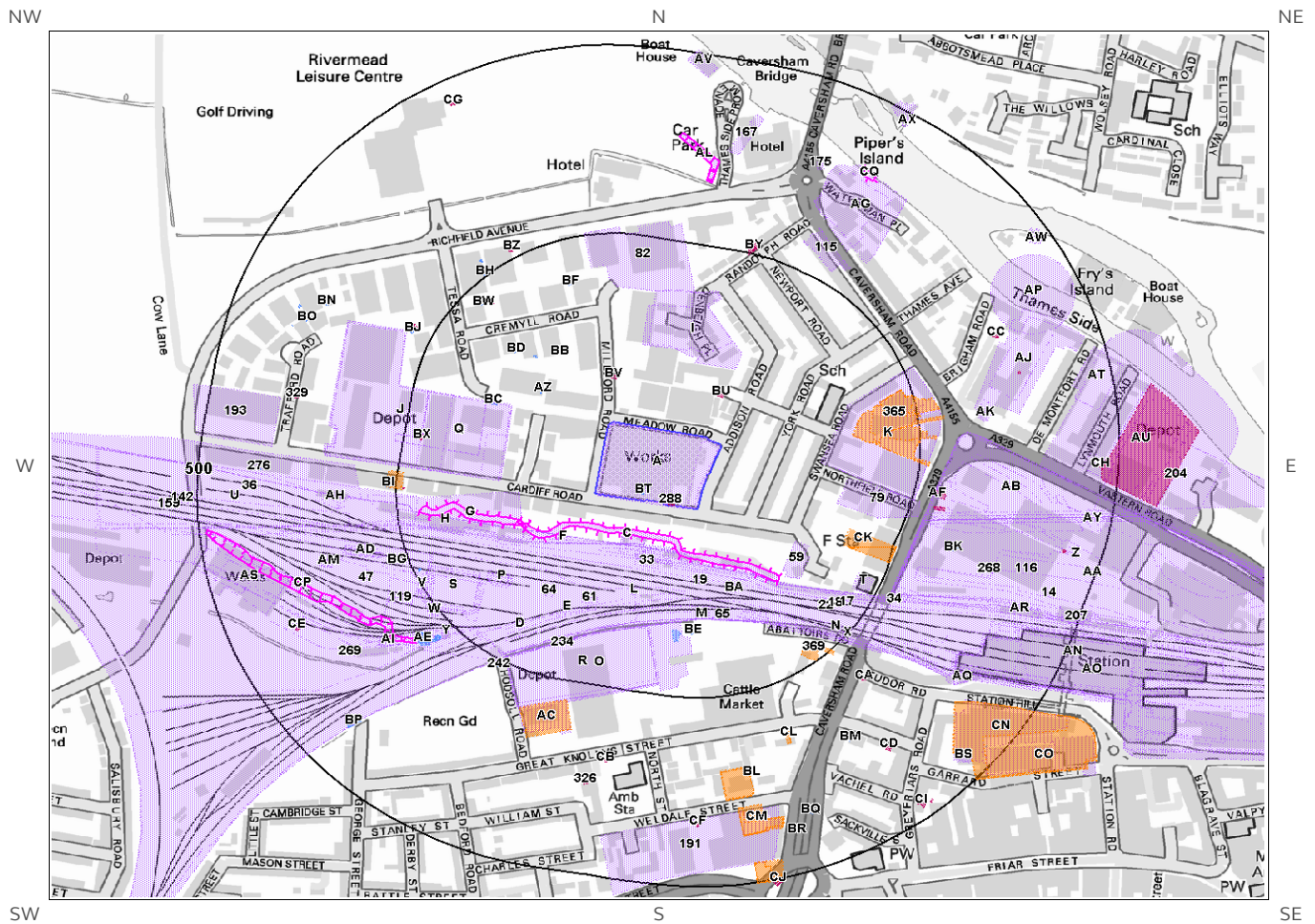
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

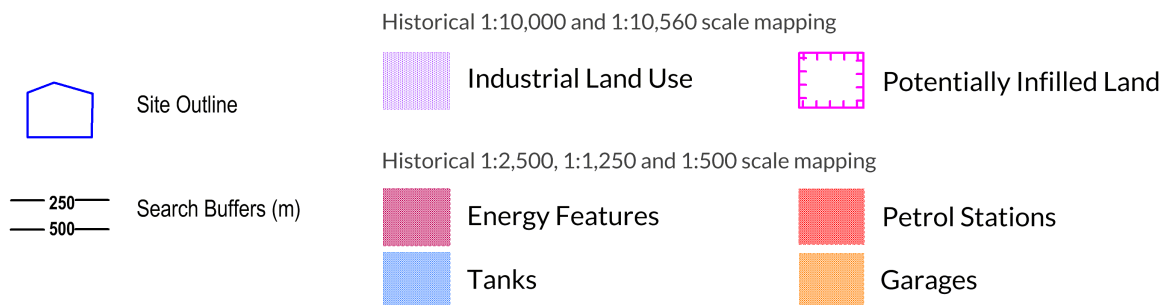
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 215

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Printing Works	1910
2A	0	On Site	Printing Works	1938
3A	0	On Site	Unspecified Works	1994
4A	0	On Site	Unspecified Works	1971
5A	0	On Site	Unspecified Works	1962
6A	0	On Site	Unspecified Works	1989
7A	0	On Site	Unspecified Works	1977
8B	39	S	Unspecified Ground Workings	1938
9B	39	S	Unspecified Ground Workings	1913
10C	41	S	Railway Building	1933
11C	46	S	Railway Buildings	1989
12C	46	S	Railway Buildings	1994
13C	48	S	Railway Buildings	1977
14	55	S	Railway Sidings	1933
15D	57	S	Railway Sidings	1994
16D	57	S	Railway Sidings	1989
17	58	S	Railway Sidings	1913
18	58	S	Railway Sidings	1938
19	60	S	Railway Sidings	1962
20E	60	S	Railway Sidings	1971
21E	60	S	Railway Sidings	1977
22	60	S	Railway Sidings	1938
23B	66	S	Railway Buildings	1933
24F	66	SW	Railway Building	1989
25F	66	SW	Railway Building	1977
26F	66	SW	Railway Building	1994
27F	67	SW	Railway Building	1971
28F	67	SW	Railway Building	1962
29B	69	S	Railway Buildings	1938
30B	71	S	Railway Buildings	1938
31B	71	S	Railway Buildings	1913
32B	72	S	Railway Buildings	1962
33	77	S	Railway Buildings	1898

34	77	S	Railway Sidings	1898
35I	95	N	Unspecified Works	1962
36	95	W	Railway Sidings	1901
37G	97	SW	Unspecified Ground Workings	1910
38G	97	SW	Unspecified Ground Workings	1938
39G	101	SW	Railway Buildings	1977
40G	101	SW	Railway Buildings	1989
41G	101	SW	Railway Buildings	1994
42H	102	SW	Railway Buildings	1962
43H	102	SW	Railway Buildings	1971
44I	102	N	Unspecified Commercial/Industrial	1989
45I	102	N	Unspecified Works	1977
46I	102	N	Unspecified Works	1971
47	109	S	Railway Sidings	1933
48BA	112	S	Railway Building	1898
49L	118	S	Railway Building	1913
50N	118	S	Railway Sidings	1933
51J	120	W	Unspecified Depot	1977
52J	123	W	Unspecified Depots	1989
53Q	123	W	Unspecified Depot	1971
54K	127	E	Unspecified Commercial/Industrial	1994
55K	127	E	Unspecified Works	1962
56K	127	E	Unspecified Commercial/Industrial	1977
57K	127	E	Unspecified Commercial/Industrial	1989
58K	127	E	Unspecified Commercial/Industrial	1971
59	129	E	Timber Yard	1913
60L	134	S	Railway Building	1898
61	135	S	Railway Building	1898
62M	138	S	Railway Building	1938
63M	138	S	Railway Building	1913
64	140	SW	Railway Building	1898
65	142	S	Railway Building	1913
66N	146	SE	Railway Building	1938
67N	147	S	Railway Building	1938
68N	147	S	Railway Building	1913
69O	150	S	Corporation Yard	1994
70O	150	S	Corporation Yard	1989
71P	150	SW	Railway Building	1938
72P	151	SW	Railway Building	1933
73Q	154	W	Unspecified Depot	1977
74P	154	SW	Railway Building	1962

75P	154	SW	Railway Building	1938
76R	158	S	Corporation Yard	1933
77R	161	S	Corporation Yard	1938
78R	162	S	Corporation Yard	1962
79	163	E	Malthouses	1878
80O	164	S	Corporation Yard	1938
81O	164	S	Corporation Yard	1913
82	179	N	Unspecified Depot	1977
83S	179	SW	Engine Shed	1933
84S	179	SW	Engine Shed	1938
85S	183	SW	Engine Shed	1962
86S	183	SW	Engine Shed	1898
87S	183	SW	Engine Shed	1913
88S	183	SW	Engine Shed	1938
89J	198	W	Unspecified Depot	1994
90T	219	SE	Fire Station	1994
91T	219	SE	Fire Station	1962
92T	219	SE	Fire Station	1989
93T	219	SE	Fire Station	1977
94T	219	SE	Fire Station	1971
95U	223	W	Railway Sidings	1910
96U	223	W	Railway Sidings	1938
97BG	226	SW	Railway Building	1898
98V	242	SW	Railway Building	1913
99X	245	SE	Railway Building	1898
100V	247	SW	Railway Building	1898
101V	249	SW	Railway Building	1938
102W	251	SW	Railway Building	1938
103V	252	SW	Railway Building	1962
104W	253	SW	Railway Building	1913
105X	254	SE	Railway Building	1913
106W	254	SW	Railway Building	1962
107W	254	SW	Railway Building	1938
108Y	259	SW	Railway Building	1938
109Y	261	SW	Railway Building	1913
110Y	261	SW	Railway Building	1977
111Y	262	SW	Railway Building	1962
112Z	266	SE	Unspecified Works	1962
113Z	266	SE	Unspecified Works	1977
114Z	266	SE	Unspecified Works	1971
115	267	NE	Timber Yard	1878
116	268	SE	Unspecified Works	1933
117AA	269	E	Railway Works	1938
118AA	269	E	Railway Works	1913
119	269	SW	Railway Building	1962
120AA	270	E	Railway Works	1898

121AA	271	E	Unspecified Works	1938
122AB	273	E	Railway Sidings	1897
123AB	274	E	Railway Sidings	1938
124AB	274	E	Railway Sidings	1910
125AF	277	E	Coal Depot	1910
126AD	278	W	Railway Building	1938
127AC	279	S	Unspecified Works	1977
128AC	279	S	Unspecified Commercial/Industrial	1994
129AC	279	S	Unspecified Commercial/Industrial	1989
130AD	280	W	Railway Building	1913
131AD	280	W	Railway Building	1938
132AD	281	W	Railway Building	1933
133AB	281	E	Railway Sidings	1900
134AE	284	SW	Railway Building	1962
135AD	284	W	Railway Building	1962
136AE	285	SW	Railway Building	1913
137AF	288	E	Coal Depot	1938
138CP	297	SW	Refuse Heap	1913
139AG	301	NE	Unspecified Shed	1878
140AG	301	NE	Unspecified Works	1977
141AG	301	NE	Unspecified Works	1971
142	310	W	Railway Sidings	1897
143AH	314	W	Railway Building	1994
144AH	314	W	Railway Building	1977
145AH	314	W	Railway Building	1989
146AI	315	SW	Railway Building	1971
147AI	315	SW	Railway Building	1977
148AH	319	W	Railway Building	1971
149AH	319	W	Railway Building	1962
150AI	321	SW	Railway Building	1989
151AI	321	SW	Railway Building	1994
152AJ	321	E	Sawmill	1938
153AJ	321	E	Sawmill	1910
154AK	327	E	Smithy	1900
155AK	328	E	Smithy	1897
156AN	330	SE	Railway Station	1933
157AL	333	N	Unspecified Ground Workings	1910
158AL	333	N	Unspecified Ground Workings	1938
159	339	W	Railway Sidings	1878
160AM	340	W	Railway Building	1938
161AM	342	W	Railway Building	1938
162AM	342	W	Railway Building	1913
163AM	342	W	Railway Building	1933

164AM	346	W	Railway Building	1962
165AJ	346	E	Unspecified Warehouses	1977
166AO	372	SE	Railway Station	1994
167	375	N	Boat House	1977
168AN	377	SE	Railway Station	1971
169AO	377	SE	Railway Station	1977
170AO	377	SE	Railway Station	1962
171AN	378	SE	Railway Station	1989
172AN	378	SE	Railway Station	1913
173AN	378	SE	Railway Station	1938
174AN	380	SE	Railway Station	1938
175	381	N	Boat House	1910
176AP	387	NE	Boat House	1910
177AP	387	NE	Boat House	1938
178AQ	389	SE	Railway Building	1994
179AQ	389	SE	Railway Building	1989
180AQ	389	SE	Railway Building	1977
181AR	397	E	Railway Building	1994
182AR	397	E	Railway Building	1989
183AR	397	E	Railway Building	1971
184AR	397	E	Railway Building	1977
185AS	398	W	Unspecified Depot	1989
186AS	398	W	Unspecified Depot	1994
187CQ	398	NE	Unspecified Wharf	1878
188AS	399	W	Unspecified Depot	1977
189AS	399	W	Unspecified Depot	1971
190AU	403	E	Electric Works	1910
191	404	S	Unspecified Depot	1977
192AN	406	SE	Railway Station	1898
193	411	W	Unspecified Works	1962
194CN	420	SE	Bus Station	1994
195AT	448	E	Unspecified Works	1971
196AT	448	E	Unspecified Works	1977
197AU	454	E	Unspecified Depot	1994
198AU	454	E	Unspecified Depot	1989
199BS	458	SE	Smithy	1913
200AY	462	E	Railway Sidings	1900
201AW	471	NE	Boat House	1900
202AV	471	N	Boat House	1994
203AV	471	N	Boat House	1989
204	475	E	Railway Sidings	1901
205AW	477	NE	Boat House	1897
206CO	478	SE	Garage	1971
207	479	E	Railway Building	1898
208AW	480	NE	Boat House	1910
209AW	480	NE	Boat House	1938

210AX	480	NE	Boat House	1878
211AX	483	NE	Boat House	1938
212AX	483	NE	Boat House	1910
213AU	484	E	Electric Works	1900
214AU	485	E	Electric Works	1897
215AY	489	E	Railway Sidings	1900

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

71

ID	Distance (m)	Direction	Use	Date
216BT	0	On Site	Unspecified Tank	1970
217AZ	93	NW	Tanks	1970
218AZ	95	NW	Tanks	1988
219BA	108	S	Tank or Trough	1879
220BB	111	NW	Unspecified Tank	1970
221BB	112	NW	Unspecified Tank	1988
222BB	127	NW	Unspecified Tank	1970
223BB	128	NW	Unspecified Tank	1988
224BC	141	W	Tanks	1988
225BC	145	W	Unspecified Tank	1970
226BD	150	NW	Unspecified Tank	1970
227BD	151	NW	Unspecified Tank	1988
228BE	161	S	Unspecified Tank	1986
229BE	161	S	Unspecified Tank	1993
230BE	162	S	Tanks	1986
231BE	162	S	Tanks	1993
232BF	189	N	Unspecified Tank	1970
233BF	189	N	Unspecified Tank	1988
234	205	S	Tank or Trough	1879
235BW	222	NW	Unspecified Tank	1988
236BG	241	SW	Unspecified Tank	1958
237BG	241	SW	Unspecified Tank	1959
238BH	252	NW	Unspecified Tank	1970
239BH	252	NW	Unspecified Tank	1988
240BI	258	W	Unspecified Tank	1970
241BI	258	W	Unspecified Tank	1988
242	259	SW	Tank or Trough	1879
243BH	268	NW	Unspecified Tank	1970
244BH	268	NW	Unspecified Tank	1988

245AE	271	SW	Unspecified Tank	1958
246AE	272	SW	Unspecified Tank	1959
247AE	272	SW	Tanks	1971
248AE	273	SW	Tanks	1986
249BJ	273	NW	Unspecified Tank	1970
250BJ	274	NW	Unspecified Tank	1988
251Y	274	SW	Unspecified Tank	1912
252Y	274	SW	Unspecified Tank	1931
253Y	278	SW	Tanks	1958
254Y	279	SW	Tanks	1959
255AE	282	SW	Tanks	1959
256AE	283	SW	Tanks	1986
257AE	283	SW	Unspecified Tank	1993
258Y	286	SW	Unspecified Tank	1900
259BK	321	E	Tank or Trough	1879
260BK	321	E	Tank or Trough	1879
261BK	324	E	Tank or Trough	1879
262BL	358	S	Pump and Tank	1880
263BL	358	S	Pump and Tank	1880
264BM	360	SE	Tank or Trough	1879
265BM	360	SE	Tank or Trough	1879
266BM	361	SE	Tank or Trough	1879
267BM	361	SE	Tank or Trough	1879
268	373	SE	Tank or Trough	1879
269	374	SW	Unspecified Tank	1993
270BN	386	NW	Unspecified Tank	1988
271BN	387	NW	Unspecified Tank	1970
272BO	402	W	Unspecified Tank	1988
273BO	403	W	Unspecified Tank	1970
274BO	416	W	Unspecified Tank	1972
275BO	417	W	Unspecified Tank	1972
276	420	W	Unspecified Tank	1972
277BP	421	SW	Filter Tanks	1986
278BP	421	SW	Filter Tanks	1993
279BP	422	SW	Filter Tanks	1971
280BQ	426	S	Unspecified Tank	1880
281BQ	426	S	Unspecified Tank	1880
282BQ	428	S	Unspecified Tank	1880
283BQ	428	S	Unspecified Tank	1880
284BR	444	S	Tank or Trough	1880
285BR	444	S	Tank or Trough	1880
286BS	476	SE	Unspecified Tank	1969

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

76

ID	Distance (m)	Direction	Use	Date
287BT	0	On Site	Electricity Substation	1970
288	0	On Site	Electricity Substation	1988
289BU	57	N	Electricity Substation	1971
290BU	57	N	Electricity Substation	1984
291BU	57	N	Electricity Substation	1993
292BU	57	N	Electricity Substation	1982
293BU	57	N	Electricity Substation	1984
294BV	57	N	Electricity Substation	1988
295BV	57	N	Electricity Substation	1970
296BW	215	NW	Electricity Substation	1970
297BW	216	NW	Electricity Substation	1988
298BX	226	W	Electricity Substation	1970
299BX	227	W	Electricity Substation	1988
300BI	239	W	Gas Governor	1970
301BI	240	W	Gas Governor	1988
302BY	248	N	Electricity Substation	1984
303BY	255	N	Electricity Substation	1971
304BY	255	N	Electricity Substation	1984
305BY	255	N	Electricity Substation	1982
306BY	255	N	Electricity Substation	1993
307BZ	259	NW	Electricity Substation	1970
308BZ	260	NW	Electricity Substation	1988
309BJ	273	NW	Electricity Substation	1988
310AF	276	E	Electricity Substation	1984
311AF	278	E	Electricity Substation	1982
312AF	279	E	Electricity Substation	1971
313AF	279	E	Electricity Substation	1984
314AF	279	E	Electricity Substation	1993
315CA	303	SE	Electricity Substation	1996
316CA	303	SE	Electricity Substation	1994
317CA	304	SE	Electricity Substation	1993
318CA	304	SE	Electricity Substation	1988
319CB	344	S	Electricity Substation	1993
320CB	344	S	Electricity Substation	1986
321CC	370	NE	Electricity Substation	1984
322CC	370	NE	Electricity Substation	1982
323CC	371	NE	Electricity Substation	1993

324CC	372	NE	Electricity Substation	1971
325CC	372	NE	Electricity Substation	1984
326	376	S	Electricity Substation	1971
327AJ	385	E	Electricity Substation	1956
328AJ	385	E	Electricity Substation	1956
329	389	W	Electricity Substation	1972
330CD	392	SE	Electricity Substation	1994
331CD	392	SE	Electricity Substation	1996
332CD	394	SE	Electricity Substation	1993
333CE	411	SW	Electricity Substation	1993
334CE	412	SW	Electricity Substation	1988
335CF	413	S	Electricity Substation	1986
336CF	413	S	Electricity Substation	1971
337Z	450	E	Electricity Substation	1993
338Z	451	E	Electricity Substation	1994
339Z	451	E	Electricity Substation	1996
340CG	465	NW	Electricity Substation	1993
341CG	465	NW	Electricity Substation	1988
342CH	474	E	Electricity Substation	1982
343CH	474	E	Electricity Substation	1984
344CH	475	E	Electricity Substation	1993
345CH	475	E	Electricity Substation	1971
346CH	475	E	Electricity Substation	1984
347CI	475	SE	Electricity Substation	1996
348CI	475	SE	Electricity Substation	1994
349CH	478	E	Electricity Substation	1972
350AU	478	E	Electricity Depot	1972
351CH	479	E	Electricity Substation	1989
352CI	481	SE	Electricity Substation	1988
353CI	481	SE	Electricity Substation	1993
354CI	481	SE	Electricity Substation	1979
355CI	482	SE	Electricity Substation	1986
356CI	483	SE	Electricity Substation	1969
357CJ	498	S	Electricity Substation	1994
358CJ	498	S	Electricity Substation	1996
359CJ	498	S	Electricity Substation	1986
360CJ	498	S	Electricity Substation	1988
361CJ	498	S	Electricity Substation	1993
362CJ	498	S	Electricity Substation	1979

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

34

ID	Distance (m)	Direction	Use	Date
363K	165	E	Coach Building Motor Car Engineering Works	1971
364K	166	E	Coach Building Engineering Works	1956
365	188	E	Coach Building and Engineering Works	1956
366CK	188	E	Car Depot	1971
367CK	196	E	Garage	1986
368CK	196	E	Garage	1988
369	220	SE	Garage	1969
370BI	242	W	Garage	1970
371BI	242	W	Garage	1959
372BI	243	W	Garage	1959
373AC	274	S	Agricultural Engineering Works	1971
374CL	310	S	Garage	1962
375CL	310	S	Garage	1969
376CL	310	S	Garage	1957
377CL	310	S	Garage	1958
378CL	310	S	Garage	1957
379BL	346	S	Garage	1996
380BL	346	S	Garage	1994
381BL	348	S	Garage	1988
382BL	348	S	Garage	1993
383BL	348	S	Garage	1986
384CM	398	S	Garage	1962
385CM	399	S	Garage	1957
386CM	399	S	Garage	1958
387CM	399	S	Garage	1957
388CN	411	SE	Garage	1957
389CN	411	SE	Garage	1958
390CN	411	SE	Garage	1957
391CO	468	SE	Garage	1962

392CO	468	SE	Garage	1969
393CJ	474	S	Garage	1962
394CJ	474	S	Garage	1957
395CJ	474	S	Garage	1958
396CJ	474	S	Garage	1957

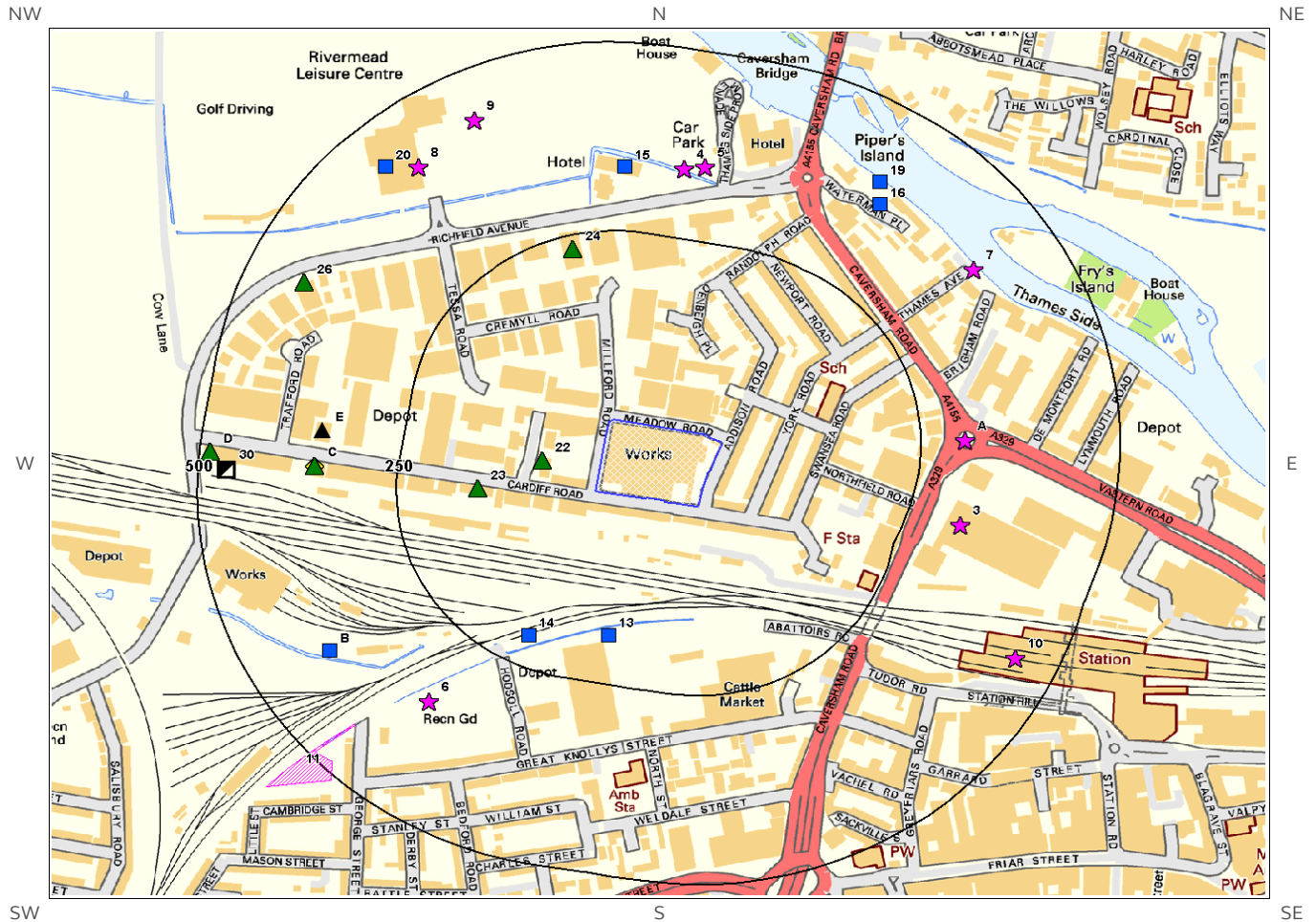
1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 8

