



Preliminary Geo-Environmental Risk Assessment

Ladybarn Park, Burnage Lane, Manchester

Presented to Manchester City F.C. City in the Community Foundation

Issued: November 2019

Delta-Simons Project No. 18-1673.04



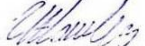
Delta-Simons Environmental Consultants Limited
Head Office: 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR
Tel: 01522 882555 | www.deltasimons.com



Report Details

Client	Manchester City F.C. City in the Community Foundation
Report Title	Preliminary Geo-Environmental Risk Assessment
Site Address	Ladybarn Park, Burnage Lane, Withington, Manchester, M20 4XA
Project No.	18-1673.04
Delta-Simons Contact	[Mike.OHalloran@deltasimons.com]

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	22/11/19	-			
				Charlotte Walker Consultant	Richard Lawless Unit Director	Mike O'Halloran Associate

About us

Delta-Simons is a trusted, multidisciplinary environmental consultancy, focused on delivering the best possible project outcomes for customers.

Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from ten locations - Lincoln, Birmingham, Bristol, Dublin, Leeds, London, Manchester, Newcastle, Norwich and Nottingham - we employ over 100 environmental professionals, bringing experience from across the private consultancy and public sector markets.

Delta-Simons is proud to be a founder member of the Inogen® Environmental Alliance, a global corporation providing multinational organisations with consistent, high quality and cost effective environmental, health, safety, energy and sustainability solutions. Inogen assists multinational clients by resolving liabilities from the past, addressing today's requirements and delivering solutions for the future. With more than 200 offices located on every continent, more than 6,430 staff worldwide, and projects completed in more than 120 countries, Inogen provides a single point of contact for diverse markets as Automotive, Chemical, Consumer Products & Retail, Financial, Food & Beverage, Healthcare, Insurance, Manufacturing, Non Profit Organisations, Oil & Gas, Real Estate, Services Firms, Technology and Transportation, among others.

Executive Summary

Brief	Delta-Simons was instructed by Manchester City F.C. City in the Community Foundation (The Client) to produce a Preliminary Geo-Environmental Risk Assessment for the Site located at Ladybarn Park, Burnage Lane, Withington, Manchester, M20 4XA for the re-development of the existing park facilities, comprising a Multi-Use Games Area and footpath within the current park.
Site Use & Surrounding Area	The Site comprises a rectangular shaped parcel of land in use as a park, with areas of tarmac hardstanding utilised as sports pitches, play areas and footpaths, and well-maintained amenity grass areas. Trees and ornamental shrubs are present around the periphery of the park, whilst remainder of the area comprises further amenity grassland. The Site is located within a predominantly residential area.
Environmental Setting	The Site is likely underlain by a sequence of Topsoil and / or Made Ground (in locations of former buildings or infilled ground) underlain by superficial deposits of Devensian Till (classed as a Secondary Undifferentiated Aquifer), and bedrock of the Chester Formation (Principal Aquifer). The nearest surface water feature is a drain located approximately 300 m to the north of the Site. The nearest major surface water features are the lake within the Platt Fields Park 1.5 km to the north west of the Site and the River Mersey 2.6 km to the South of the Site.
Contamination Potential Sources	Limited potential sources of contamination have been identified, comprising localised Made Ground deposits from former buildings within the Site boundary and an electricity substation in the north west of the Site. Off-Site sources include the adjacent railway and associated sidings approximately 25 m east, areas of potentially infilled land between approximately 60 m and 250 m to the south west, south east, northwest and south, a petrol filling station approximately 125 m north east and commercial/ light industrial buildings located to the north, east and north west, with the closest approximately 60m from Site.
Contaminated Land Risk Associated with Ownership	There is considered to be a Low risk of enforcement action by the regulatory authorities under Part 2A of the Environmental Protection Act, the Water Resources Act or the Environmental Damage Regulations. The potential for legal action by surrounding landowners / Third Parties based on the potential for contamination to migrate off-Site (ongoing or historically) is considered to be Low.
Development Considerations	Widespread contamination is considered unlikely and the preliminary risk assessment has identified a Low risk of soil/groundwater contamination and hazardous ground gas at the Site. Asbestos may be present within the localised Made Ground. No potentially substantial geohazards have been identified within the assessment.
Recommendations	It is recommended that a small scale intrusive Site investigation is undertaken to assess the presence, thickness and nature of Made Ground and potential contamination with respect to human health of Site end users and to assess potential development constraints associated with potentially contaminated soils.

Table of Contents

1.0 INTRODUCTION	1
1.1 Appointment.....	1
1.2 Context & Purpose	1
1.3 Scope of Works	1
1.4 Limitations.....	2
2.0 SITE CONTEXT & DATA REVIEW.....	3
2.1 Site information.....	3
2.2 Environmental Setting	4
2.3 Historical Use of the Site & Surrounding Area	5
2.4 Environmental Database Review	6
2.5 Planning Review / Regulatory Enquiries	7
3.0 CONCEPTUAL SITE MODEL	8
3.1 Introduction	8
3.2 Potential Contamination Sources	8
3.3 Potential Receptors	8
3.4 Potential Pathways	8
4.0 DEVELOPMENT CONSIDERATIONS.....	12
4.1 Potential Remediation Requirements & Solutions.....	12
5.0 CONCLUSIONS & RECOMMENDATIONS	13
5.1 Land Contamination	13

Figures

Figure 1	Site Location
Figure 2	Site Layout

Appendices

Appendix A	Limitations
Appendix B	Risk Definitions
Appendix C	Proposed Development Plans
Appendix D	Historical Maps
Appendix E	Landmark Envirocheck® Report
Appendix F	Regulatory Authority Information

1.0 Introduction

1.1 Appointment

Delta-Simons Environmental Consultants Limited (“Delta-Simons”) was instructed by Manchester City F.C. City in the Community Foundation (the “Client”) to prepare a Preliminary (Geo-Environmental) Risk Assessment for Ladybarn Park, Burnage Lane, Withington, Manchester, M20 4XA (the “Site”).

1.2 Context & Purpose

The aim of this report is to identify likely environmental and geotechnical issues associated with soil and groundwater conditions that may affect the proposed development of the Site. This report is designed in accordance with ‘the Model Procedures for the Management of Land Contamination (CLR 11)’, the relevant requirements of the National Planning Policy Framework 2019 (NPPF) (paragraphs 170 & 178-180)¹ and the Planning Practice Guidance (Land Affected by Contamination)².

The proposed development of the Site comprises the construction of a new Multi-Use Games Area (MUGA) and associated footpaths in the north of the Site within the existing wider park area.

A plan of the development proposal is presented in Appendix C.

The proposed development will only impact a small area in the north of the Site (current MUGA).

1.3 Scope of Works

- ▲ Review of the environmental setting of the Site, including the current use / status of the Site and surrounding area, and review of the geology, hydrogeology and hydrology;
- ▲ Review of the historical activities of the Site and surrounding area;
- ▲ Review of regulatory information relating to the Site;
- ▲ Review of the online planning records for the Site;
- ▲ Consult and review information from the Local Authority in relation to Part 2A of the 1990 Environmental Protection Act;
- ▲ Complete a Site reconnaissance by undertaking a visual inspection of readily accessible areas of the Site;
- ▲ Develop an outline Conceptual Site Model and undertake a Preliminary Risk Assessment with respect to potential contamination focussed on the proposed land use;
- ▲ Identify potential contamination risks and / or liabilities associated with the proposed acquisition of the Site, and;
- ▲ Provide commentary on potential land contamination and geotechnical constraints in the context of the proposed