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
397B	39	S	Unspecified Ground Workings	1913
398B	39	S	Unspecified Ground Workings	1938
399G	97	SW	Unspecified Ground Workings	1910
400G	97	SW	Unspecified Ground Workings	1938
401CP	297	SW	Refuse Heap	1913
402AL	333	N	Unspecified Ground Workings	1938
403AL	333	N	Unspecified Ground Workings	1910
404CQ	398	NE	Unspecified Wharf	1878

2. Environmental Permits, Incidents and Registers Map



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- | | | |
|-------------------------------|---|--|
| Site Outline | Recorded Pollution Incident | RAS 3 & 4 Authorisations |
| Dangerous Substances (List 1) | Dangerous Substances (List 2) | Part A(1) Authorised Processes and Historic IPC Authorisations |
| Water Industry Referrals | Licenced Discharge Consents | Part A(2) and Part B Authorised Processes |
| Red List Discharge Consents | COMAH / NIHHS Sites | Sites Determined as Contaminated Land |
| | Hazardous Substance Consents and Enforcements | |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

1

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
29E	352	W	470520 174150	Operator: Kingfisher Colours Limited Installation Name: Kingfisher Colours Limited Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: LP3338DD Original Permit Number: LP3338DD EPR Reference: - Issue Date: 12/12/2016 Effective Date: 12/12/2016 Last date noted as effective: 2017-01-30 Status: Effective

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

1

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
12C	355	W	470510 174103	Name: Unimet Enamellers Ltd Status: Not Active Receiving Water: Kennet Authorised Substances: Chromium

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

6

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
22	73	W	470796 174109	Address: Rivermead Accident Repair Centre Limited, 64 Cardiff Road, Reading, Berks, RG1 8LL Process: PG6/34 (04) Respraying of Road Vehicles Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
23	149	W	470715 174072	Address: Sprayworks Limited, Unit 5, 151-155 Cardiff Road, Reading, RG1 8ES Process: PG6/34 (04) Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
24	229	N	470834 174389	Address: Snax 24 Limited, Richfield Avenue, Reading, Berks, RG1 8EQ Process: PG1/14 (06) Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
25C	354	W	470511 174102	Address: Unimet Enamellers Limited, 183 Cardiff Road, Reading, Berks, RG1 8HD Process: PG6/23 (04) Coating of Metal and Plastic Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
26	424	NW	470498 174345	Address: Grosvenor Motor Company Ltd, 10 Richfield Avenue, Reading, RG1 8EQ Process: PG1/1 (04) Waste Oil and Recovered Oil less than 0.4MW Status: New Legislation Applies Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
27D	487	W	470379 174121	Address: E Hillier & Son Ltd, Cardiff Road, RG1 8HX Process: metal process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

8

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
13	186	S	470880 173880	Address: GREAT KNOLLEYS STREET,READING,BERKS, GREAT KNOLLEYS STREET,READING,BE, RKSHIRE,RG1 7HP, -, - Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CATM.3308 Permit Version: 1 Receiving Water: ABATTOIR DITCH Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 06/07/1998 Effective Date: 06-Jul-1998 Revocation Date: -
14	208	SW	470780 173880	Address: GREAT KNOLLEYS STREET,READING,BERKS, GREAT KNOLLEYS STREET,READING,BE, RKSHIRE,RG1 7HP, -, - Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CATM.3307 Permit Version: 1 Receiving Water: ABATTOIR DITCH Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 06/07/1998 Effective Date: 06-Jul-1998 Revocation Date: -
15	335	N	470900 174500	Address: CALENDARS RESTAURANT, RICHFIELD AVE, CALENDARS RESTAURANT, RICHFIELD, AVENUE, CAVERSHAM, READING, BERK, S, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2379 Permit Version: 1 Receiving Water: PORTMAN BROOK Status: TRANSFERRED FROM COPA 1974 Issue date: 22/04/1988 Effective Date: 22-Apr-1988 Revocation Date: -
16	371	NE	471220 174450	Address: RETIREMENT HOMES DEVELOPMENT, CAVER, RETIREMENT HOMES DEVELOPMENT, CA, VERSHAM ROAD, READING, BERKS, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2313 Permit Version: 1 Receiving Water: RIVER THAMES Status: REVOKED - UNSPECIFIED Issue date: 25/03/1988 Effective Date: 25-Mar-1988 Revocation Date: 31/10/1991
17B	395	SW	470530 173860	Address: PERMANENT WAY STAFF ACCOMMODATION B, PERMANENT WAY STAFF ACCOMMODATIO, N BLOCK, COW LANE, READING, -, -, - Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTWC.0130 Permit Version: 2 Receiving Water: MADE GROUND/OVERLYING ALLUVIUM Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 12/05/2007 Effective Date: 12-May-2007 Revocation Date: 24/05/2010

ID	Distance (m)	Direction	NGR	Details
18B	395	SW	470530 173860	Address: PERMANENT WAY STAFF ACCOMMODATION B, PERMANENT WAY STAFF ACCOMMODATIO, N BLOCK, COW LANE, READING., -, - Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTWC.0130 Permit Version: 1 Receiving Water: MADE GROUND OVERLYING ALLUVIUM Status: TRANSFERRED FROM COPA 1974 Issue date: 10/07/1985 Effective Date: 10-Jul-1985 Revocation Date: 12/05/2007
19	397	NE	471220 174480	Address: OFFICES, CAVERSHAM ROAD, READING, B, OFFICES, CAVERSHAM ROAD, READING, , BERKS, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2078 Permit Version: 1 Receiving Water: RIVER THAMES Status: REVOKED - UNSPECIFIED Issue date: 02/12/1987 Effective Date: 02-Dec-1987 Revocation Date: 06/02/1995
20	439	NW	470600 174500	Address: RIVERSIDE LEISURE CENTRE, READING,, RIVERSIDE LEISURE CENTRE, READIN, G, BERKS, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2509 Permit Version: 1 Receiving Water: PORTMAN BROOK Status: TRANSFERRED FROM COPA 1974 Issue date: 09/06/1988 Effective Date: 09-Jun-1988 Revocation Date: -

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

1

The following Water Industry Referral records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Address	Permission reference	Local Authority	First Date Received	Last Date Received	Status
30	465	W	E HILLIER AND SON (HOLDINGS) LTD, 215 CARDIFF ROAD, 215 CARDIFF ROAD, READING, BERKSHIRE, RG1 8HX	AF5158	READING BOROUGH COUNCIL	01-Jun-2001	08-Oct-2016	EFFECTIVE

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

10

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1A	305	E	471327 174138	Incident Date: 17-Sep-2002 Incident Identification: 108560 Pollutant: Oils and Fuel Pollutant Description: Diesel Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2A	305	E	471327 174138	Incident Date: 17-Sep-2002 Incident Identification: 108560 Pollutant: Oils and Fuel Pollutant Description: Diesel Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3	317	E	471321 174026	Incident Date: 12-Sep-2001 Incident Identification: 42851 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Composted Material Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
4	341	N	470974 174497	Incident Date: 13-Aug-2002 Incident Identification: 99851 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
5	349	N	471000 174500	Incident Date: 10-Jul-2001 Incident Identification: 15233 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6	350	SW	470653 173792	Incident Date: 23-Jul-2007 Incident Identification: 516354 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
7	389	NE	471337 174364	Incident Date: 22-Aug-2001 Incident Identification: 25897 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Food and Drink Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8	415	NW	470640 174500	Incident Date: 26-Feb-2002 Incident Identification: 60718 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
9	433	NW	470711 174562	Incident Date: 27-Feb-2002 Incident Identification: 60853 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
10	445	SE	471390 173850	Incident Date: 26-Apr-2002 Incident Identification: 74851 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

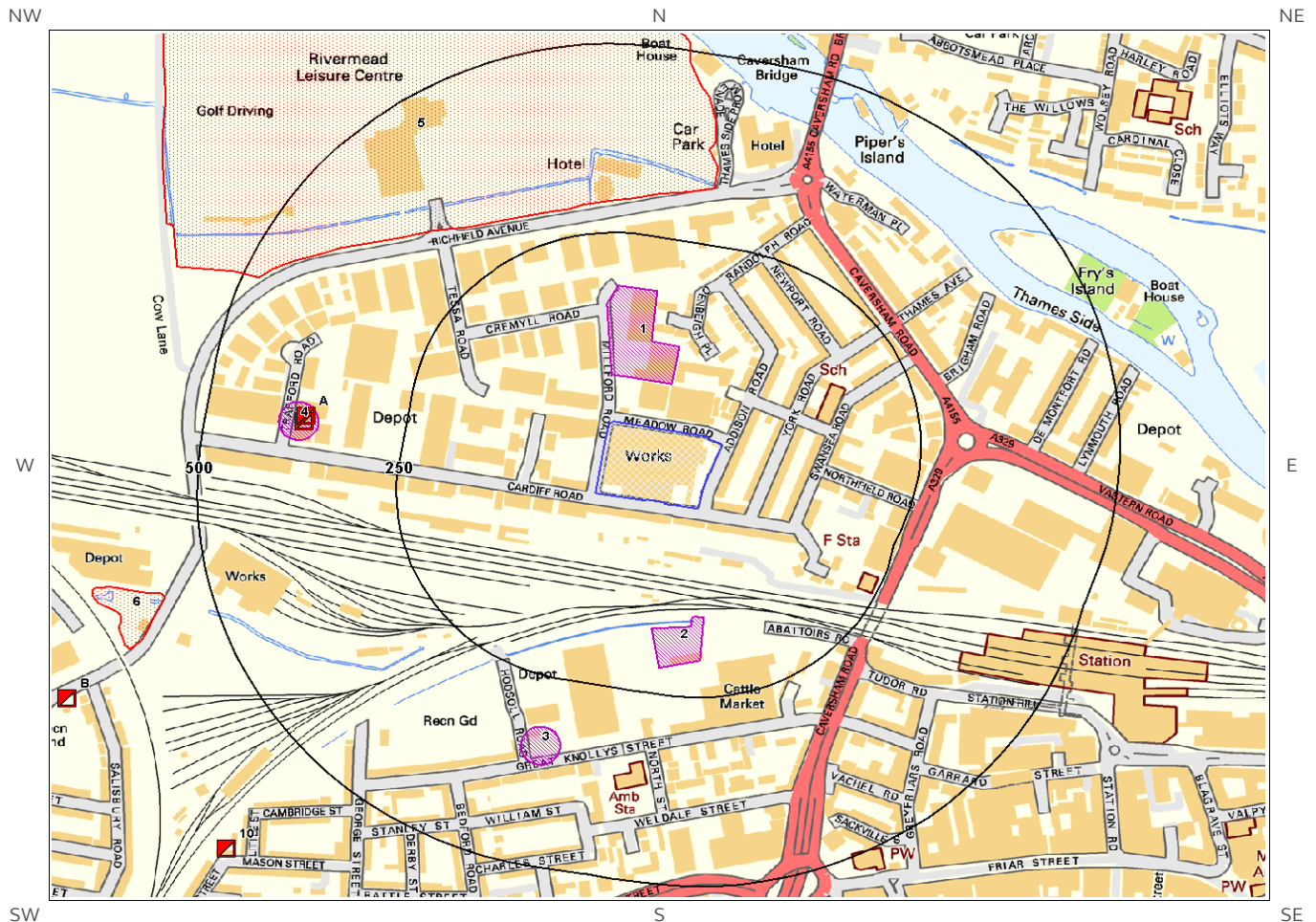
How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

1

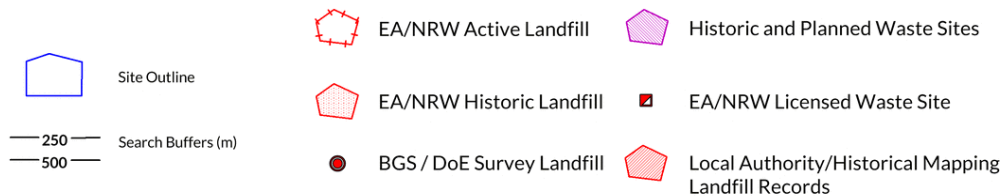
The following records are represented as polygons on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Description	Location	Category	Year Identified
11	431	SW	470470 173690	B(a)P in made ground and compost. Source of B(a)P probably ash added by allotment holders & adjacent railway runoff.	George Street Allotments, George Street, Reading	Potentially Contaminated Land	2008

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

2

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
5	286	N	470600 174500	Site Address: Richfield Avenue, Reading, Berkshire Waste Licence: - Site Reference: RDG11, TP0122 Waste Type: Commercial, Household, Liquid, sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1970 Last Recorded: 31-Dec-1979
6	558	W	470200 173900	Site Address: Cow Lane, Reading, Berkshire Waste Licence: - Site Reference: TP0340, RDG4 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1950 Last Recorded: 31-Dec-1959

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

4

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
1	60	N	470923 174279	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1969	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
2	143	S	470967 173873	Type of Site: Refuse Yard Site Address: N/A	Planning Application Reference: N/A Date: 1879	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
3	316	S	470794 173736	Type of Site: Surface Car Park/Waste Station Site Address: Great Knollys Street, Hodsoll Road, READING, Berkshire, RG1 7HP	Planning Application Reference: 96/0097/R3/NJP Date: 01/09/1996	Further Details: Relocation of a public car park and civic amenity recycling centre with associated landscaping. Relocation of a public car park and civic amenity recycling centre with associated landscaping. Detailed plans approved 29th May, 1996. An application (ref: 96/0097/R3/NJP) for Detailed Planning permission was submitted to Reading B.C. on 14th February 1996. Data Source: Historic Planning Application Data Type: Point

ID	Distance (m)	Direction	NGR	Details
4	359	W	470491 174166	Type of Site: Waste Transfer Building Site Address: 128-130 Cardiff Road, READING, Berkshire, RG1 8PQ Planning Application Reference: 01/316/FUL Date: - Further Details: Scheme comprises construction of a new steel-framed prefabricated building of 375 sqm, to form waste transfer, sorting and recycling centre. Associated works include landscaping, site services, infrastructure and access. Construction - Goosewing greystic-coated profiled steel cladding, internal partitions walls; insitu concrete floor; Goosewing grey plastic-coated profiled steel cladding roof; aluminium framed, double glazed, rooflight windows; industrial doors (unspecified), timber doors; pad foundations; steel frame; bathroom fittings. An application (ref: 01/316/FUL) for Detailed Planning permission was submitted to Reading Borough Council, no committee date as yet. Contract details to be advised. A building programme remains to be advised. Detailed plans submitted, no committee date as yet. Data Source: Historic Planning Application Data Type: Point

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

9

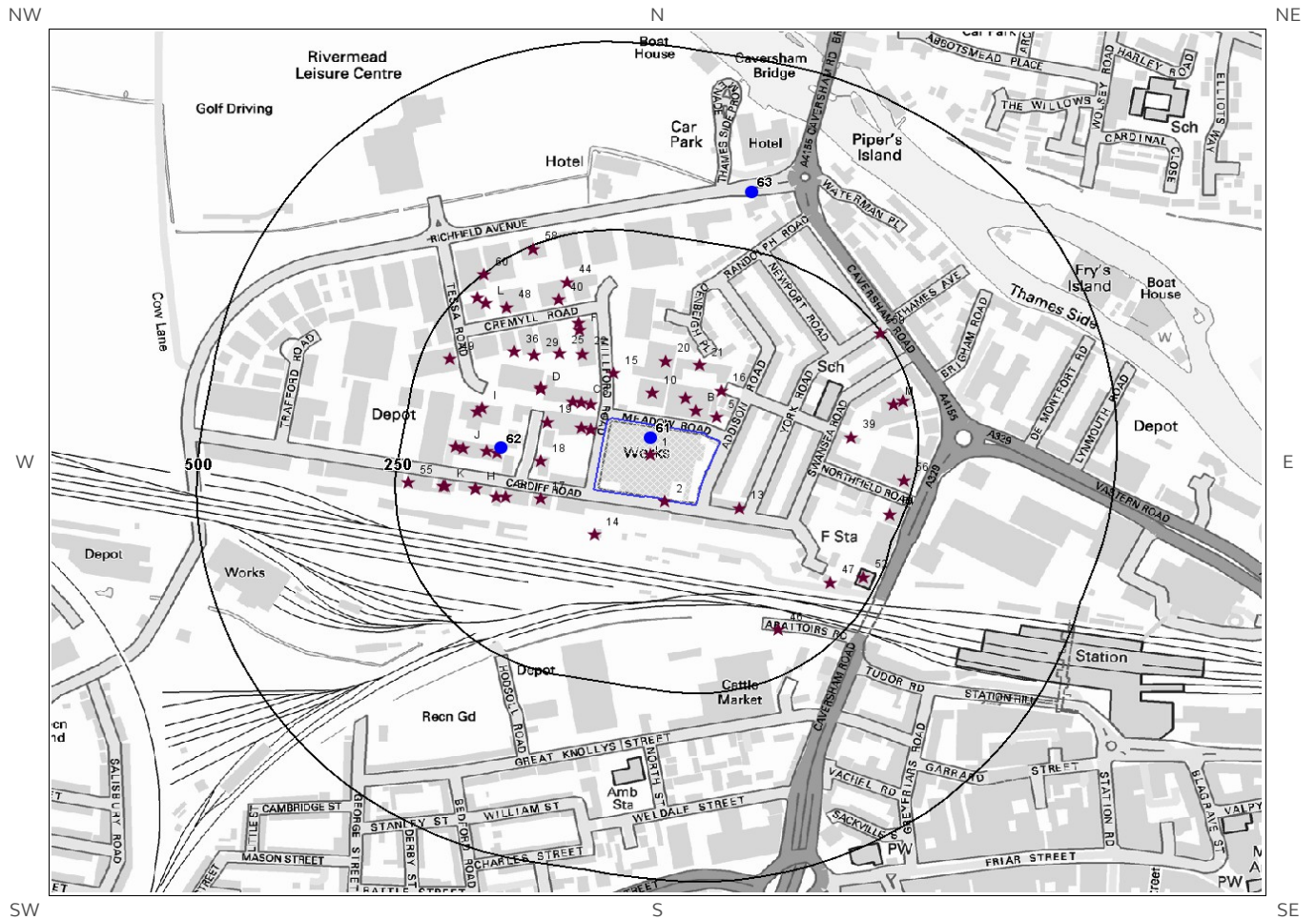
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
7A	376	W	470500 174174	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RCO001 EPR reference: EA/EPR/EB3500KB/T001 Operator: R Collard Limited Waste Management licence No: 101199 Annual Tonnage: 74999.0 Issue Date: 11/02/2010 Effective Date: 11/10/2016 Modified: 09/07/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: R Collard Limited Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
8A	376	W	470500 174174	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MCO003 EPR reference: EA/EPR/EP3893VZ/V002 Operator: M Collard Waste Management Services Ltd Waste Management licence No: 101199 Annual Tonnage: 74999.0	Issue Date: 11/02/2010 Effective Date: - Modified: 09/07/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: M Collard Waste Management Services Ltd Correspondence Address: -
9A	378	W	470497 174166	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte Materials Recycling Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MCO003 EPR reference: EP3893VZ/A001 Operator: M Collard Waste Management Services Ltd Waste Management licence No: 101199 Annual Tonnage: 0.0	Issue Date: 11/02/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: M Collard Waste Management Services Ltd Correspondence Address: -
10	661	SW	470400 173600	Site Address: E.G.W Carter, 54, Gower Street, Reading, Berkshire, RG1 7PE Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAR001 EPR reference: EA/EPR/LP3699EF/S004 Operator: E G W Carter Waste Management licence No: 86001 Annual Tonnage: 9322.0	Issue Date: 19/03/1996 Effective Date: - Modified: - Surrendered Date: 23/07/1999 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: E G W Carter Correspondence Address: -
11B	717	W	470200 173800	Site Address: Elliot Metal Company Ltd, 3, Loverock Road, Battle Farm Indus Est, Reading, Berkshire, RG3 1NL Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIM001 EPR reference: EA/EPR/LP3199EB/V006 Operator: Sims Group U K Ltd Waste Management licence No: 86002 Annual Tonnage: 74999.0	Issue Date: 06/04/1993 Effective Date: 27/04/2002 Modified: 27/08/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Sims Group U K Ltd Correspondence Address: -
12B	717	W	470200 173800	Site Address: Elliot Metal Company Ltd, 3, Loverock Road, Battle Farm Indus Est, Reading, Berkshire, RG3 1NL Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PAR197 EPR reference: EA/EPR/CB3909KB/S002 Operator: Parsons Metal Recycling Limited Waste Management licence No: 86002 Annual Tonnage: 0.0	Issue Date: 06/04/1993 Effective Date: 26/06/2015 Modified: 27/08/2014 Surrendered Date: 08/03/2016 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Parsons Metal Recycling Limited Correspondence Address: -
13B	717	W	470200 173800	Site Address: Elliot Metal Company Ltd, 3, Loverock Road, Battle Farm Indus Est, Reading, RG3 1NL Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIM001 EPR reference: - Operator: Simsmetal Uk Limited Waste Management licence No: 86002 Annual Tonnage: 4999.0	Issue Date: 06/04/1993 Effective Date: 27/04/2002 Modified: 26/04/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Simsmetal U K Limited Correspondence Address: 4, The Uplands, Nailsea, Somerset, BS48 4RR

ID	Distance (m)	Direction	NGR	Details
14B	717	W	470200 173800	Site Address: Elliot Metal Company Ltd, 3, Loverock Road, Battle Farm Indus Est, Reading, Berkshire, RG3 1NL Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIM001 EPR reference: EA/EPR/LP3199EB/V005 Operator: Sims Group Uk Limited Waste Management licence No: 86002 Annual Tonnage: 74999.0 Issue Date: 06/04/1993 Effective Date: 27/04/2002 Modified: 20/04/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Sims Group U K Ltd Correspondence Address: -
Not shown	1146	W	469718 174096	Site Address: Part A, Unit B, 75, Loverock Road, Tilehurst, Reading, Berkshire, RG30 1DZ Type: 75kte HCl Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: OAK056 EPR reference: EA/EPR/EP3993VE/A001 Operator: Oakford U K Ltd Waste Management licence No: 101222 Annual Tonnage: 74999.0 Issue Date: 18/11/2009 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Loverock Road Waste Transfer Station Correspondence Address: -

4. Current Land Use Map



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Site Outline

★ Current Industrial Sites

— Electricity Transmission Cables

— 250 — Search Buffers (m)
— 500 —

● Petrol & Fuel Sites

— Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

60

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Works	470934 174118	Works, RG1	Unspecified Works Or Factories	Industrial Features
2	0	S	Electricity Sub Station	470952 174056	Electricity Sub Station, RG1	Electrical Features	Infrastructure and Facilities
3A	19	W	C F M Engineering	470859 174151	C F M Engineering, Unit 21, Milford Road, Reading, RG1 8LG	Vehicle Repair, Testing and Servicing	Repair and Servicing
4A	19	W	Car & Motor Sports Services	470859 174152	Car & Motor Sports Services, Unit 21-23, Milford Road, Reading, RG1 8LG	Vehicle Repair, Testing and Servicing	Repair and Servicing
5	27	NE	Works	471018 174168	Works, RG1	Unspecified Works Or Factories	Industrial Features
6B	29	N	Manrose	470992 174176	Manrose, Unit 1-6, Meadow Road, Reading, RG1 8LB	Cooling and Refrigeration	Industrial Products
7A	30	W	Body Vision	470848 174153	Body Vision, Unit 25, Milford Road, Reading, RG1 8LG	Vehicle Repair, Testing and Servicing	Repair and Servicing
8	31	NW	Lewington & Son	470859 174184	Lewington & Son, Unit 43-45, Milford Road, Reading, RG1 8LG	Conservatories	Consumer Products
9C	41	NW	V-tech Auto Ltd	470848 174187	V-tech Auto Ltd, Unit 47, Milford Road, Reading, RG1 8LG	Vehicle Repair, Testing and Servicing	Repair and Servicing
10	42	N	Warehouse	470937 174200	Warehouse, RG1	Container and Storage	Transport, Storage and Delivery
11B	43	N	Works	470979 174193	Works, RG1	Unspecified Works Or Factories	Industrial Features
12C	50	NW	Climate Cooling Ltd	470837 174188	Climate Cooling Ltd, Unit 51, Milford Road, Reading, RG1 8LG	Construction Completion Services	Construction Services
13	53	E	Euro Car Parts	471046 174046	Euro Car Parts, 4 Weighbridge Row, Cardiff Road, Reading, RG1 8LX	Vehicle Parts and Accessories	Motoring
14	58	S	Travelling Crane	470864 174012	Travelling Crane, RG1	Travelling Cranes and Gantries	Industrial Features
15	60	N	Electricity Sub Station	470888 174226	Electricity Sub Station, RG1	Electrical Features	Infrastructure and Facilities
16	61	N	Electricity Sub Station	471024 174203	Electricity Sub Station, RG1	Electrical Features	Infrastructure and Facilities

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
17	69	W	Reading Drive in Ltd	470796 174059	Reading Drive in Ltd, 137-139, Cardiff Road, Reading, RG1 8JF	Vehicle Repair, Testing and Servicing	Repair and Servicing
18	74	W	Rivermead Accident & Repair Centre Ltd	470795 174109	Rivermead Accident & Repair Centre Ltd, 64, Cardiff Road, Reading, RG1 8LL	Vehicle Repair, Testing and Servicing	Repair and Servicing
19	74	W	Hilton Car Rental Ltd	470804 174161	Hilton Car Rental Ltd, Unit 39, Milford Road, Reading, RG1 8LG	Vehicle Hire and Rental	Hire Services
20	87	N	Seven Sixty Logistics	470953 174242	Seven Sixty Logistics, Unit 52, Milford Road, Reading, RG1 8LJ	Distribution and Haulage	Transport, Storage and Delivery
21	89	N	Depot	470997 174237	Depot, RG1	Container and Storage	Transport, Storage and Delivery
22	94	NW	Voke Flooring & Interiors	470849 174252	Voke Flooring & Interiors, 67, Milford Road, Reading, RG1 8LG	Construction Completion Services	Construction Services
23D	95	NW	Tank	470796 174205	Tank, RG1	Tanks (Generic)	Industrial Features
24D	96	NW	Tank	470796 174208	Tank, RG1	Tanks (Generic)	Industrial Features
25	109	NW	Tank	470820 174253	Tank, RG1	Tanks (Generic)	Industrial Features
26E	112	W	Reading Body Works	470752 174062	Reading Body Works, Dec House 145, Cardiff Road, Reading, RG1 8JF	Vehicle Repair, Testing and Servicing	Repair and Servicing
27E	124	W	Mark Allen Cars	470739 174062	Mark Allen Cars, 149, Cardiff Road, Reading, RG1 8JF	Vehicle Repair, Testing and Servicing	Repair and Servicing
28F	124	N	Complete Connections	470845 174283	Complete Connections, Unit 75, Milford Road, Reading, RG1 8LG	Electronic Equipment	Industrial Products
29	128	NW	Tank	470788 174250	Tank, RG1	Tanks (Generic)	Industrial Features
30G	130	W	Shadow Supplies Metal Working	470741 174120	Shadow Supplies Metal Working, 6 Barrett Court 70, Cardiff Road, Reading, RG1 8ED	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
31F	134	N	Twofold Ltd	470844 174292	Twofold Ltd, 77, Milford Road, Reading, RG1 8LG	Office and Shop Equipment	Industrial Products
32G	142	W	P B E Marking Systems	470728 174122	P B E Marking Systems, 5 Barrett Court 70, Cardiff Road, Reading, RG1 8ED	Plate Makers, Print Finishers and Type Setters	IT, Advertising, Marketing and Media Services
33H	150	W	Holt Screenprint	470714 174072	Holt Screenprint, Unit 5 151-155, Cardiff Road, Reading, RG1 8JR	Plate Makers, Print Finishers and Type Setters	IT, Advertising, Marketing and Media Services
34H	150	W	Pentagon Glasstech	470714 174072	Pentagon Glasstech, Unit 2-3 151-155, Cardiff Road, Reading, RG1 8JR	Industrial Coatings and Finishings	Industrial Products
35H	150	W	B & H Motor Services	470714 174072	B & H Motor Services, Unit 1 151-155, Cardiff Road, Reading, RG1 8JR	Vehicle Breakdown and Recovery Services	Personal, Consumer and Other Services
36	150	NW	Tank	470763 174255	Tank, RG1	Tanks (Generic)	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
37I	159	W	Goodman Steel Services	470722 174180	Goodman Steel Services, 98, Cardiff Road, Reading, RG1 8LL	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
38I	164	W	Depot	470716 174175	Depot, RG1	Container and Storage	Transport, Storage and Delivery
39	165	E	Warehouse	471187 174141	Warehouse, RG1	Container and Storage	Transport, Storage and Delivery
40	172	NW	Reading Extinguisher Services	470819 174324	Reading Extinguisher Services, 14, Cremyll Road, Reading, RG1 8NQ	Special Purpose Machinery and Equipment	Industrial Products
41J	172	W	Direct Distribution Services	470698 174126	Direct Distribution Services, 2 Barrett Court 70, Cardiff Road, Reading, RG1 8ED	Distribution and Haulage	Transport, Storage and Delivery
42J	182	W	Pretech Engineering	470689 174129	Pretech Engineering, 1 Barrett Court 70, Cardiff Road, Reading, RG1 8ED	Precision Engineers	Engineering Services
43K	188	W	N R Engineering Ltd	470675 174075	N R Engineering Ltd, 159, Cardiff Road, Reading, RG1 8JR	Precision Engineers	Engineering Services
44	190	N	Tank	470830 174347	Tank, RG1	Tanks (Generic)	Industrial Features
45K	190	W	Adenville Ltd	470674 174076	Adenville Ltd, 157, Cardiff Road, Reading, RG1 8JR	Industrial Coatings and Finishings	Industrial Products
46	194	SE	Limo Hire London	471095 173885	Limo Hire London, 1, Abattoirs Road, Reading, RG1 7BL	Vehicle Hire and Rental	Hire Services
47	197	SE	Pylon	471161 173948	Pylon, RG1	Electrical Features	Infrastructure and Facilities
48	198	NW	Expro North Sea Ltd	470753 174313	Expro North Sea Ltd, 2-4, Cremyll Road, Reading, RG1 8NQ	Oil and Gas Extraction, Refinery and Product Manufacture	Extractive Industries
49	215	NW	Cotswold Fayre	470681 174245	Cotswold Fayre, Unit 14, Tessa Road, Reading, RG1 8HH	Catering and Non Specific Food Products	Foodstuffs
50L	219	NW	Tank	470727 174319	Tank, RG1	Tanks (Generic)	Industrial Features
51M	225	E	Works	471241 174185	Works, RG1	Unspecified Works Or Factories	Industrial Features
52	230	SE	Caversham Road Fire Station	471202 173955	Caversham Road Fire Station, Caversham Road, Reading, RG1 8AA	Fire Brigade Stations	Central and Local Government
53L	232	NW	Electricity Sub Station	470716 174326	Electricity Sub Station, RG1	Electrical Features	Infrastructure and Facilities
54	234	E	Drews the Ironmongers	471236 174038	Drews the Ironmongers, 71-73, Caversham Road, Reading, RG1 8JA	General Construction Supplies	Industrial Products
55	234	W	Warehouse	470630 174081	Warehouse, RG1	Container and Storage	Transport, Storage and Delivery
56	236	E	Shurgard Self Storage	471253 174083	Shurgard Self Storage, 75, Caversham Road, Reading, RG1 8AN	Container and Storage	Transport, Storage and Delivery
57M	237	E	Caversham MOT	471252 174189	Caversham MOT, 109, Caversham Road, City Centre, Reading, RG1 8AR	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
58	246	NW	Delta Air Conditioning	470786 174391	Delta Air Conditioning, 20-22, Richfield Avenue, Reading, RG1 8EQ	Construction Completion Services	Construction Services
59	248	NE	The Scooter Cafe	471223 174279	The Scooter Cafe, 153, Caversham Road, Reading, RG1 8AU	New Vehicles	Motoring
60	249	NW	Tank	470725 174357	Tank, RG1	Tanks (Generic)	Industrial Features

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

3

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
61	0	On Site	470934 174140	Obsolete	Brs Southern, Cardiff Road, Cardiff Road, Reading, Reading, RG1 8HW	Not Applicable	Obsolete
62	126	W	470746 174126	Obsolete	Cardiff Road Service Station, 165-7, Cardiff Road, Cardiff Road, Reading, Reading, RG1 8HY	Not Applicable	Obsolete
63	326	N	471062 174466	BP	Rss Reading, Richfield Avenue, Richfield Avenue, Reading, Reading, RG1 8EQ	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

5.3 Bedrock and Solid Geology

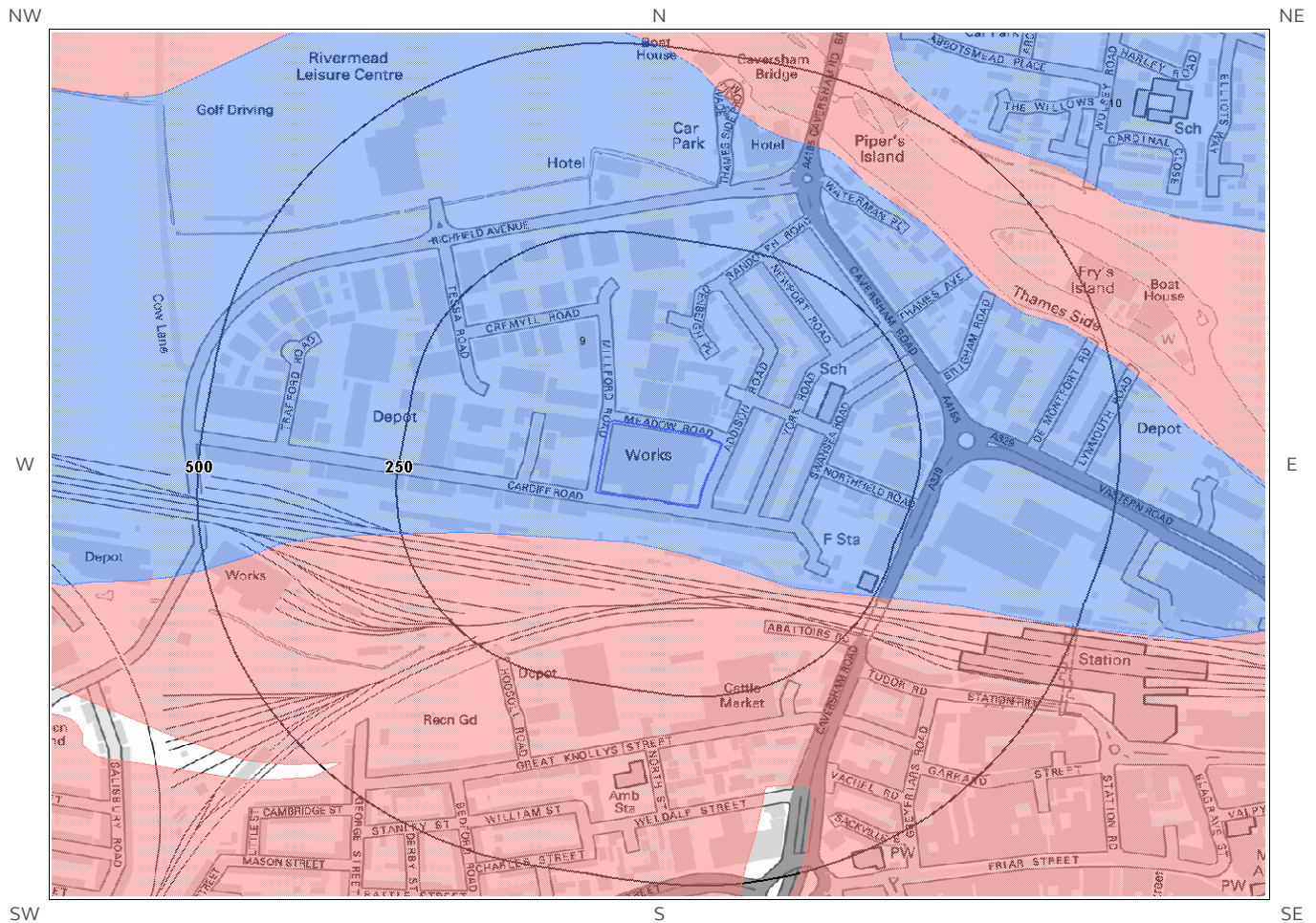
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
SNCK-CHLK	SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED)	CHALK

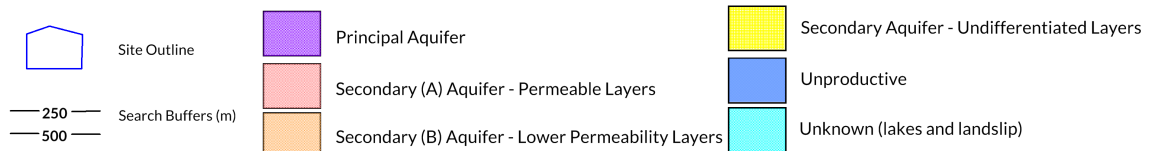
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

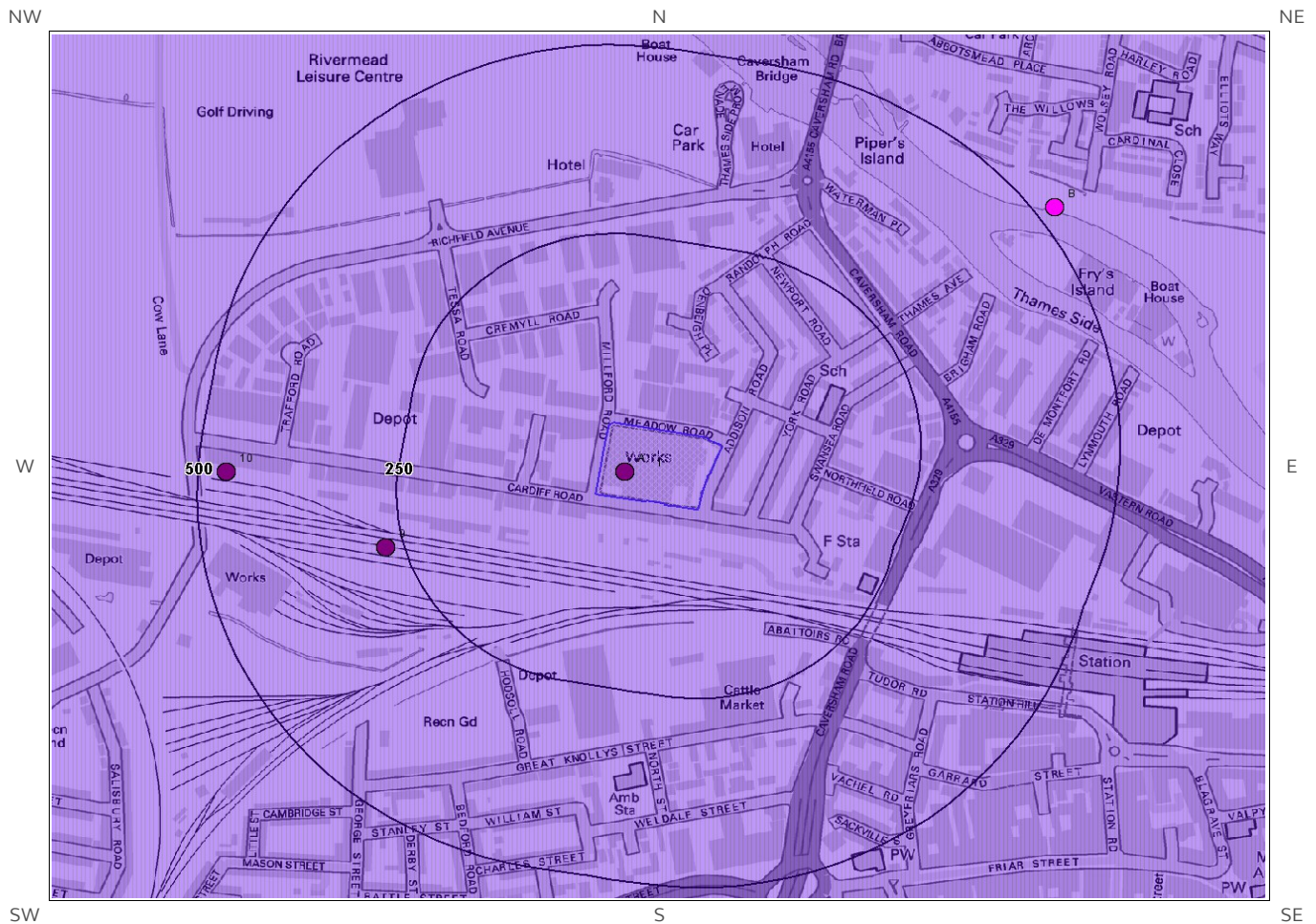
6a. Aquifer Within Superficial Geology



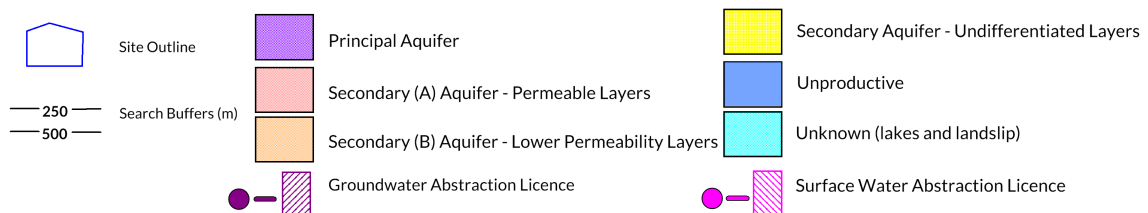
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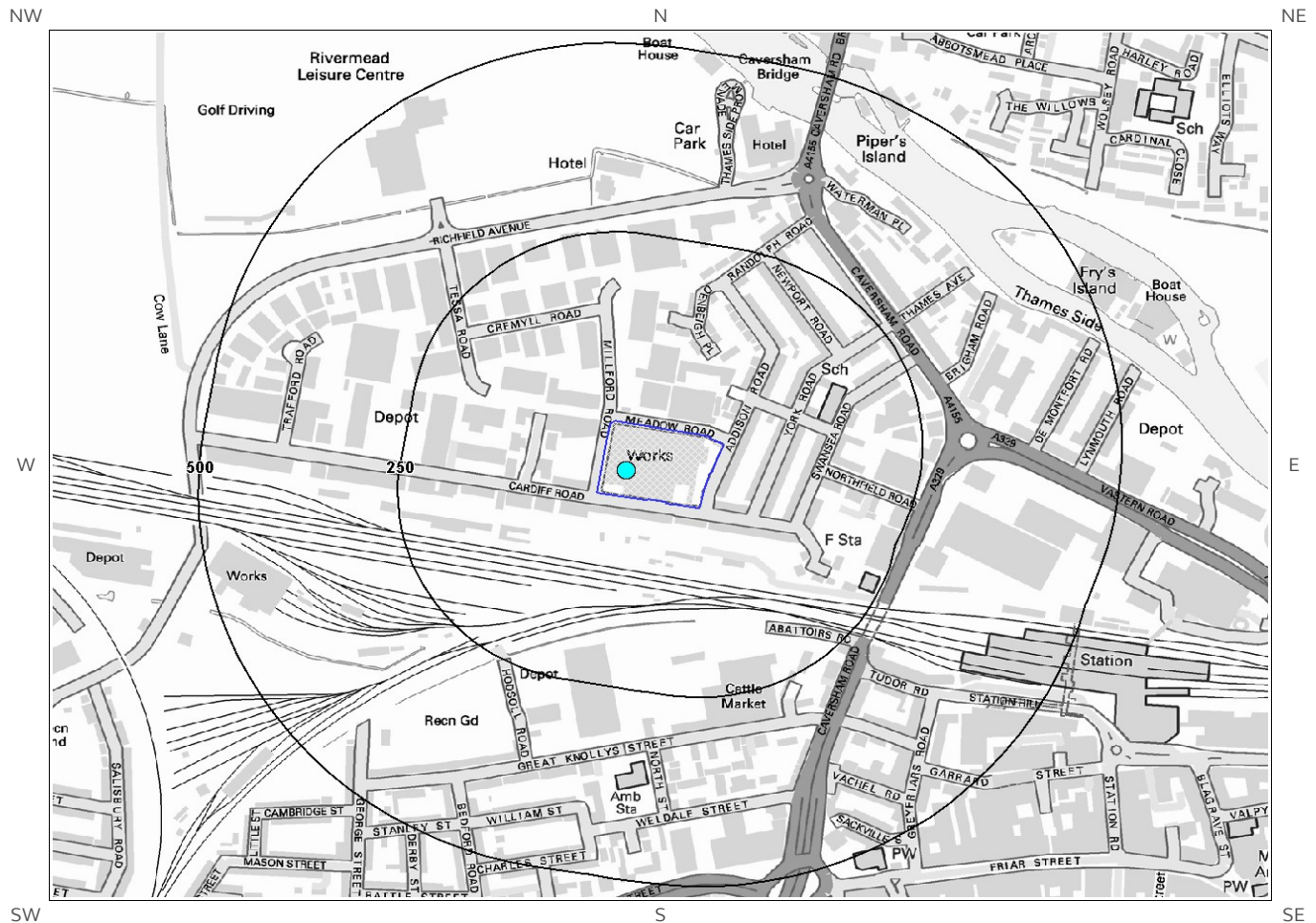
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



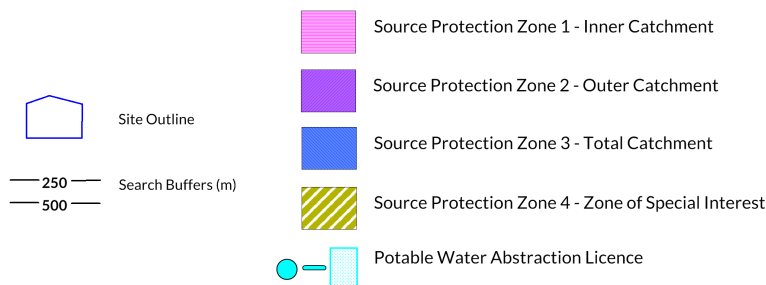
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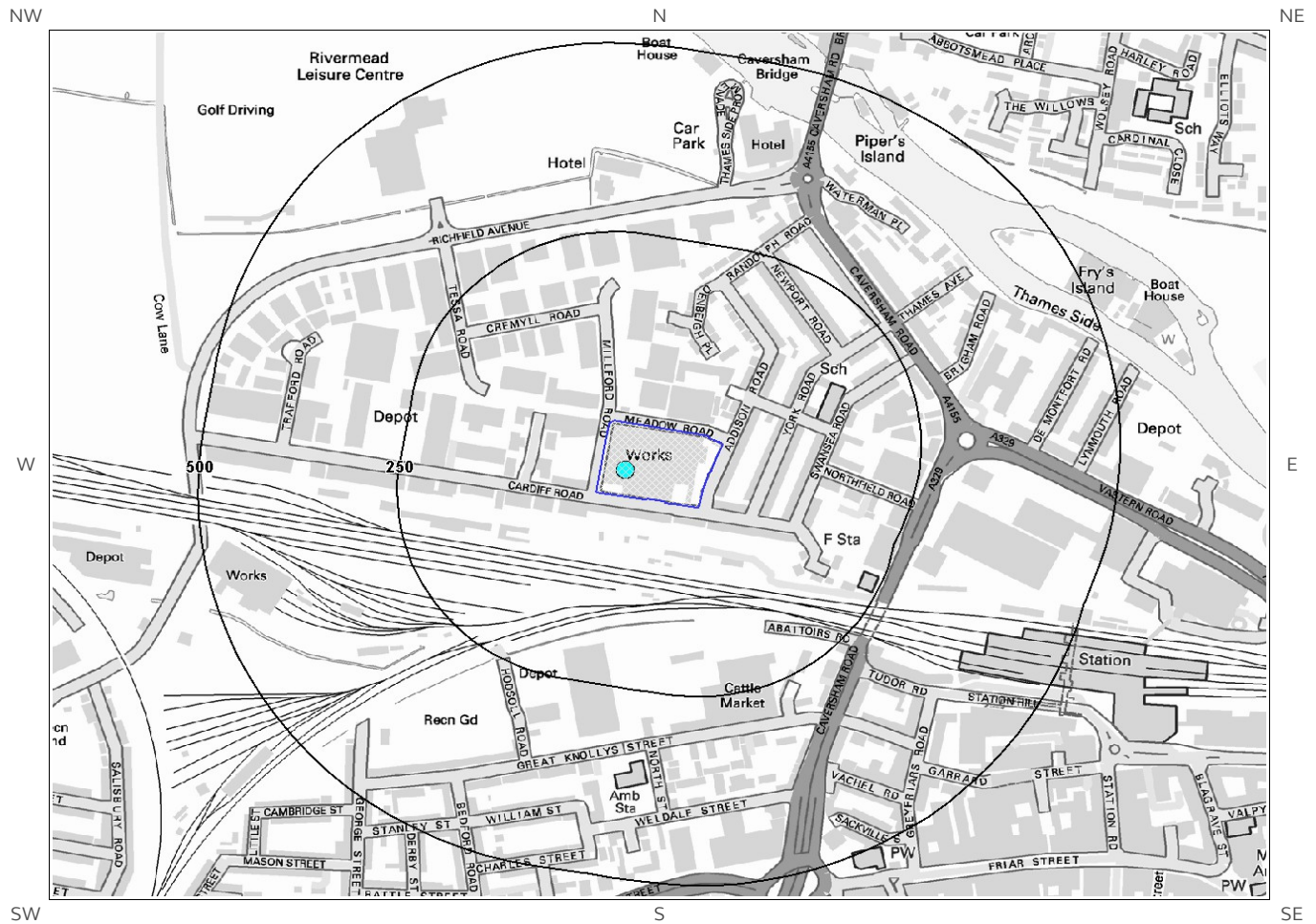
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



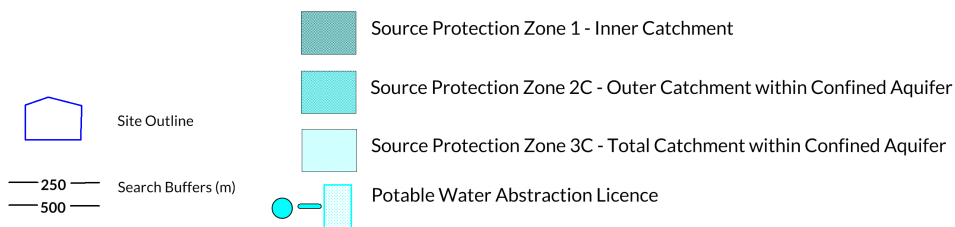
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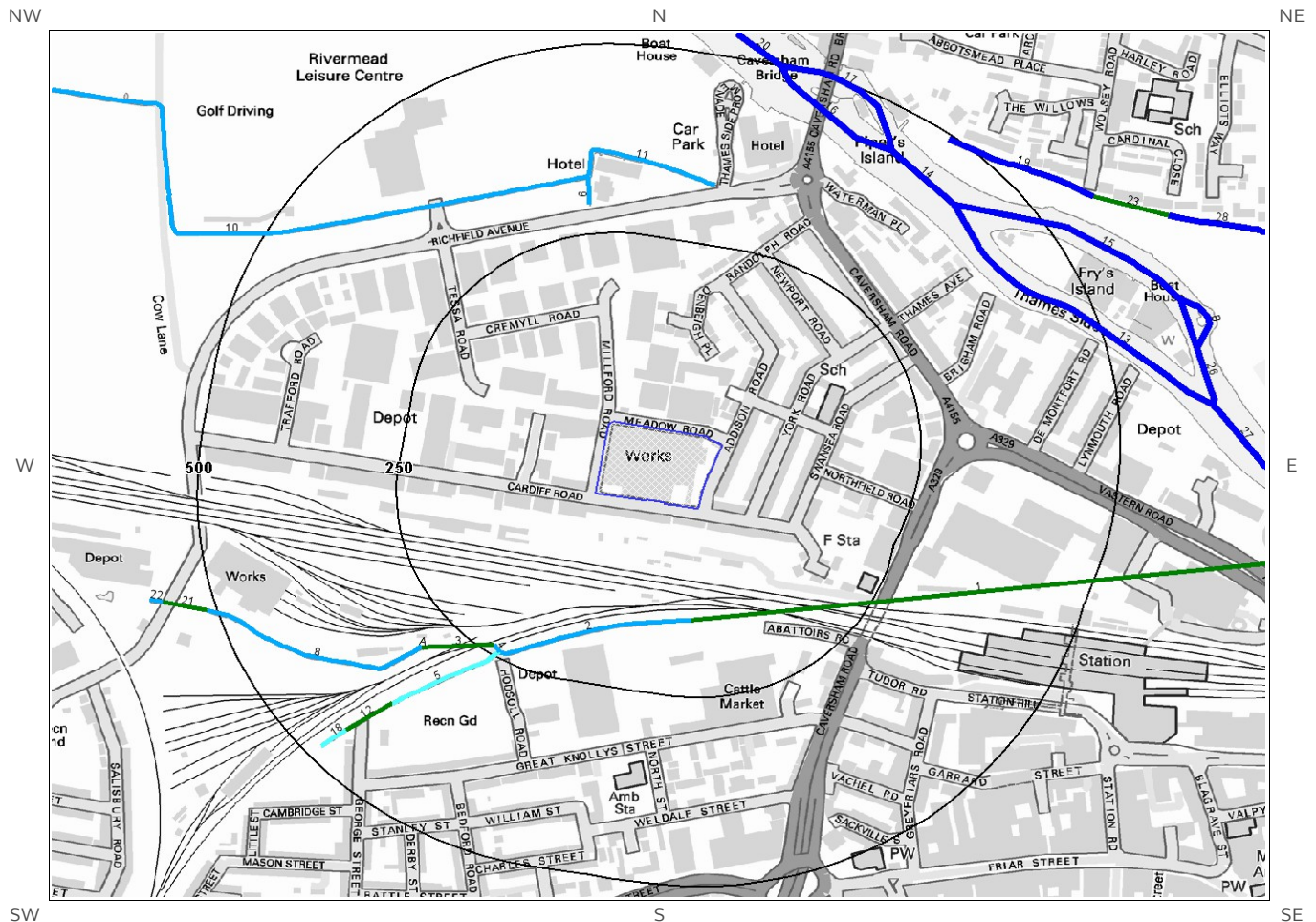
6d. Hydrogeology – Source Protection Zones within confined aquifer



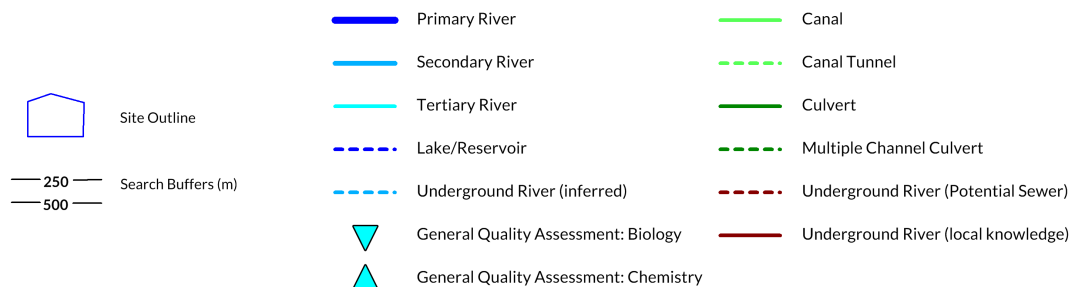
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6e. Hydrology – Detailed River Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
9	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	58	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
5A	0	On Site	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: Meadow Road, Reading, Berkshire Data Type: Point Name: MANROSE MANUFACTURING LTD Annual Volume (m³): 90920 Max Daily Volume (m³): 727.4 Original Application No: - Original Start Date: 23/1/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/6/2006 Version End Date:
6A	0	On Site	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Meadow Road, Reading, Berkshire Data Type: Point Name: MANROSE MANUFACTURING LTD Annual Volume (m³): 90920 Max Daily Volume (m³): 727.4 Original Application No: - Original Start Date: 23/1/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/6/2006 Version End Date:
7A	0	On Site	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Cardiff Road, Reading, Berkshire Data Type: Point Name: COX & WYMAN LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: WR.A/1988 Original Start Date: 11/7/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/7/1966 Version End Date:
8A	0	On Site	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: Cardiff Road, Reading, Berkshire Data Type: Point Name: COX & WYMAN LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: WR.A/1988 Original Start Date: 11/7/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/7/1966 Version End Date:
9	273	W	470600 174000	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: Thames Groundwater Point: Cardiff Road, Reading Point B Data Type: Point Name: HILLIER GROUP OF COMPANIES Annual Volume (m³): 6682 Max Daily Volume (m³): 27.28 Original Application No: WR.A/4547 Original Start Date: 22/1/1975 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:
10	465	W	470400 174100	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: Thames Groundwater Point: Cardiff Road, Reading Point A Data Type: Point Name: HILLIER GROUP OF COMPANIES Annual Volume (m³): 6682 Max Daily Volume (m³): 27.28 Original Application No: WR.A/4547 Original Start Date: 22/1/1975 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	588	S	471200 173500	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Cheapside, Reading, Berkshire Data Type: Point Name: PRIMARK STORES LIMITED	Annual Volume (m³): 14933 Max Daily Volume (m³): 40.91 Original Application No: - Original Start Date: 11/7/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:
Not shown	792	W	470100 174300	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (e) Data Type: Point Name: DRAYTON	Annual Volume (m³): 9819 Max Daily Volume (m³): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	895	NW	470100 174600	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (d) Data Type: Point Name: DRAYTON	Annual Volume (m³): 9819 Max Daily Volume (m³): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	917	E	471900 174400	Status: Active Licence No: 28/39/23/0020 Details: Laundry Use Direct Source: Thames Groundwater Point: 72 George Street, Caversham, - Borehole 'a' Data Type: Point Name: Berendsen UK Limited	Annual Volume (m³): 68190 Max Daily Volume (m³): 300.04 Original Application No: NPS/WR/021020 Original Start Date: 9/5/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/1/2016 Version End Date:
Not shown	1077	W	469800 173900	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Battle Hospital, Oxford Road, Reading Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY	Annual Volume (m³): 136875 Max Daily Volume (m³): 400 Original Application No: WRA/5942 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: 7/1/1999 Version End Date:
Not shown	1204	W	469700 174400	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (b) Data Type: Point Name: DRAYTON	Annual Volume (m³): 9819 Max Daily Volume (m³): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1204	W	469700 174400	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (c) Data Type: Point Name: DRAYTON	Annual Volume (m³): 9819 Max Daily Volume (m³): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1370	W	469500 174200	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (a) Data Type: Point Name: DRAYTON	Annual Volume (m ³): 9819 Max Daily Volume (m ³): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1760	E	472700 173600	Status: Historical Licence No: 28/39/22/0600 Details: Pollution Remediation Direct Source: Thames Groundwater Point: Former Gasworks, Kenavon Drive, Reading (5 Boreholes) Data Type: Point Name: M J GLEESON GROUP PLC	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WRW/A/1061 Original Start Date: 31/7/2000 Expiry Date: 31/08/2001 Issue No: 1 Version Start Date: 31/7/2000 Version End Date:
Not shown	1833	W	469100 174600	Status: Historical Licence No: 28/39/23/0137 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Scours Lane, Reading (a - R) Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR.A/2453/4 Original Start Date: 17/11/1976 Expiry Date: - Issue No: 100 Version Start Date: 17/11/1976 Version End Date:
Not shown	1882	SE	472400 172800	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Royal Berkshire Hospital Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL	Annual Volume (m ³): 127750 Max Daily Volume (m ³): 350 Original Application No: WRA/5950 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/1/1992 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
22B	523	NE	471440 174450	Status: Historical Licence No: 28/39/23/0199/TR Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Thames Surface Water - Non Tidal Point: River Thames - Christchurch Meadows Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m ³): 1752000 Max Daily Volume (m ³): 4800 Application No: WRW/A/1218 Original Start Date: 10/9/2008 Expiry Date: 31/3/2016 Issue No: 1 Version Start Date: 10/9/2008 Version End Date:
23B	523	NE	471440 174450	Status: Historical Licence No: 28/39/23/0196 Details: Lake & Pond Throughflow Direct Source: Thames Surface Water - Non Tidal Point: Thames At Christchurch Meadow Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Application No: WRW/A/1115 Original Start Date: 12/5/2003 Expiry Date: 31/3/2016 Issue No: 1 Version Start Date: 1/4/2006 Version End Date:

ID	Distance (m)	Direction	NGR	Details
24B	523	NE	471440 174450	Status: Historical Licence No: 28/39/23/0196 Details: Transfer between sources Direct Source: Thames Surface Water - Non Tidal Point: Thames At Christchurch Meadow Data Type: Point Name: READING BOROUGH COUNCIL Annual Volume (m³): - Max Daily Volume (m³): - Application No: WRW/A/1115 Original Start Date: 12/5/2003 Expiry Date: 31/3/2016 Issue No: 1 Version Start Date: 12/5/2003 Version End Date:
Not shown	1051	E	472072 174185	Status: Active Licence No: TH/039/0023/022 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Thames Surface Water - Non Tidal Point: River Thames At Caversham Weir Data Type: Point Name: The Reading Sustainability Centre CIC Annual Volume (m³): 0 Max Daily Volume (m³): 0 Application No: NPS/WR/020629 Original Start Date: 19/2/2016 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 19/2/2016 Version End Date:
Not shown	1080	SE	471590 173150	Status: Active Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: Thames Surface Water - Non Tidal Point: St.giles Stream At The Oracle Centre, Reading Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Annual Volume (m³): 737856 Max Daily Volume (m³): 2016 Application No: - Original Start Date: 16/2/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/2/2000 Version End Date:
Not shown	1080	SE	471590 173150	Status: Historical Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: Thames Surface Water - Non Tidal Point: The Oracle Centre, Reading Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 16/2/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/2/2000 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details
1A	0	On Site	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Cardiff Road, Reading, Berkshire Data Type: Point Name: COX & WYMAN LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: WR.A/1988 Original Start Date: 11/7/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
2A	0	On Site	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Meadow Road, Reading, Berkshire Data Type: Point Name: MANROSE MANUFACTURING LTD Annual Volume (m³): 90920 Max Daily Volume (m³): 727.4 Original Application No: - Original Start Date: 23/1/1990 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	588	S	471200 173500	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Cheapside, Reading, Berkshire Data Type: Point Name: PRIMARK STORES LIMITED Annual Volume (m³): 14933 Max Daily Volume (m³): 40.91 Original Application No: - Original Start Date: 11/7/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	1077	W	469800 173900	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Battle Hospital, Oxford Road, Reading Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY Annual Volume (m³): 136875 Max Daily Volume (m³): 400 Original Application No: WRA/5942 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1882	SE	472400 172800	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Royal Berkshire Hospital Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL Annual Volume (m³): 127750 Max Daily Volume (m³): 350 Original Application No: WRA/5950 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1116	E	472135 174053	River Name: Thames Reach: Whitchurch Stw - Kennet End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1195	SE	472020 173440	River Name: Kennet Reach: Holy Brook - Thames End/Start of Stretch: Start of Stretch NGR	B	A	A	A	A
Not shown	1195	SE	472020 173440	River Name: Kennet Reach: Foudry Brook - Holy Brook End/Start of Stretch: End of Stretch NGR	B	A	A	A	A
Not shown	1294	S	471351 172807	River Name: Kennet Reach: Foudry Brook - Holy Brook End/Start of Stretch: Sample Point NGR	B	A	A	A	A

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details
1	146	S	River Name: - Welsh River Name: - Alternative Name: - River Type: Culvert Main River Status: Currently Undefined
2	148	S	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
3	238	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Culvert Main River Status: Currently Undefined
4	238	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
5	242	SW	River Name: Drain Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
6	288	N	River Name: Drain Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
7A	299	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
8	300	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
9A	300	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
10	324	N	River Name: Drain Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
11	327	N	River Name: Drain Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
12	378	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Culvert Main River Status: Currently Undefined
13	414	NE	River Name: River Thames Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined
14	431	NE	River Name: River Thames Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined
15	431	NE	River Name: River Thames Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined
16	438	NE	River Name: River Thames Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined
17	443	NE	River Name: River Thames Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
18	443	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
19	494	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
20	500	N	River Name: River Thames Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

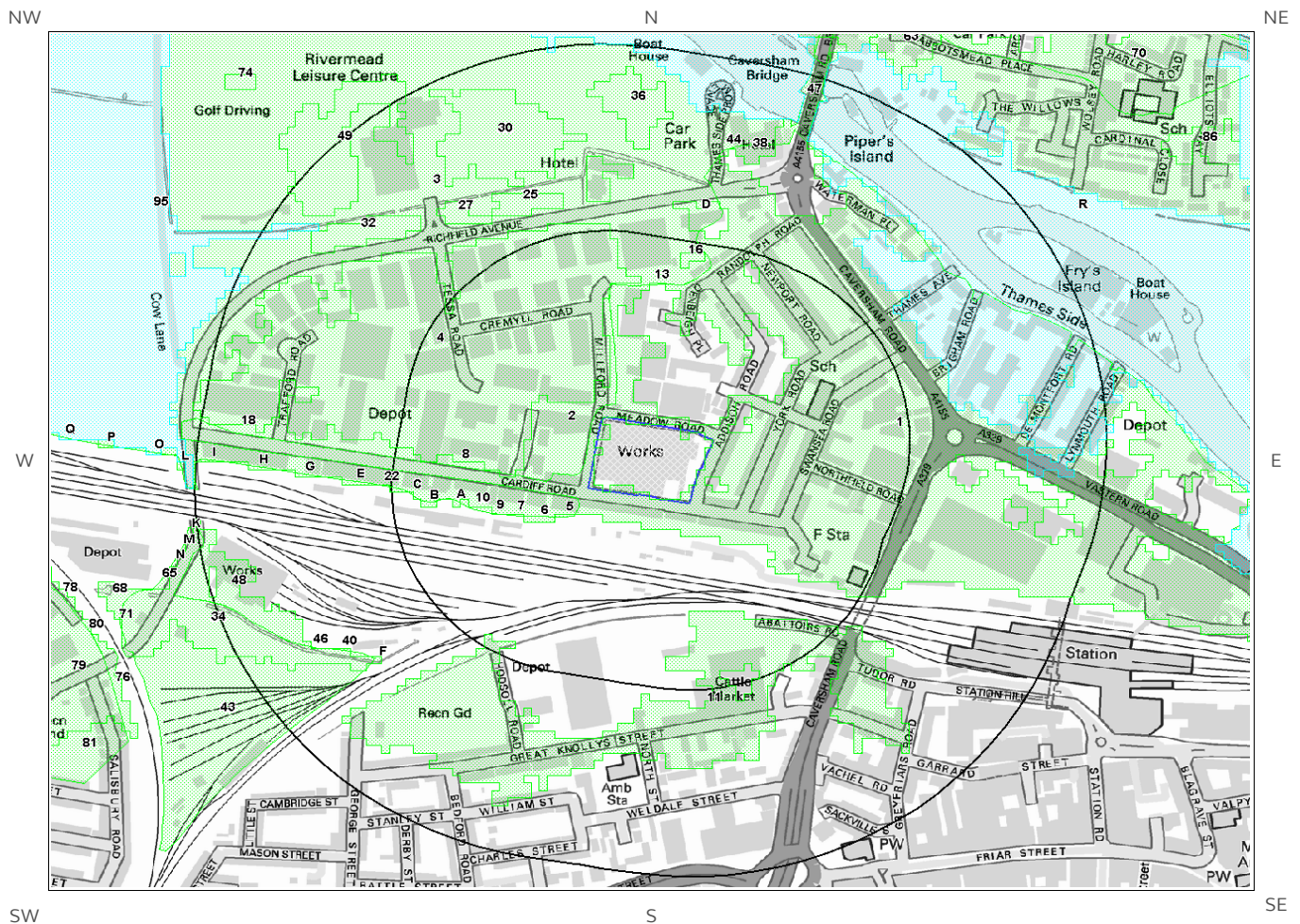
6.11 Surface Water Features

Are there any surface water features within 250m of the study site? Yes

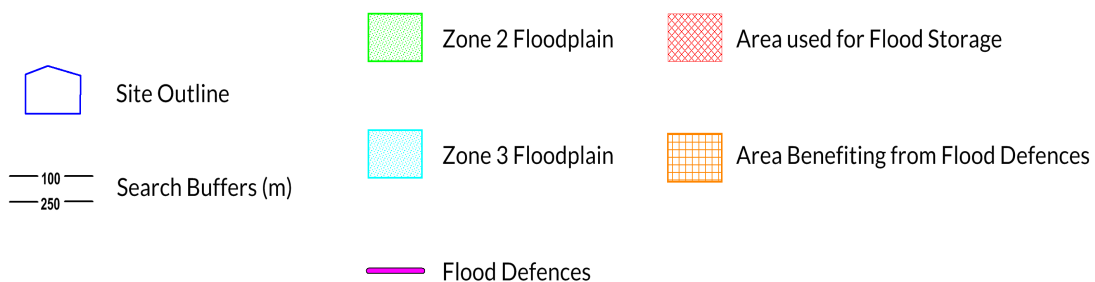
The following surface water records are not represented on mapping:

Distance (m)	Direction
233	SW
248	SW

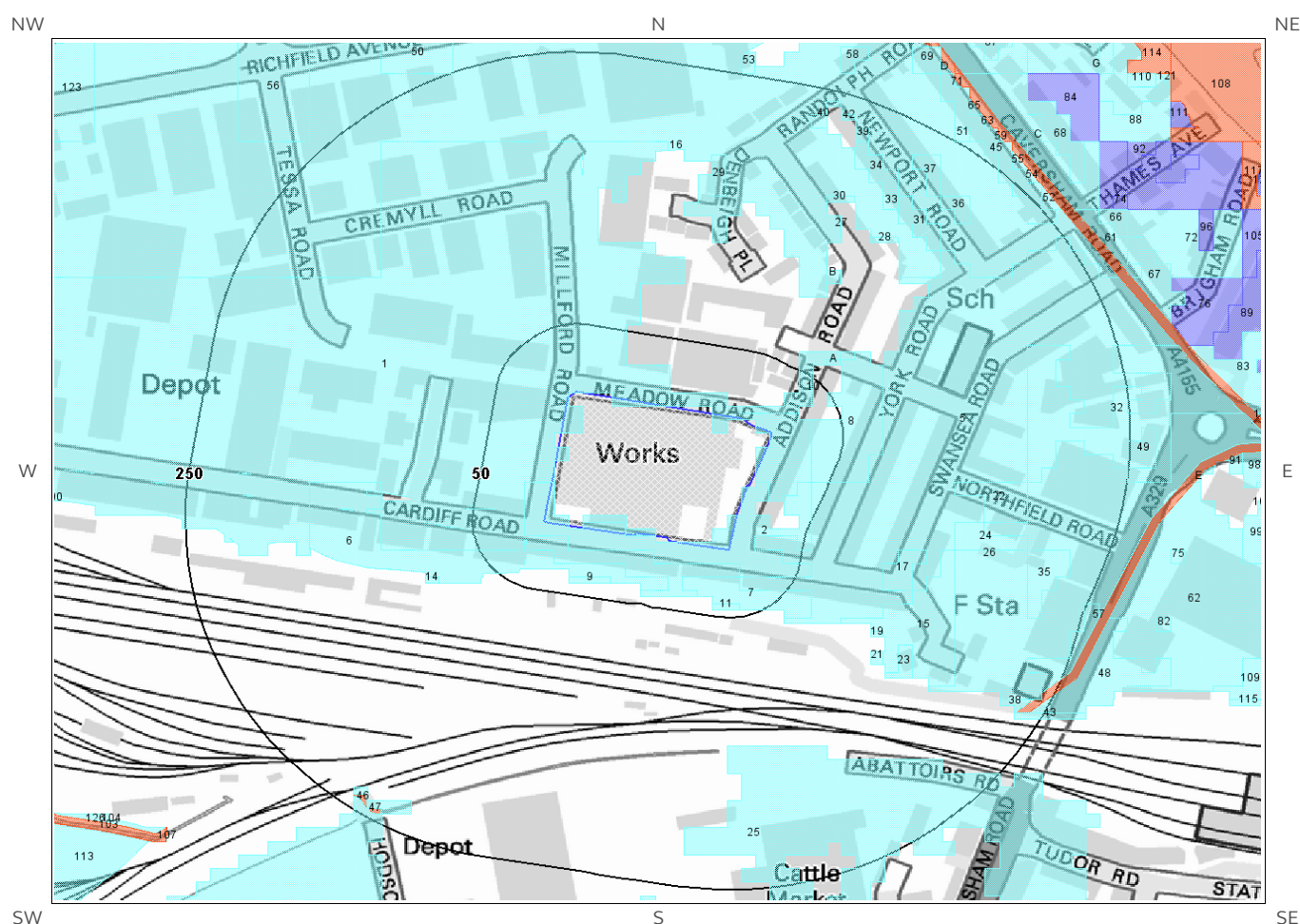
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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 Site Outline
 Search Buffers (m)

RoFRaS Rating
 Very Low
 Low
 Medium
 High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? Yes

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
2	10	NW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
3	19	SW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
4	25	NW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
5	39	SW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
6	57	SW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
7	90	SW	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
8	115	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
9	116	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
10	125	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
11	144	S	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
12A	164	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
13	184	N	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
14A	187	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
15B	194	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
16	213	N	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
17B	213	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
18	216	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
19B	216	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)

20C	223	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)
21C	229	W	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Low (greater than 1 in 1000 but less than 1 in 100) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS flood Risk
1	0.0	On Site	Low
2	0.0	On Site	Low
3	0.0	On Site	Low
4	4.0	N	Low
5	15.0	E	Low
6	19.0	SW	Low
7	20.0	S	Low
8	28.0	E	Low
9	33.0	S	Low
10	35.0	NE	Low
11	40.0	S	Low

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site?

No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

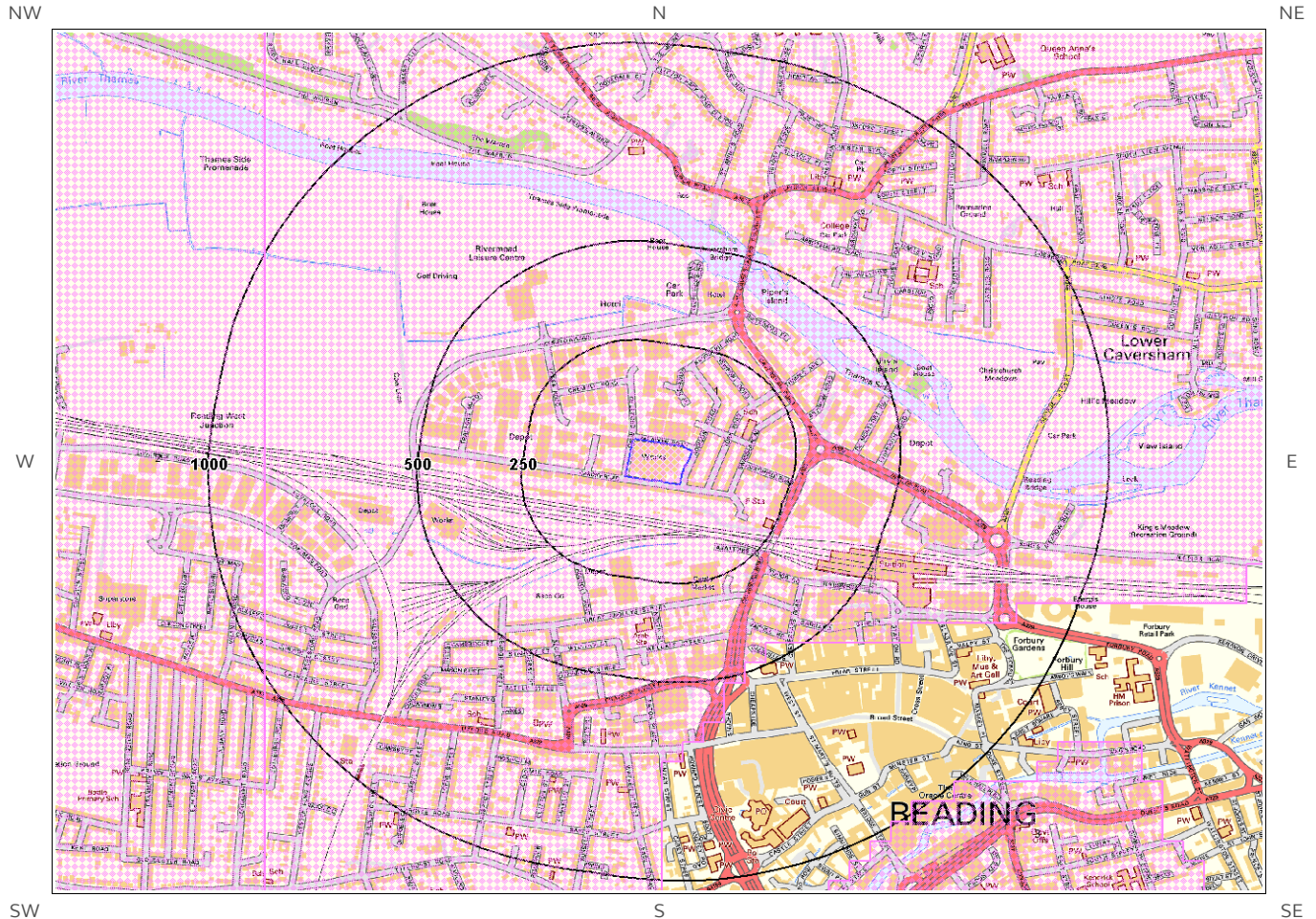
What is the British Geological Survey confidence rating in this result?

Not Applicable

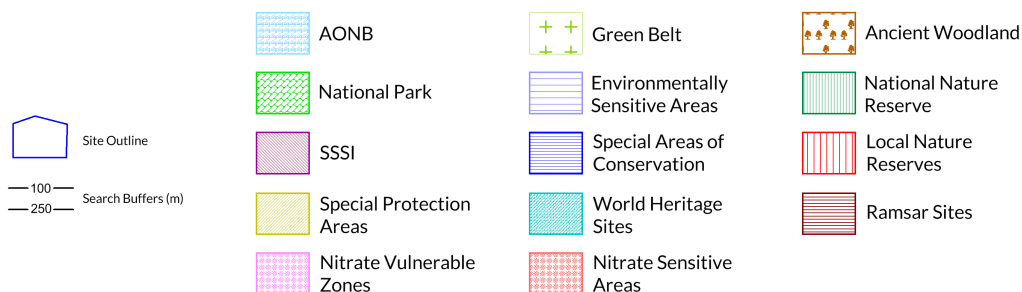
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

1

The following Area of Outstanding Natural Beauty (AONB) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	AONB/NSA Name	Data Source
Not shown	1958	NW	Chilterns	Natural England

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
2	864	W	Existing	DEFRA
3	975	SE	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

* This indicates an automatically generated 50m buffer and site.

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

Contact Details

CENTREMAPS

Telephone: 01886 832972
Groundsure@centremaps.co.uk



British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk



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Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



Public Health
England

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



The Coal
Authority

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505



Local Authority

Authority: Reading Borough Council
Phone: 0118 937 3787
Web: <http://beta.reading.gov.uk/>
Address: Civic Offices, Bridge Street, Reading, RG1 2LU

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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APPENDIX B

PHOTOGRAPHS



Photograph 1: View of eastern side of main building.



Photograph 2: Drums present in southeast.



Photograph 3: Electricity sub-station in south.



Photograph 4: Waste storage awaiting collection.



Photograph 5: Diesel Storage Tank.



Photograph 6: Timber recycled for site heating system



Photograph 7: Possible ACM cladding on First Floor.



Photograph 8: Probable ACM roofing on northwest of main building.



APPENDIX C

HISTORICAL MAPS



Site Details:

Cox and Wyman Ltd, Cardiff
Road, Reading, RG1 8EX

Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1878

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1878
Revised 1878
Edition N/A
Copyright N/A
Levelled N/A



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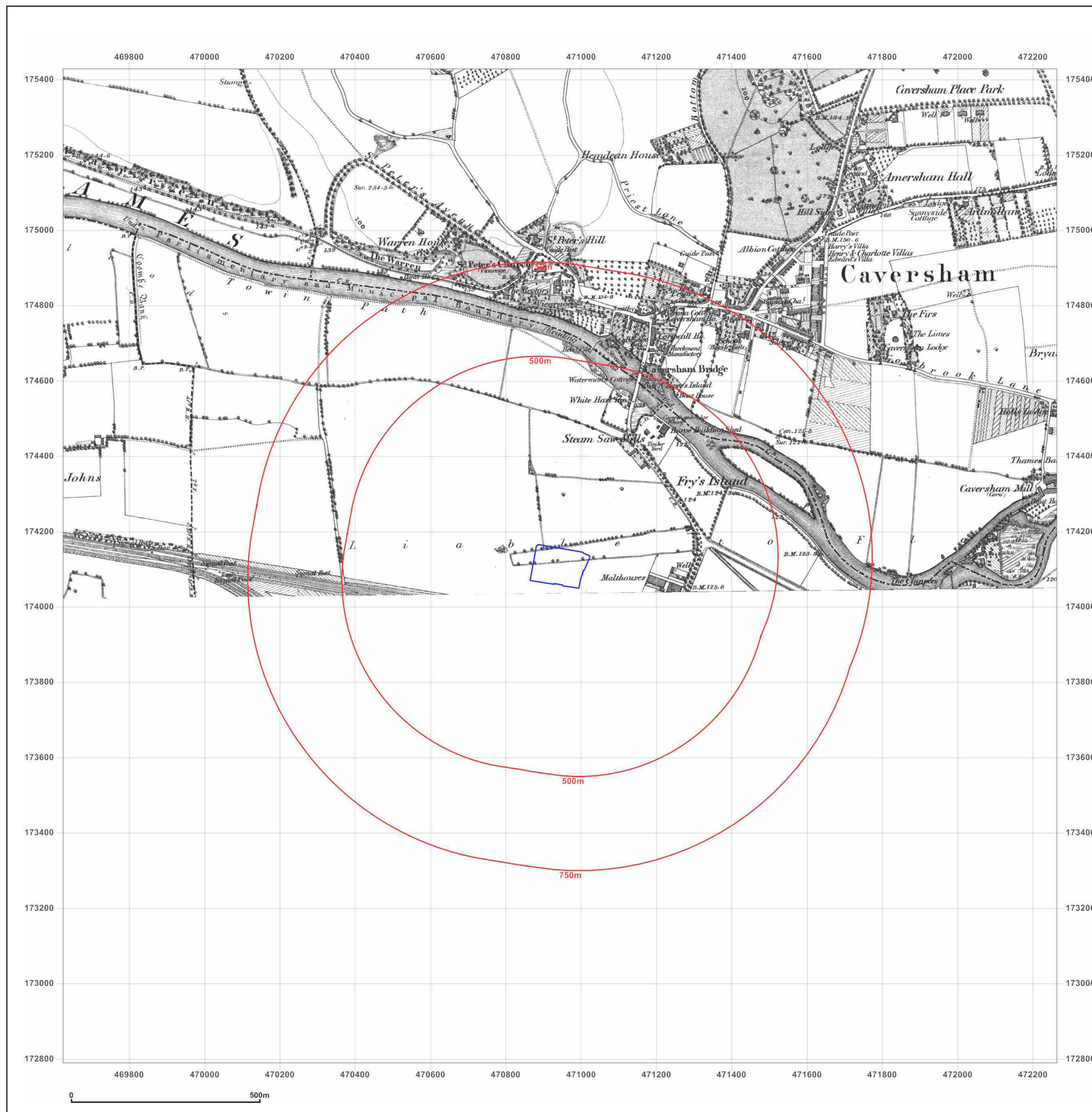


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Production date: 29 March 2017

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Site Details:

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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1897-1900

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1877
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1898
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1898
Edition N/A
Copyright N/A
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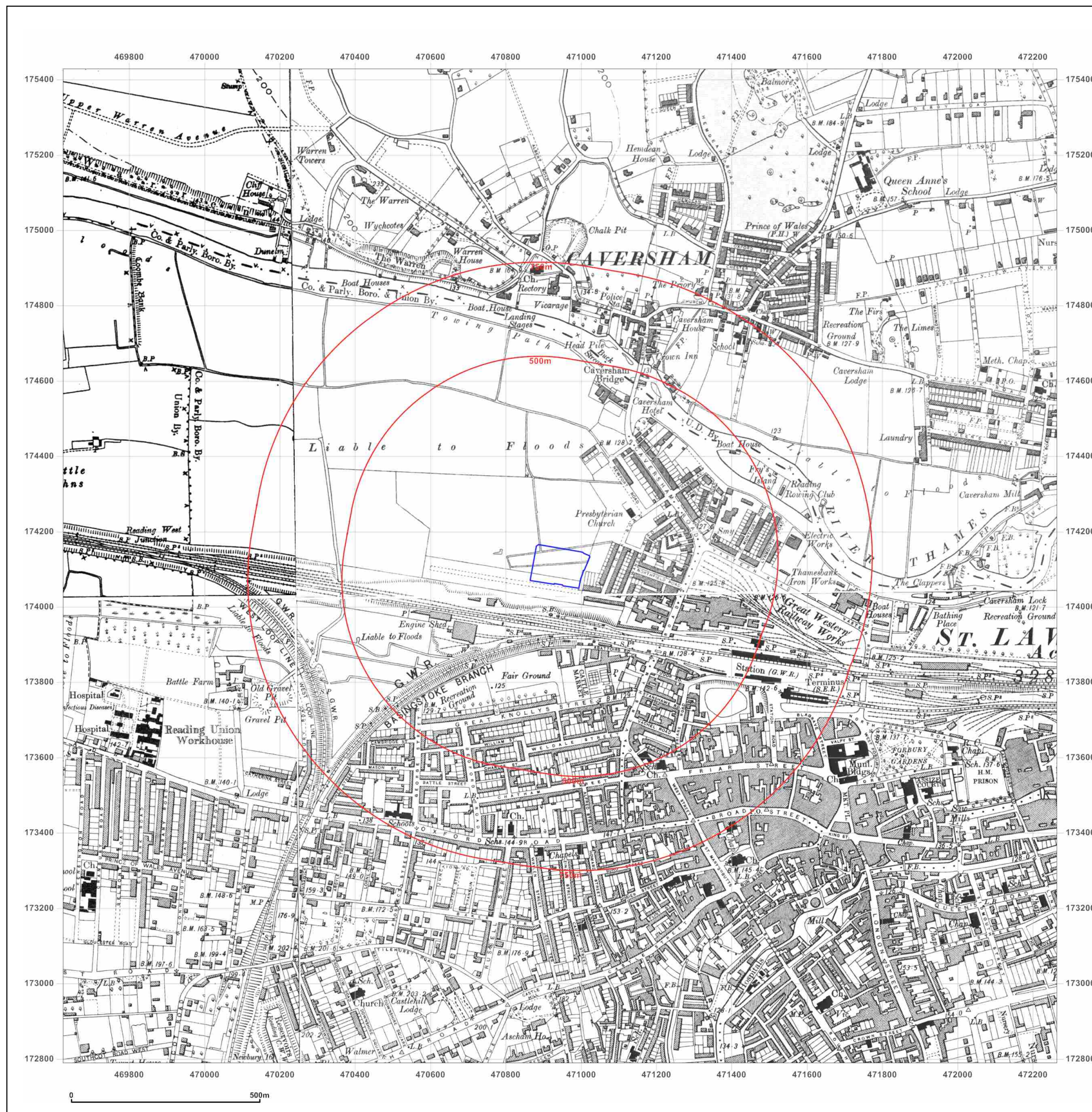


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1900

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1897
Edition 1900
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1898
Edition 1900
Copyright N/A
Levelled N/A

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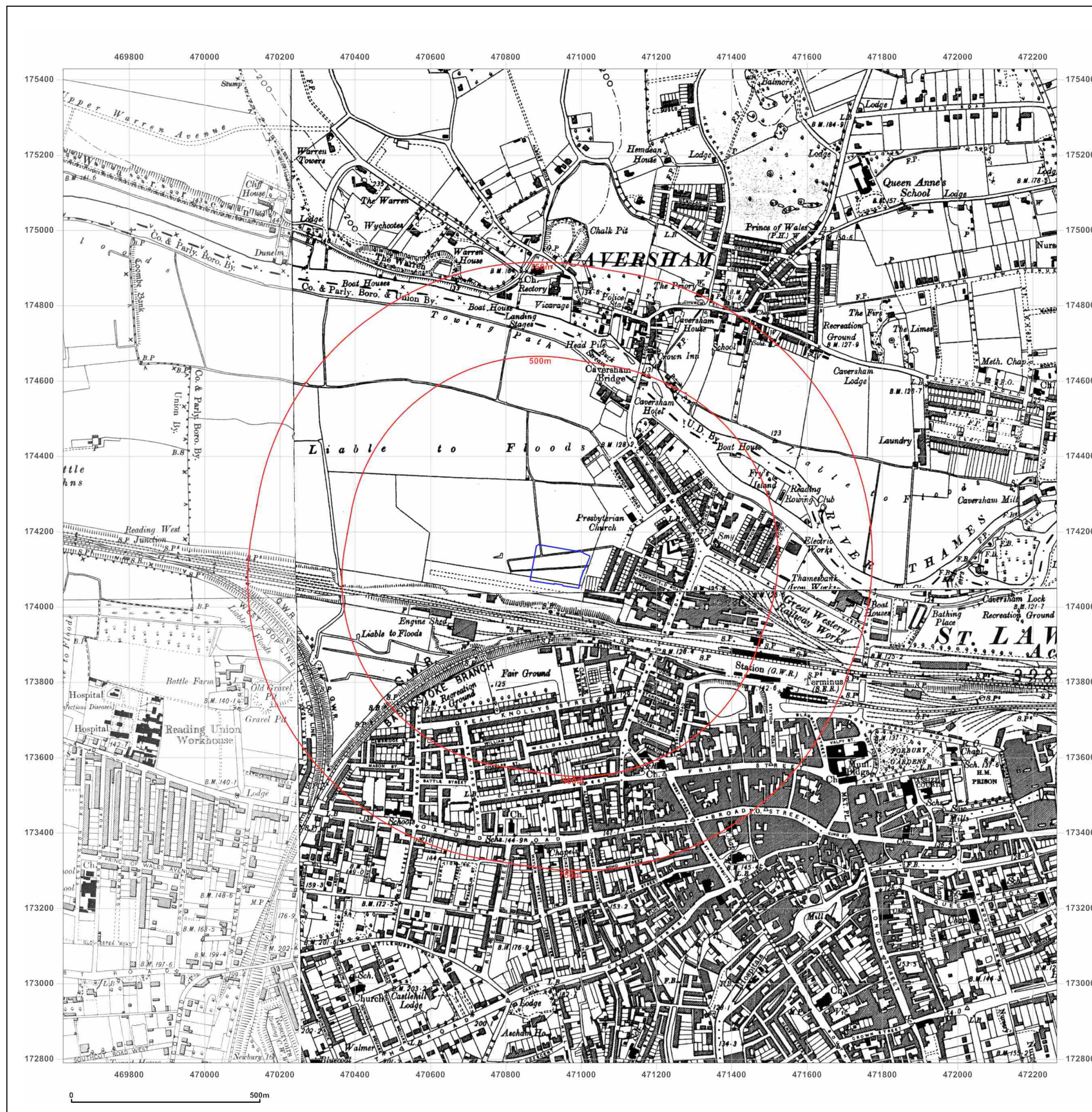


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1910-1913

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1910
Edition N/A
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Surveyed 1877
Revised 1910
Edition N/A
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Surveyed 1877
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1910
Edition 1913
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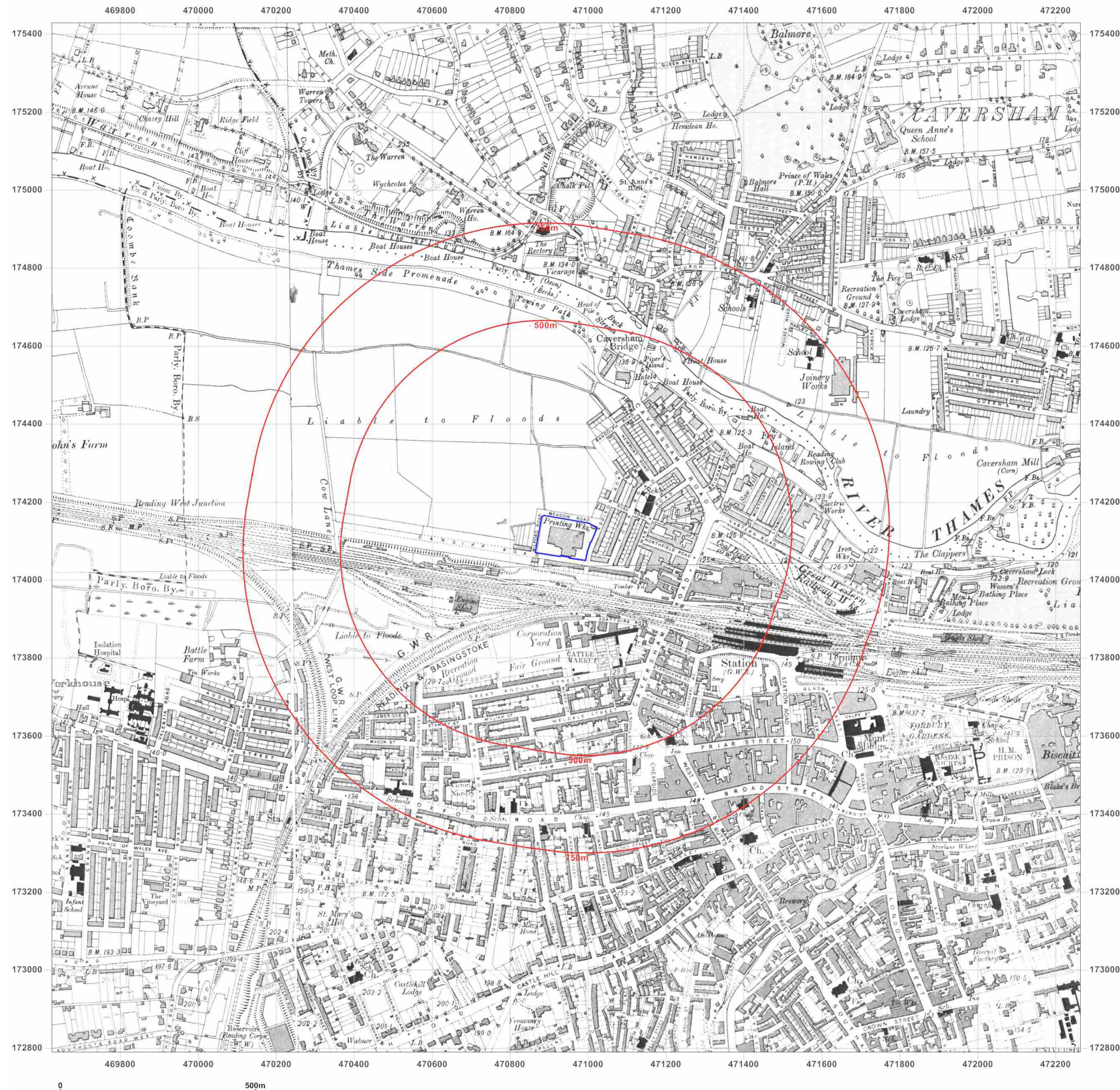


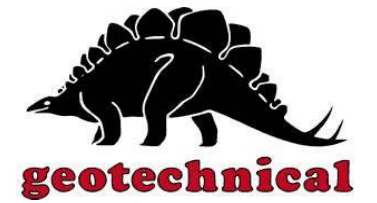
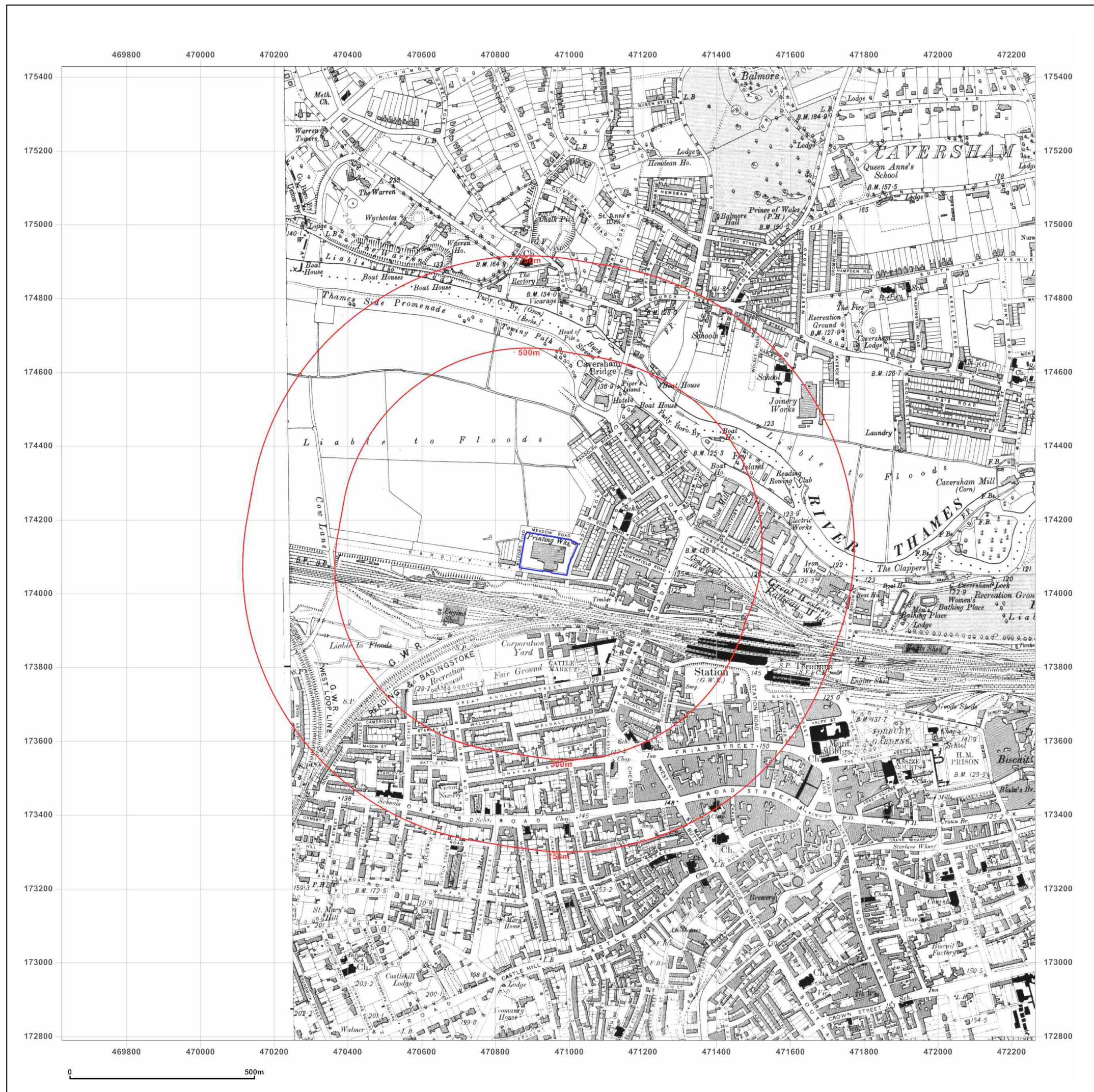
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Site Details:

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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

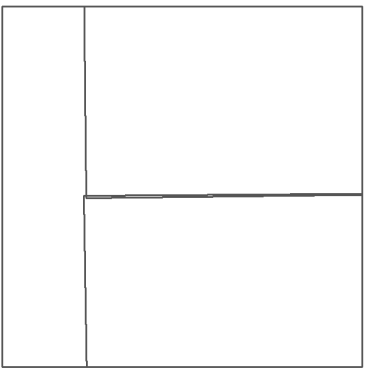
Map date: 1914

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1910
Edition 1914
Copyright N/A
Levelled N/A



Surveyed N/A
Revised 1914
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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition 1938
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Surveyed 1877
Revised 1938
Edition N/A
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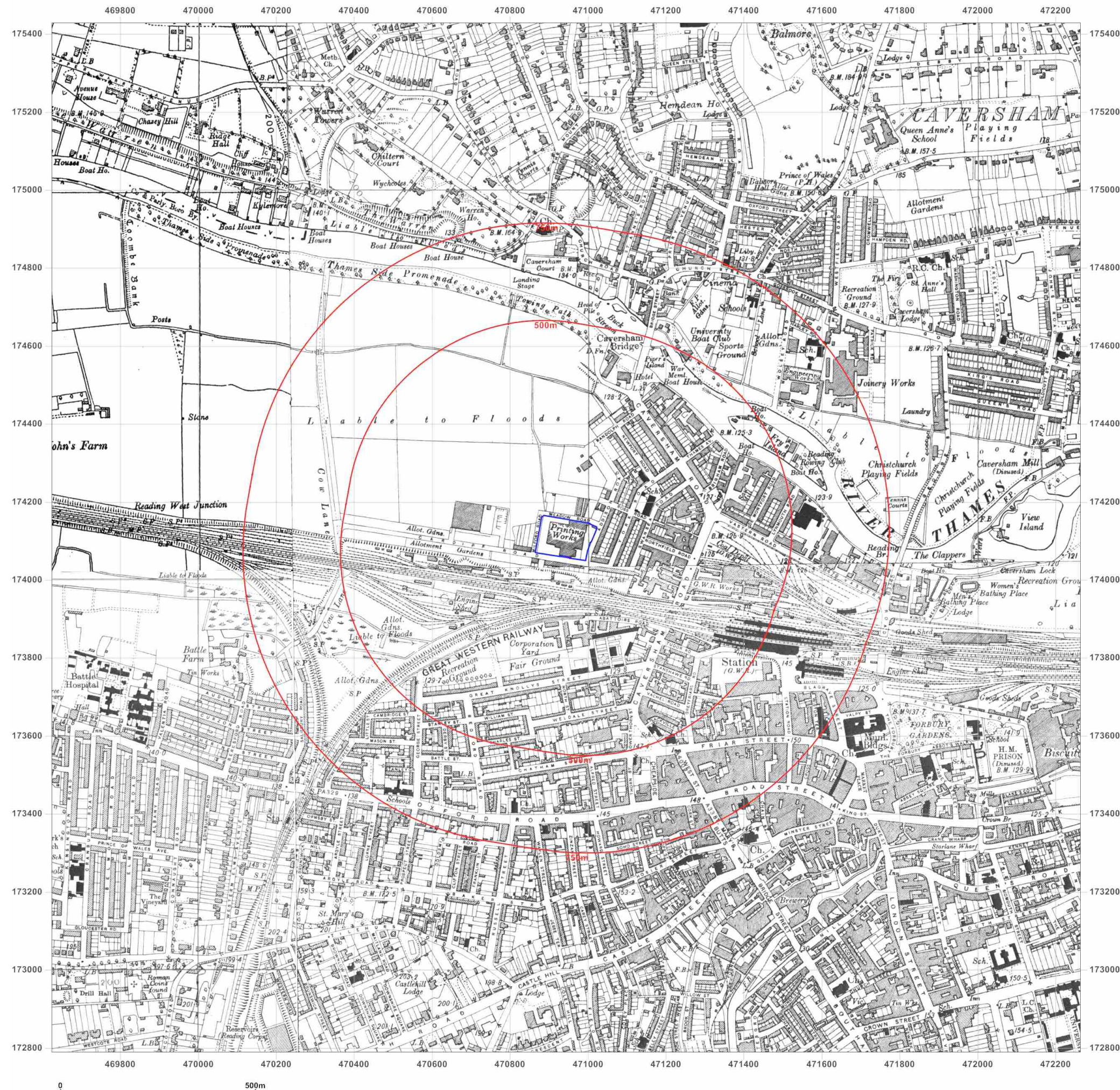


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Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

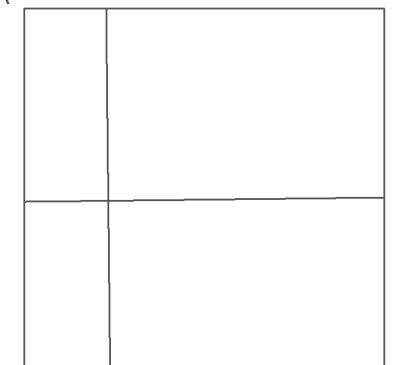
Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition 1938
Copyright N/A
Levelled N/A



Surveyed 1877
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A



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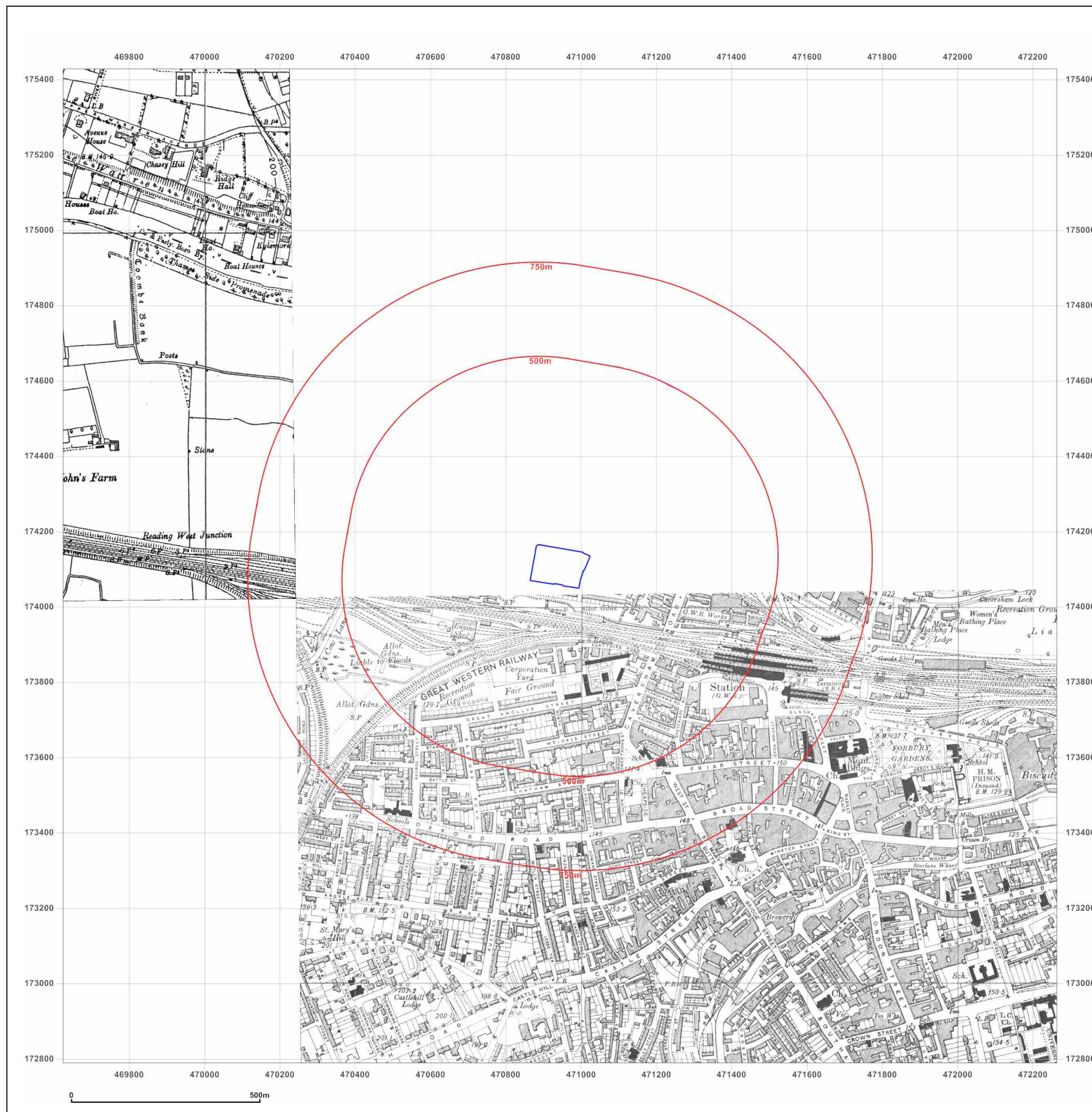


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Site Details:

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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: Provisional

Map date: 1960-1962

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1956
Revised 1956
Edition N/A
Copyright 1960
Levelled N/A

Surveyed 1877
Revised 1956
Edition N/A
Copyright 1961
Levelled N/A

Surveyed N/A
Revised 1960
Edition 1961
Copyright 1961
Levelled N/A

Surveyed 1959
Revised 1961
Edition N/A
Copyright 1962
Levelled N/A



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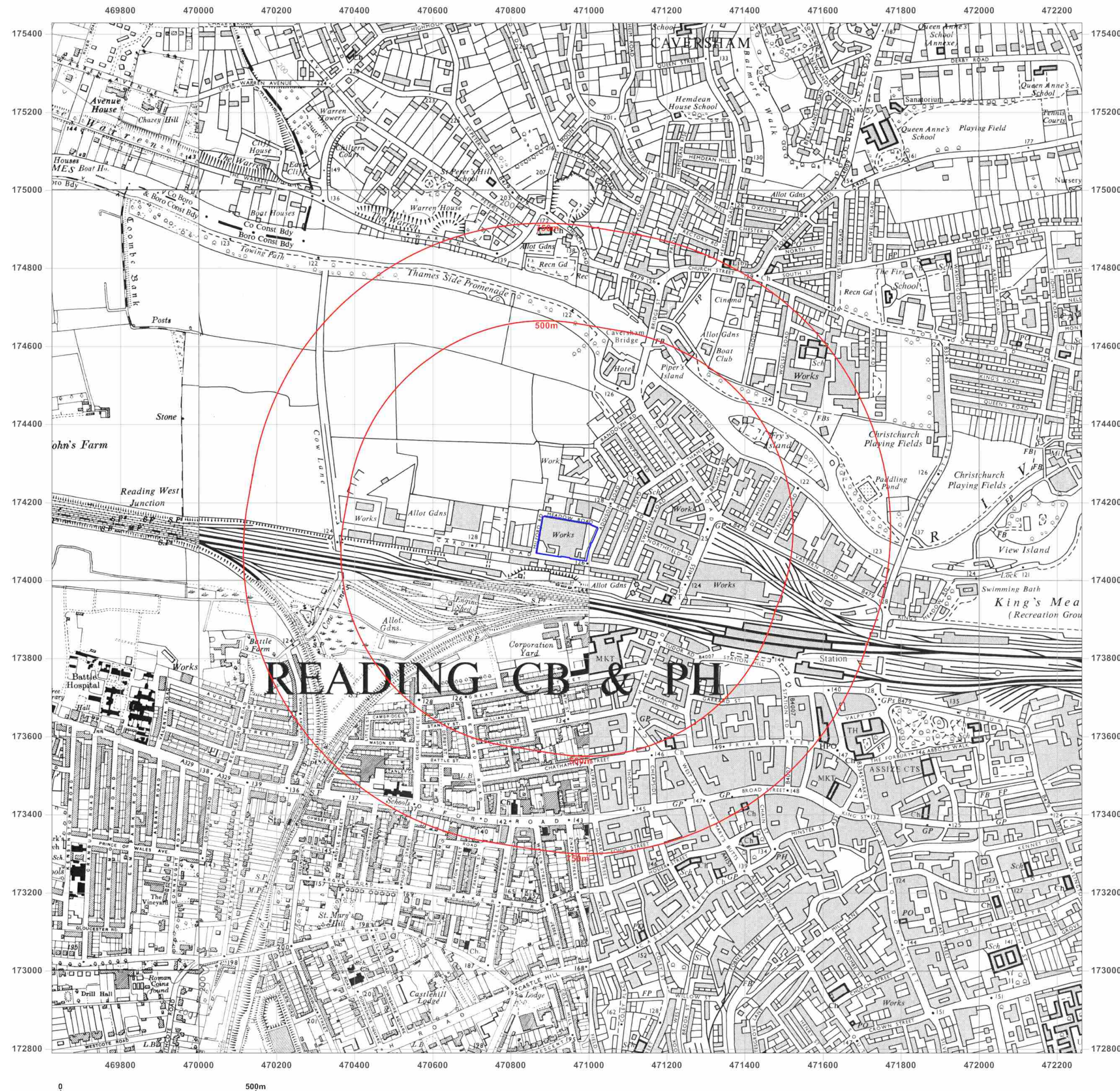


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1970-1973

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1968
Revised 1970
Edition N/A
Copyright 1970
Levelled 1969

Surveyed 1971
Revised 1973
Edition N/A
Copyright 1973
Levelled 1969

Surveyed 1970
Revised 1973
Edition N/A
Copyright 1973
Levelled N/A



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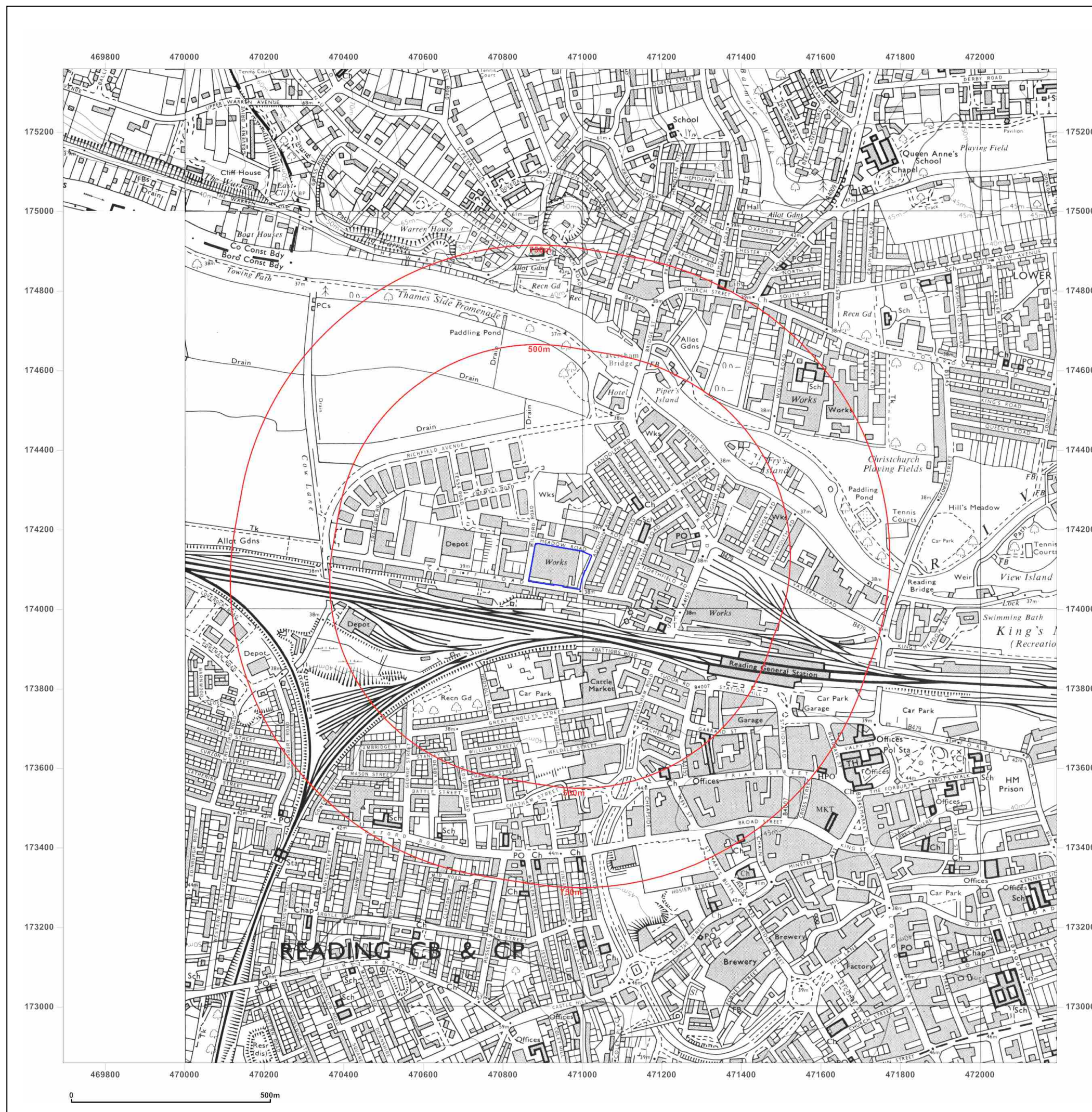


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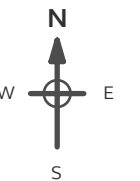
Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1976-1979

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1973
Revised 1975
Edition N/A
Copyright 1976
Levelled 1969

Surveyed 1977
Revised 1979
Edition N/A
Copyright 1979
Levelled 1969



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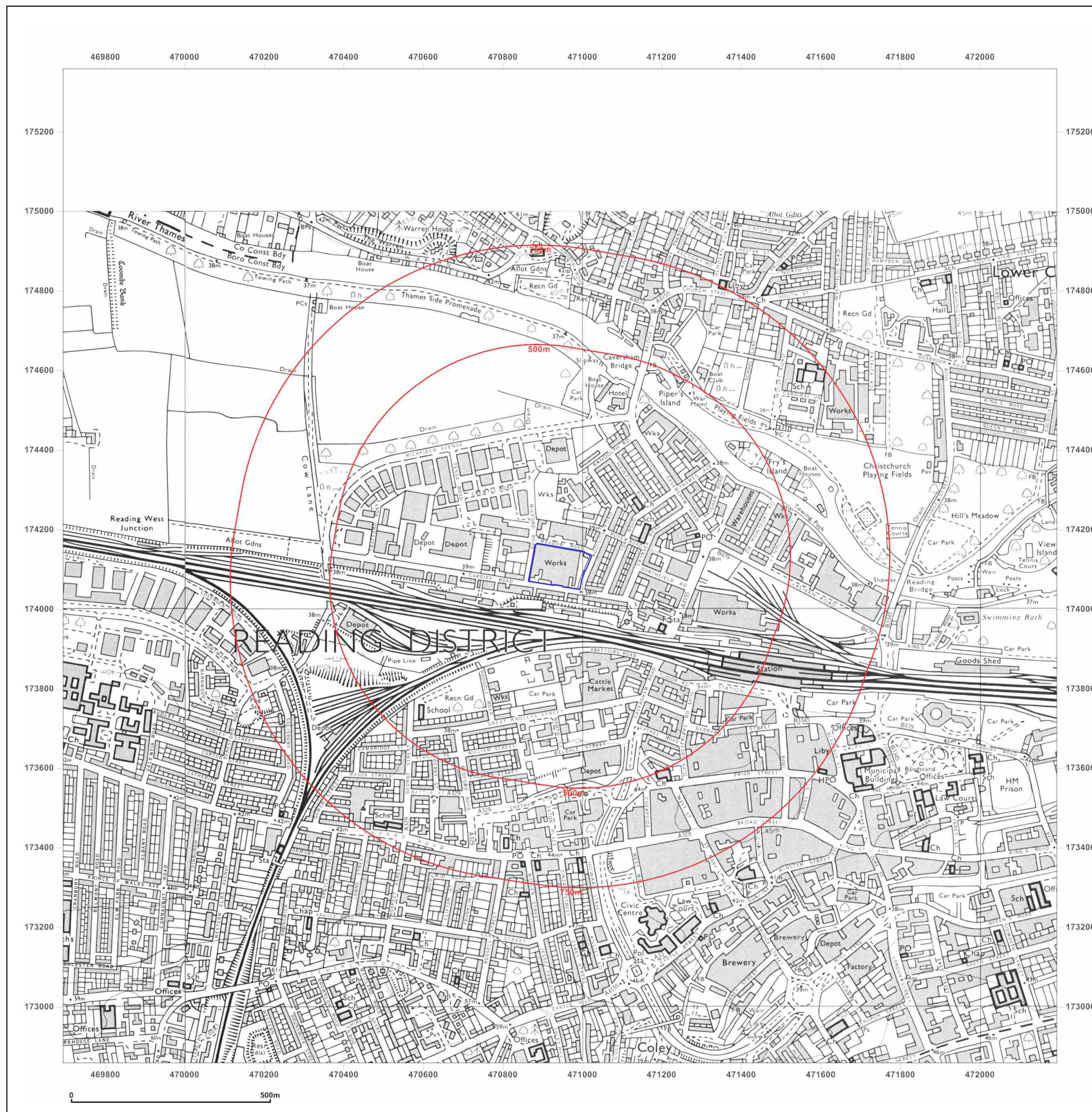


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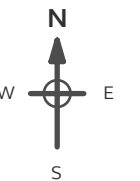
Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1989-1991

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1985
Revised 1990
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1990
Revised 1991
Edition N/A
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Levelled N/A

Surveyed 1987
Revised 1989
Edition N/A
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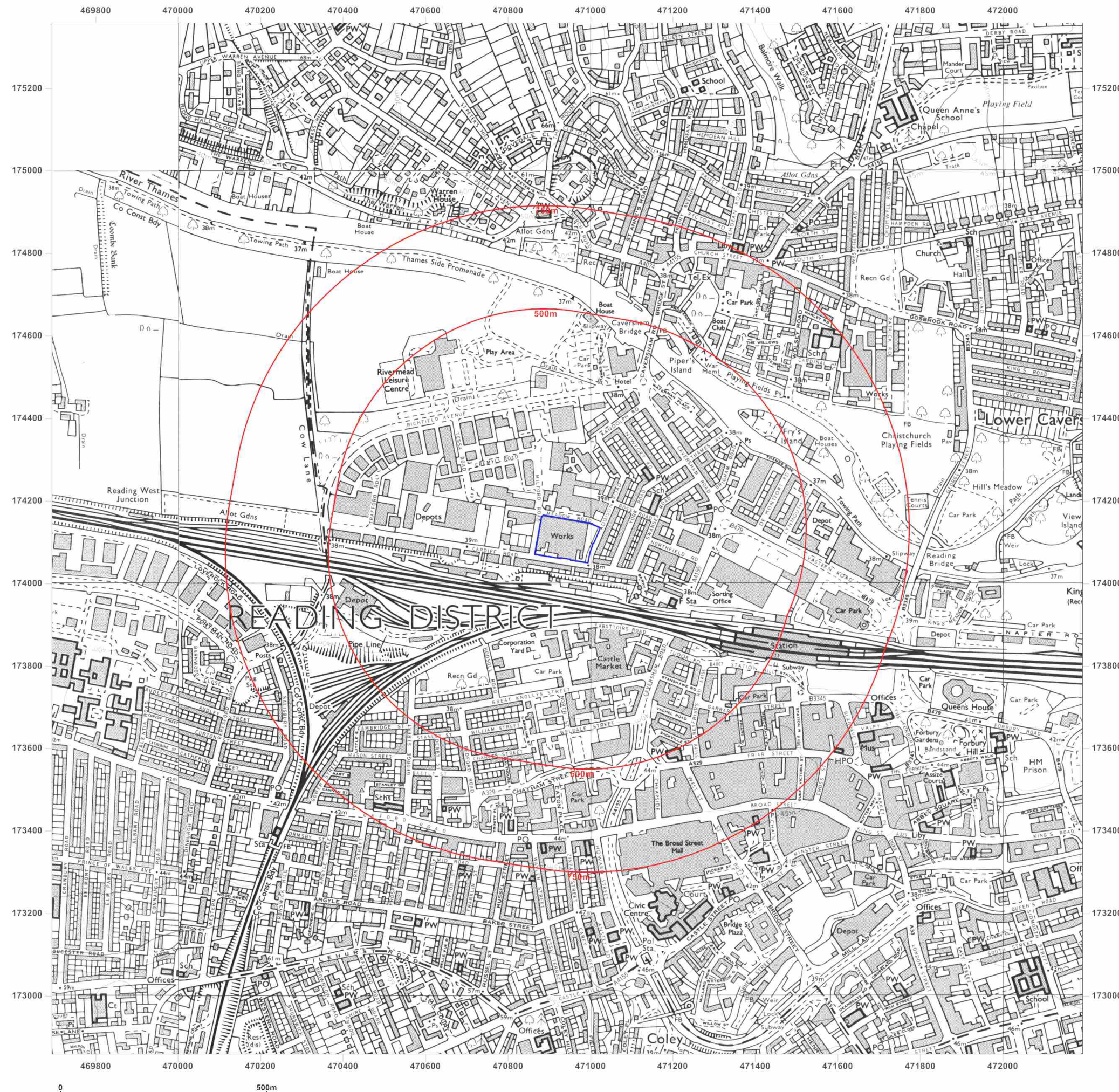


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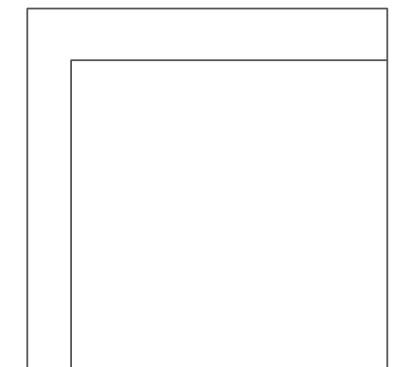
Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1987
Revised 1994
Edition N/A
Copyright N/A
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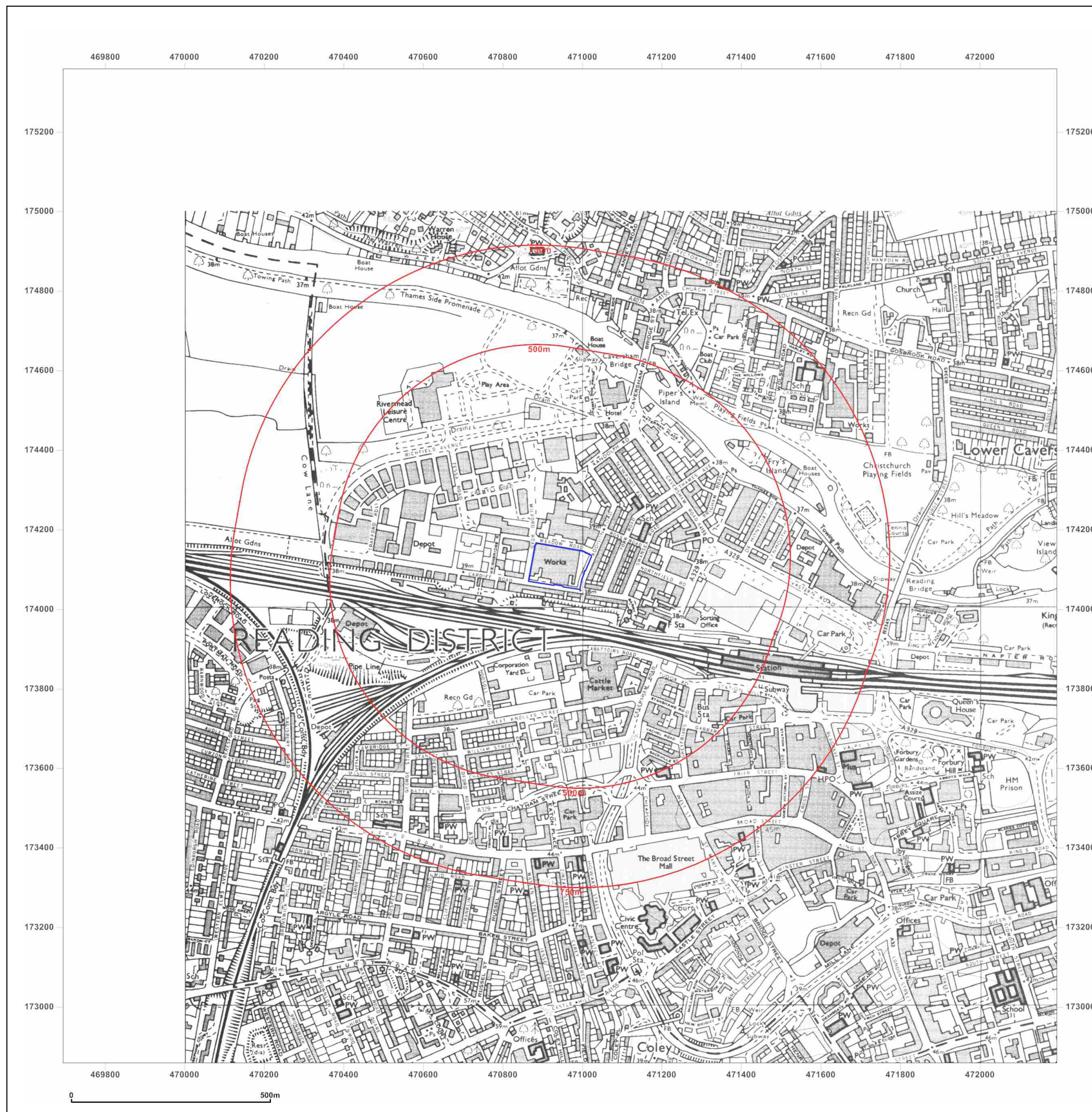


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



2002



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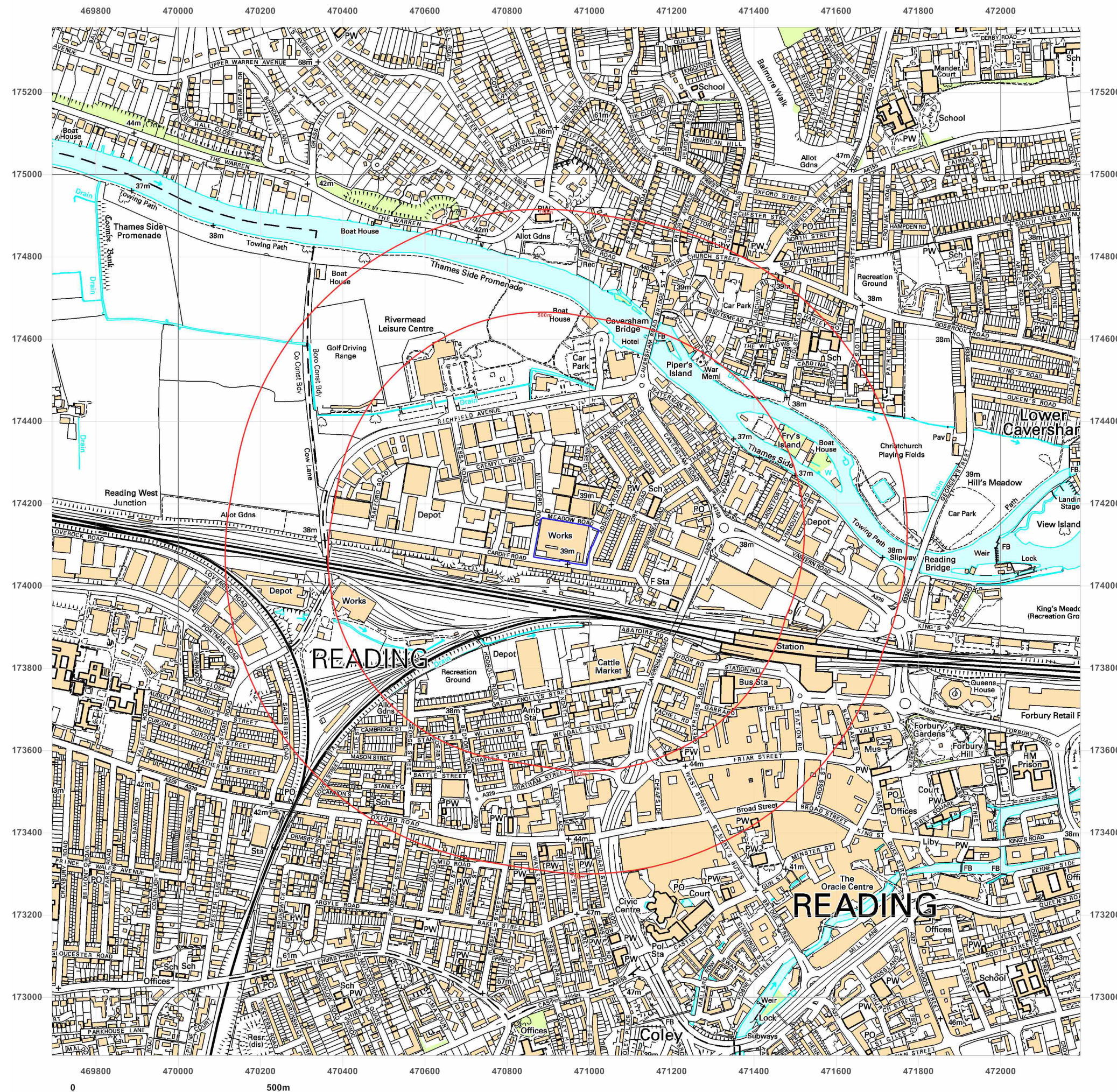


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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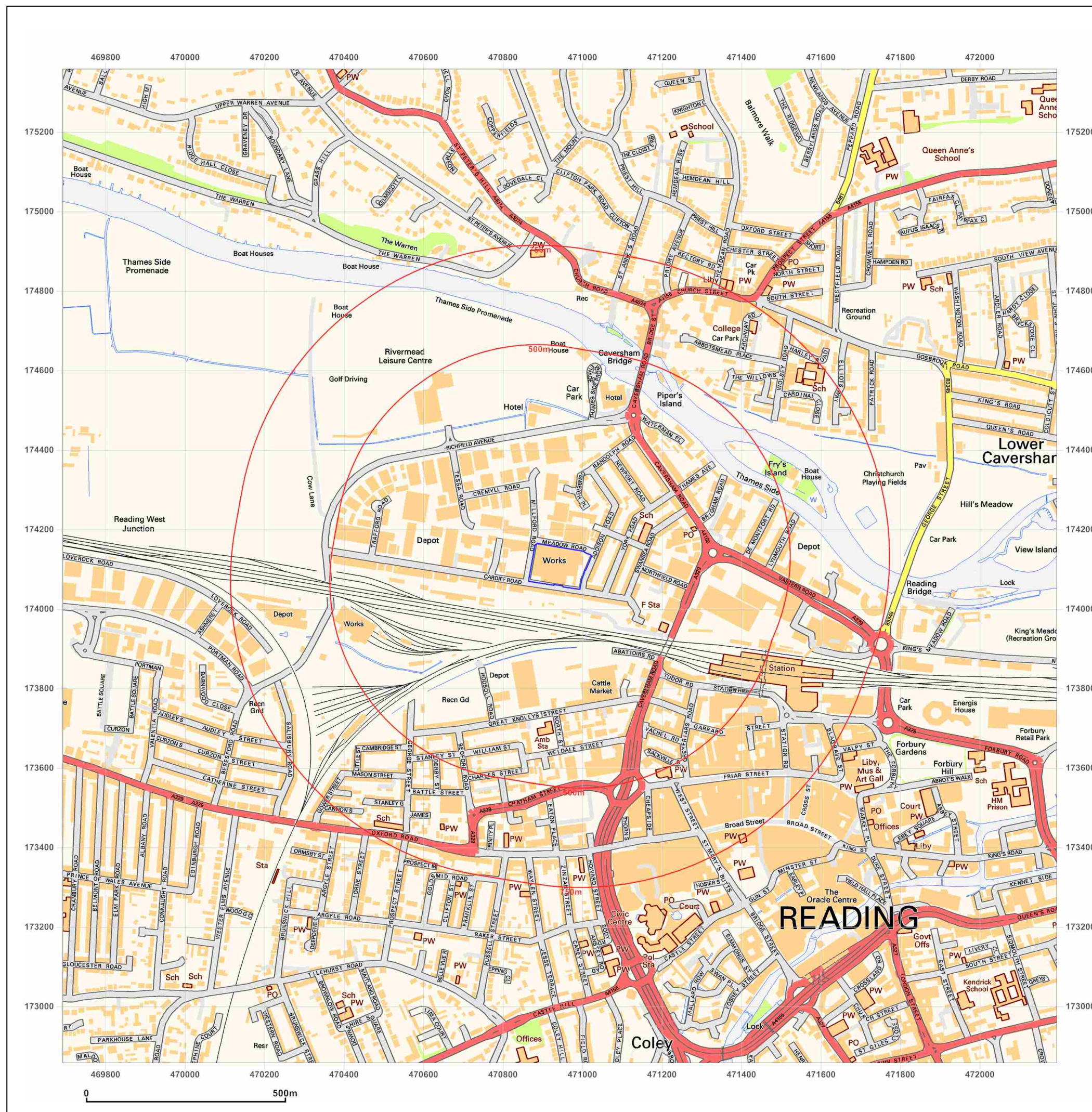


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



2014



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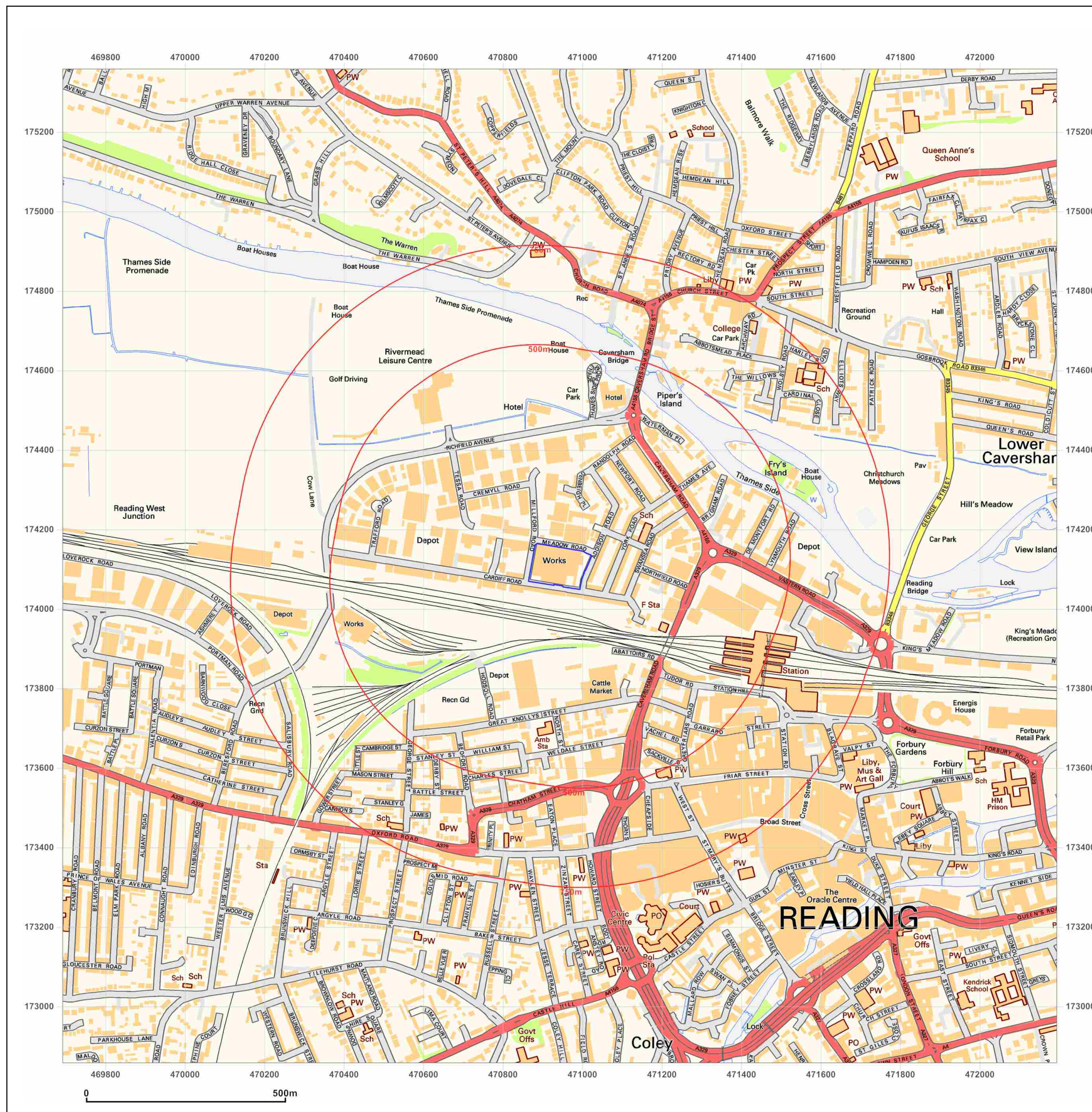


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1877

Scale: 1:2,500

Printed at: 1:2,500



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



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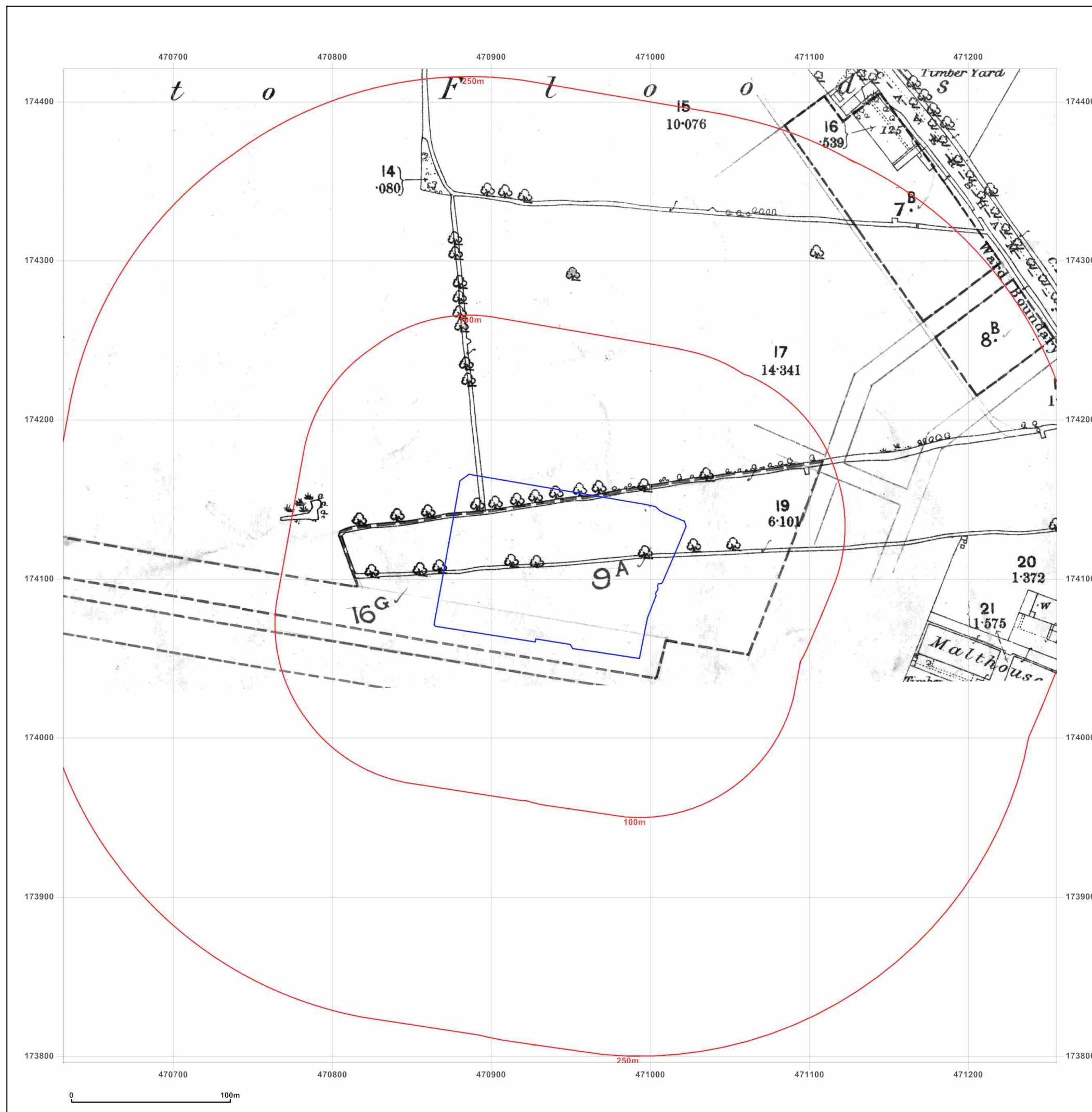


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1899-1900

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

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



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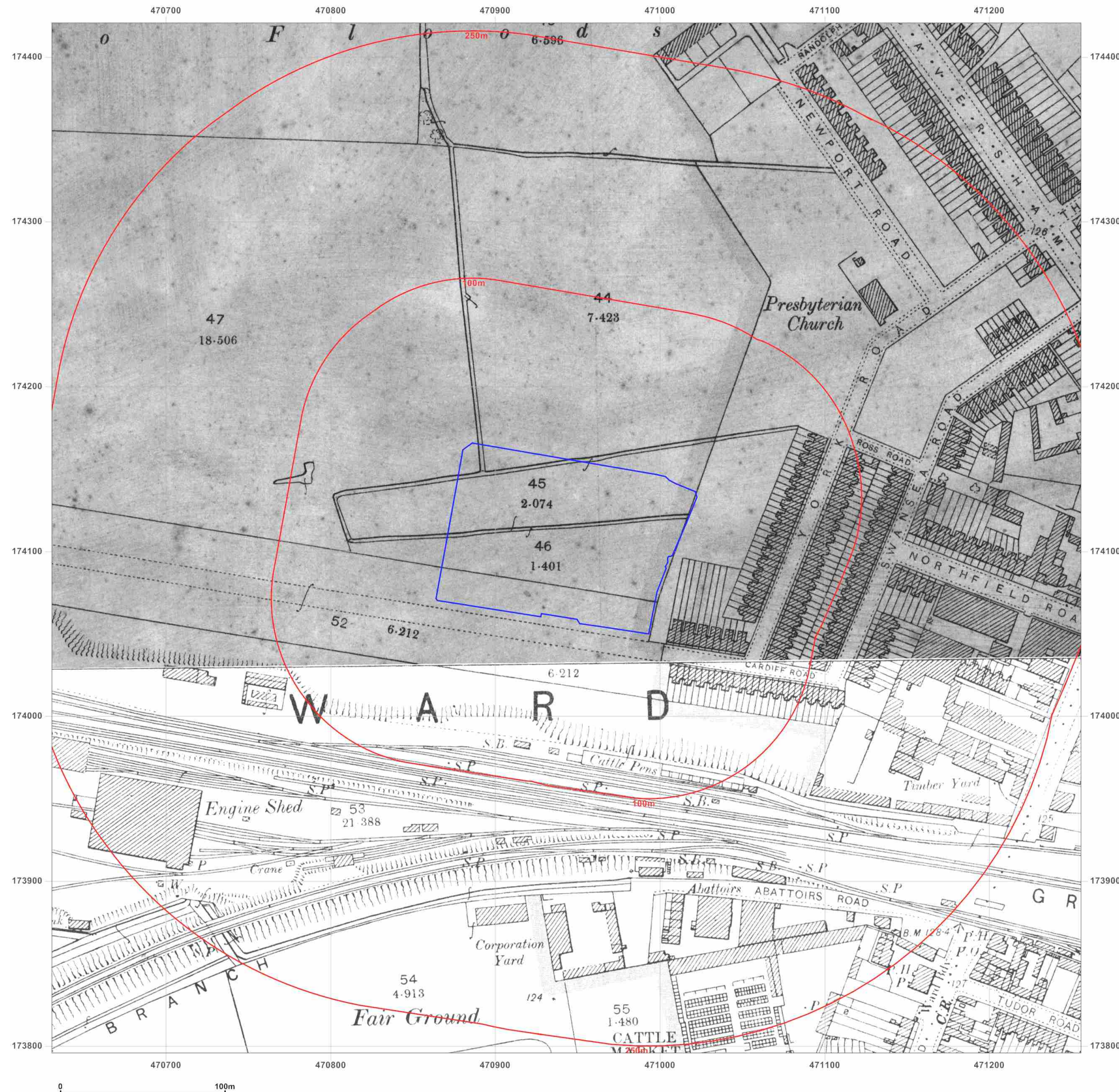


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1912-1913

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1913
Revised 1913
Edition N/A
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Surveyed 1912
Revised 1912
Edition N/A
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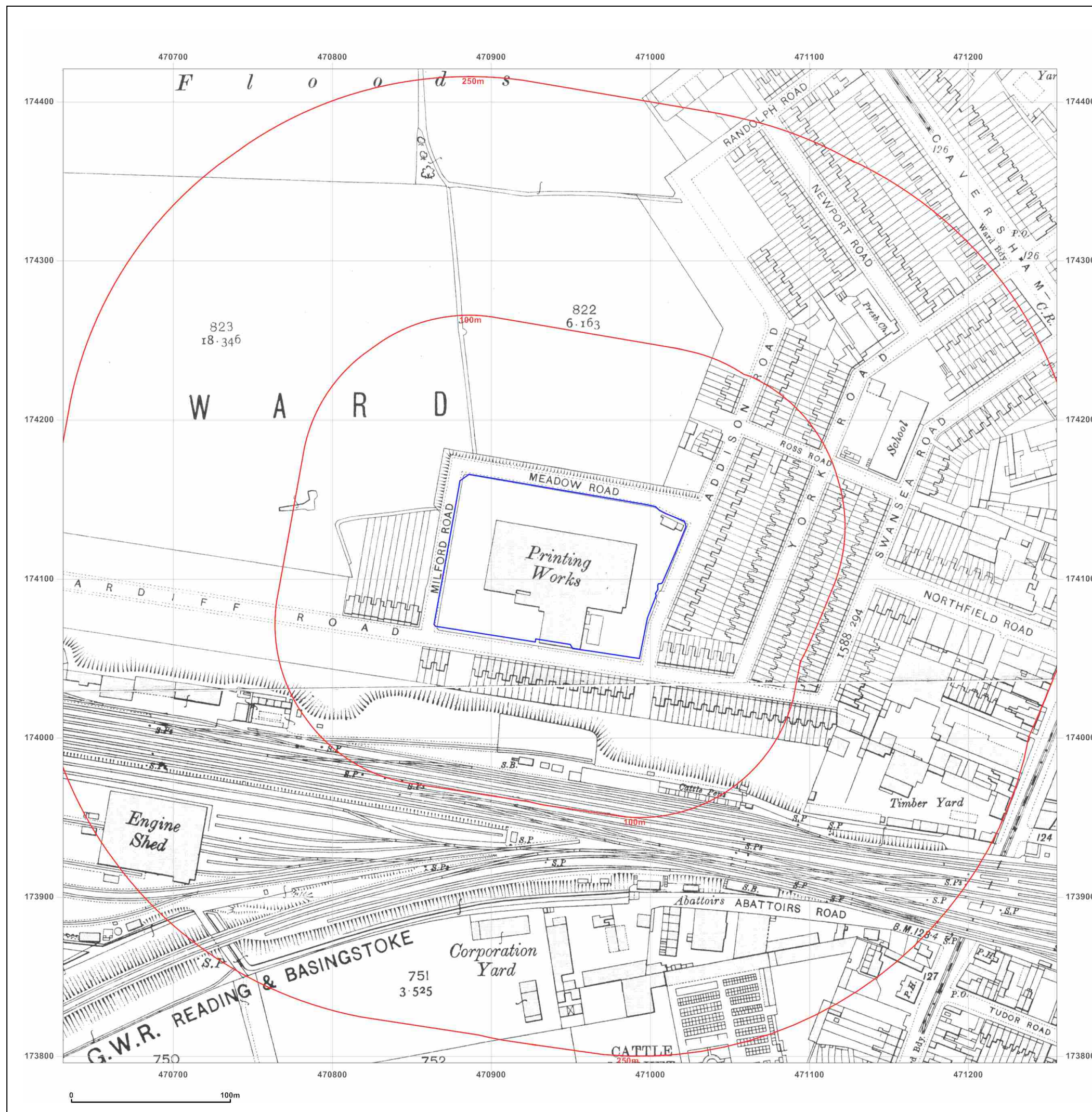


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1931-1932

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1931
Revised 1931
Edition N/A
Copyright N/A
Levelled N/A



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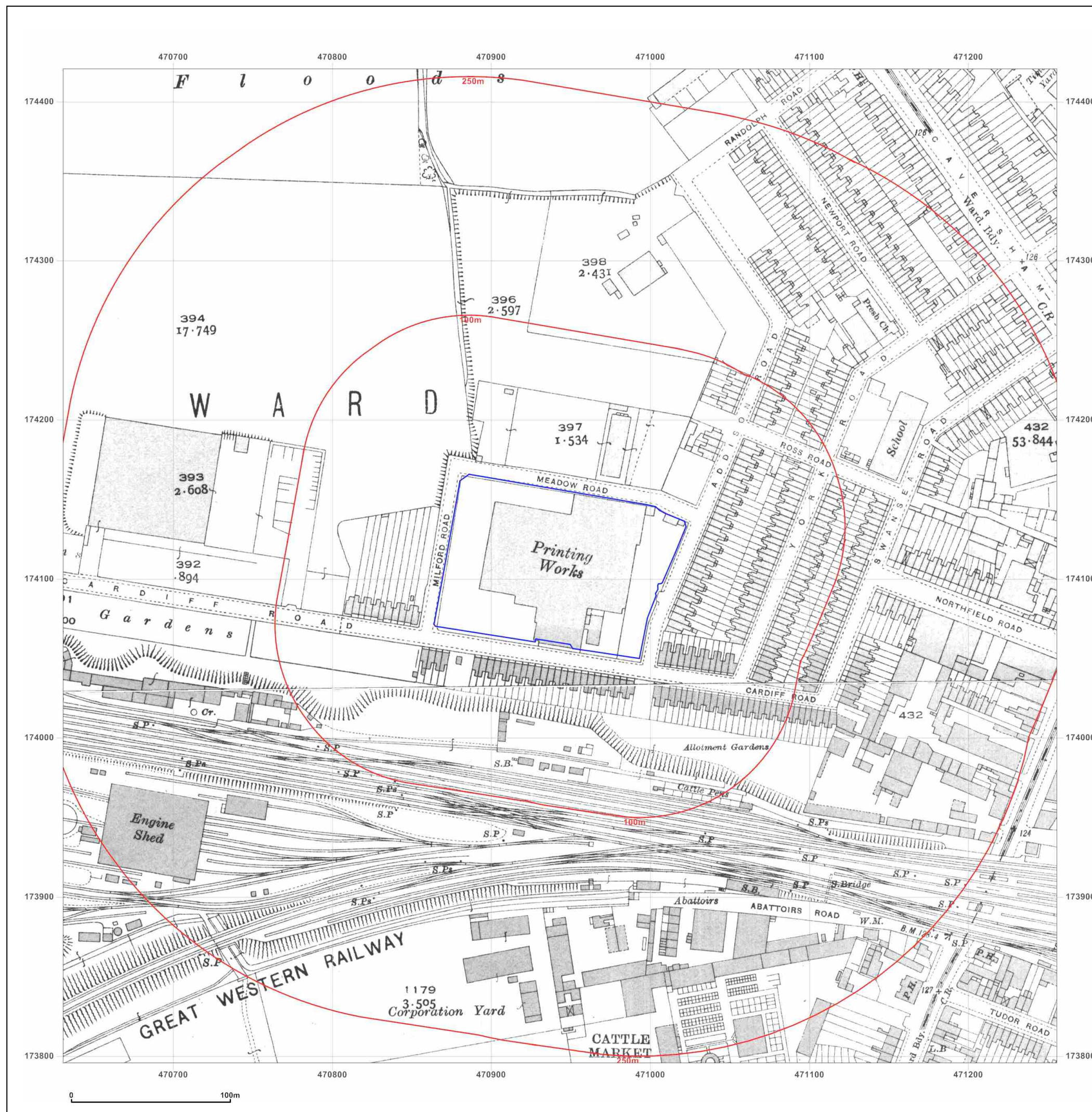


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: County Series

Map date: 1936

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1936
Revised 1936
Edition N/A
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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1956-1959

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1956
Revised 1956
Edition N/A
Copyright N/A
Levelled 1951

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
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Surveyed 1957
Revised 1957
Edition N/A
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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1957-1959

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1959
Revised 1959
Edition 1961
Copyright 1961
Levelled 1951

Surveyed 1957
Revised 1957
Edition 1958
Copyright N/A
Levelled 1951



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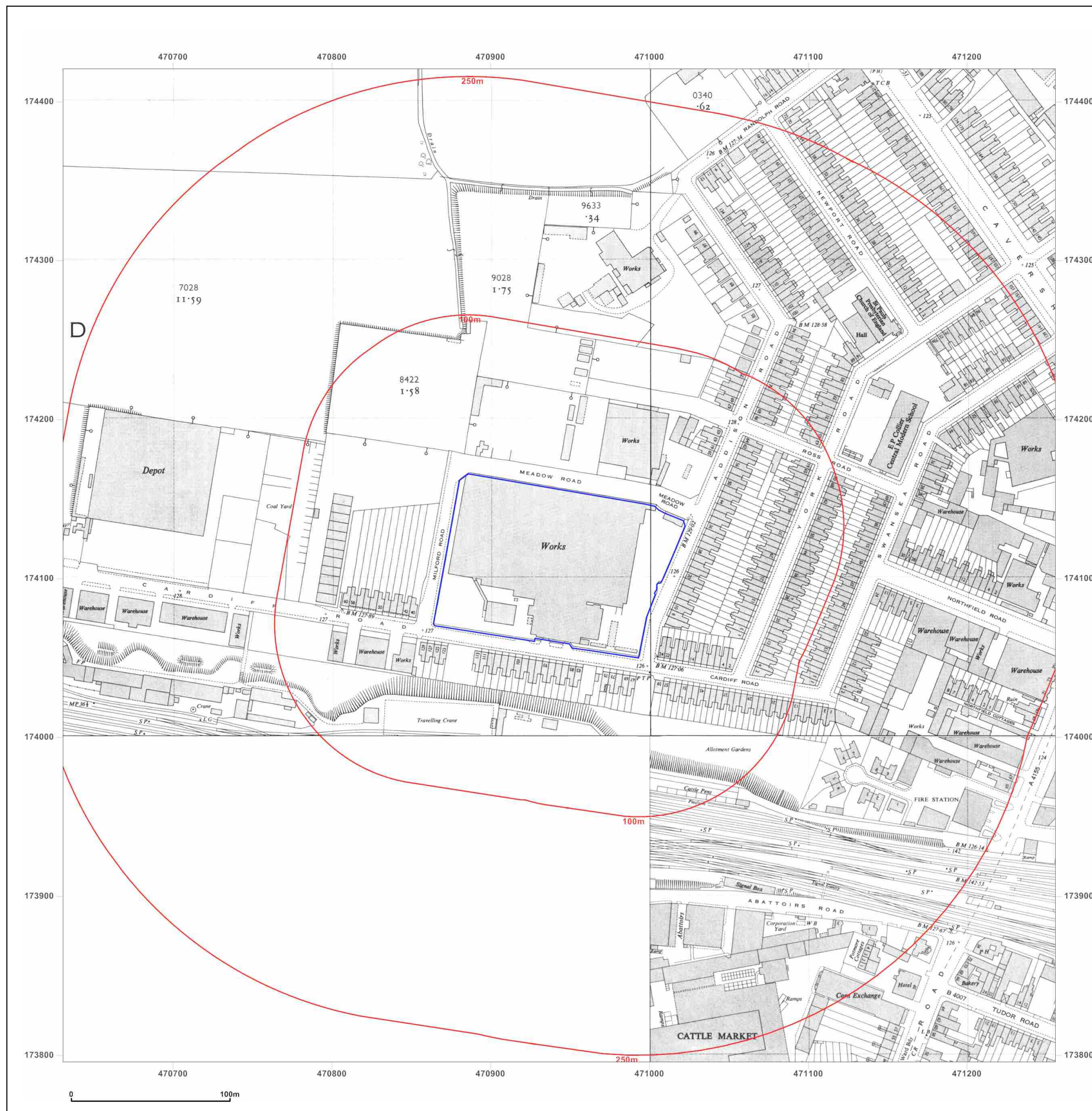


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

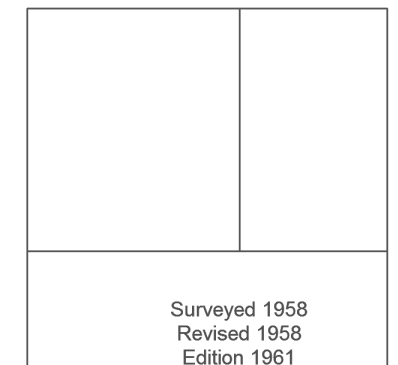
Map date: 1956-1961

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1956
Revised 1956
Edition 1957
Copyright N/A
Levelled 1951



Surveyed 1958
Revised 1958
Edition 1961
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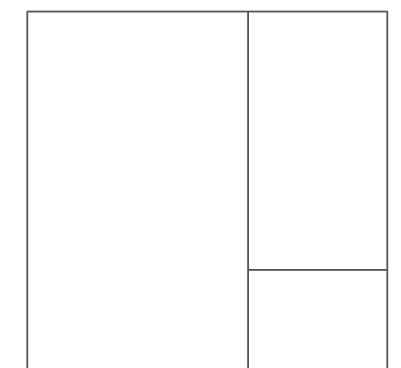
Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1957-1962

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 1957
Revised 1962
Edition N/A
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Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1969-1971

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1959
Revised 1969
Edition N/A
Copyright 1970
Levelled 1951

Surveyed 1956
Revised 1970
Edition N/A
Copyright 1971
Levelled 1951

Surveyed 1958
Revised 1971
Edition N/A
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Levelled 1951

Surveyed 1957
Revised 1958
Edition N/A
Copyright 1969
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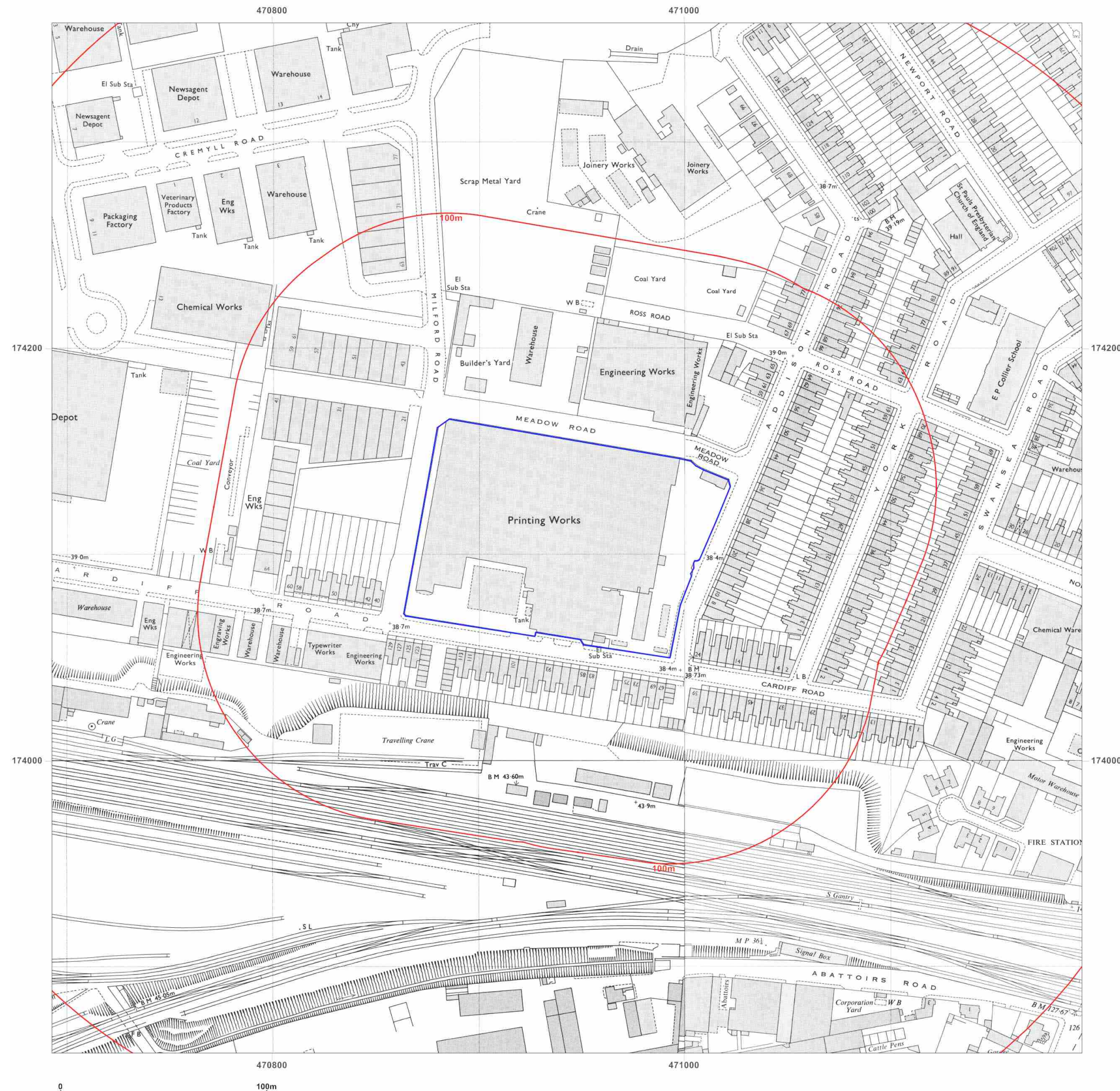


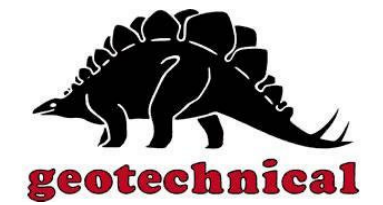
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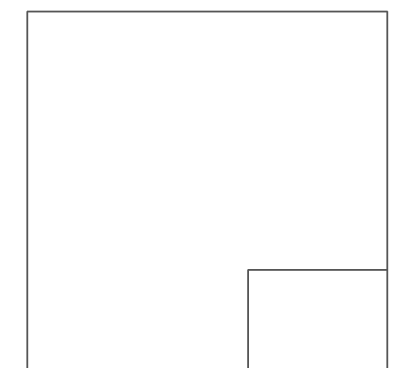
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Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1974

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
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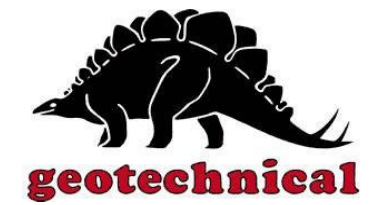
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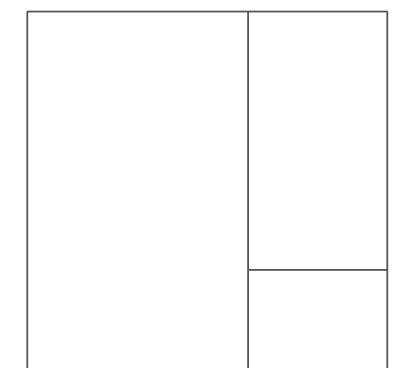
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Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1979-1982

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1982
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Surveyed N/A
Revised N/A
Edition N/A
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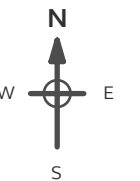
Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1984-1988

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1953
Revised 1983
Edition N/A
Copyright 1984
Levelled 1973

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

Surveyed 1957
Revised 1984
Edition N/A
Copyright 1986
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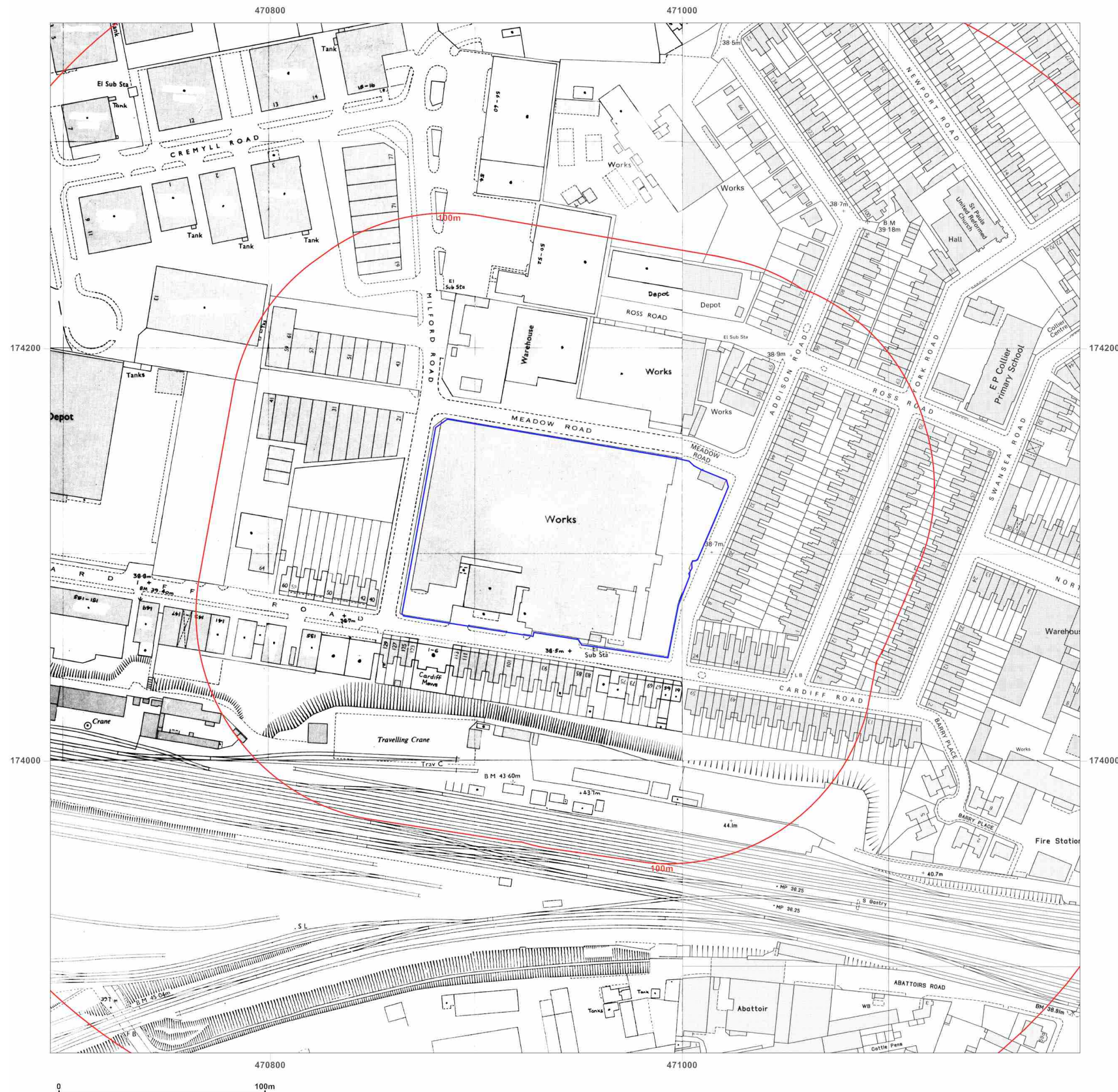


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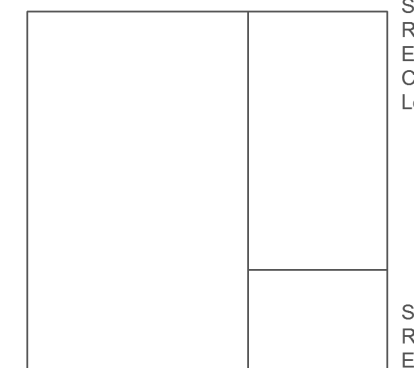
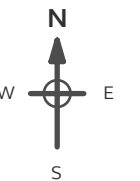
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Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1984-1988

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled 1973

Surveyed 1973
Revised 1988
Edition N/A
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Levelled 1973



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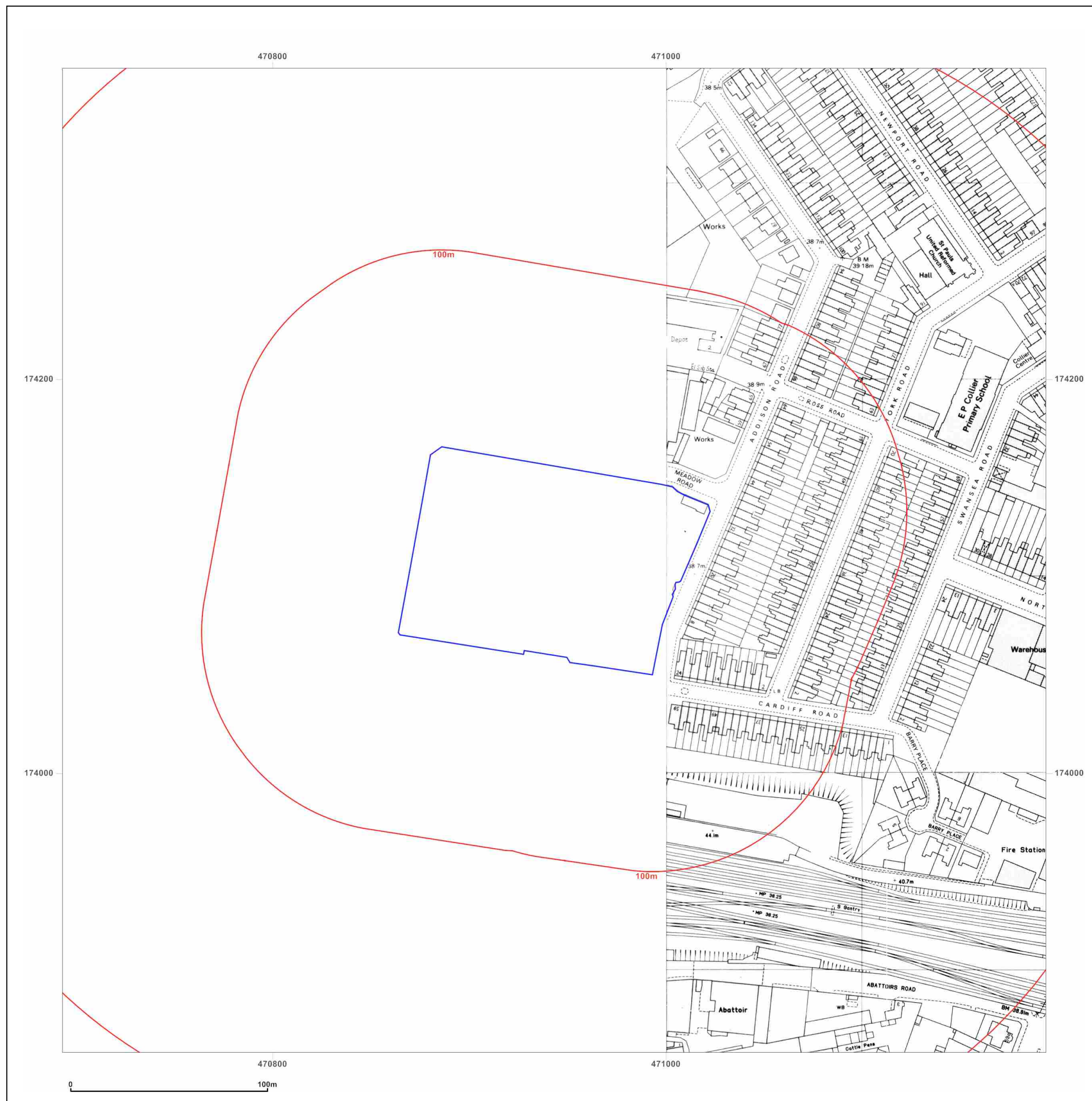


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Client Ref: 13562
Report Ref: CMAPS-AAC-611633-13562-290317HIS
Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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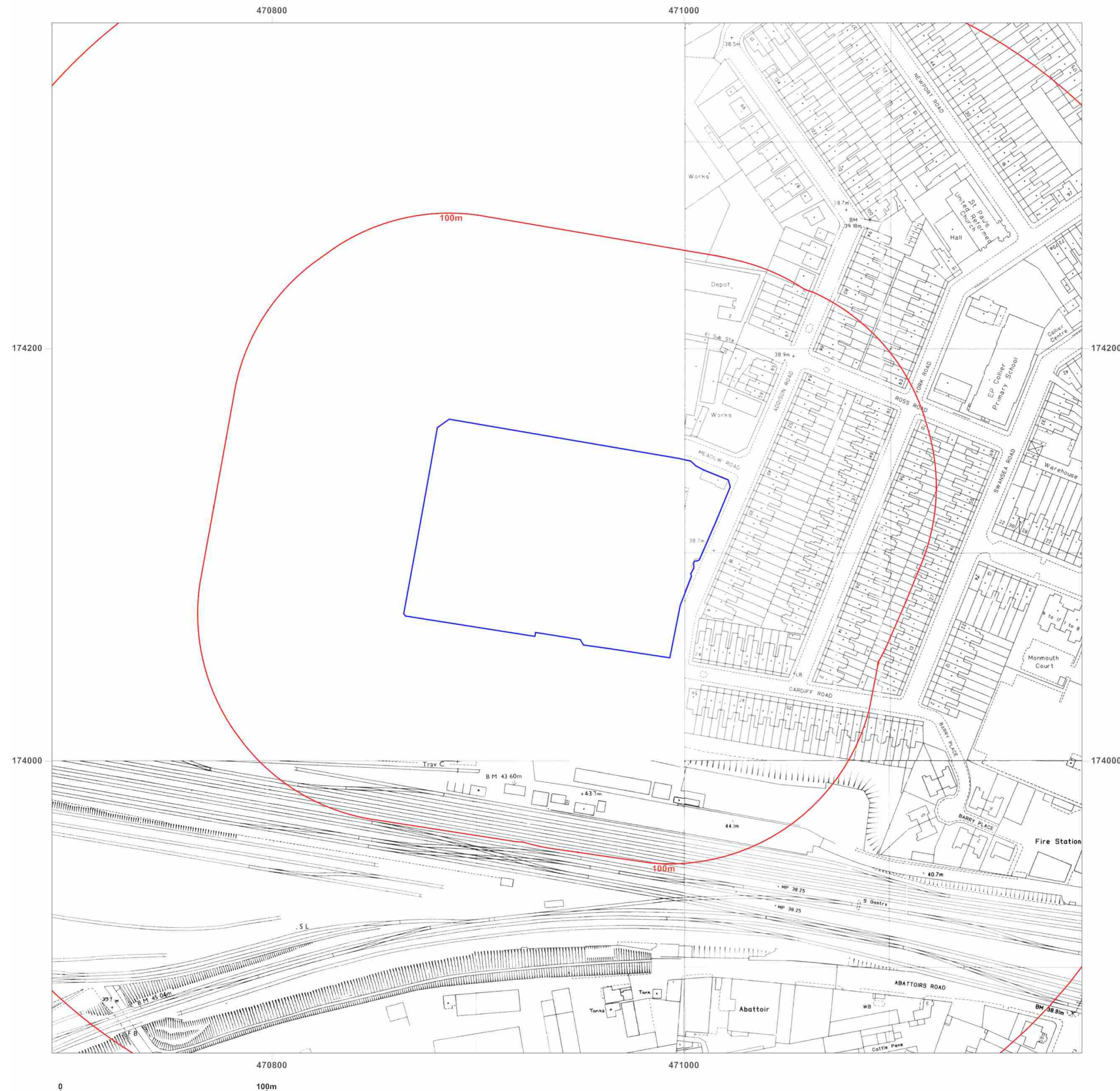


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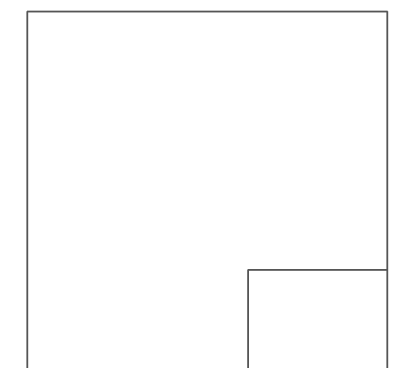
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Grid Ref: 470943, 174108

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

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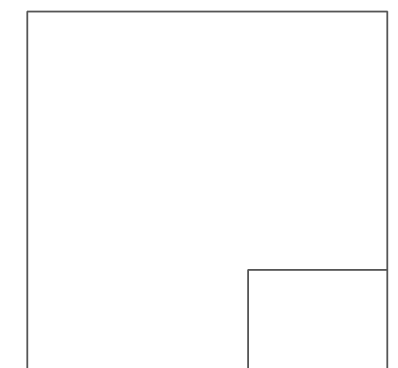
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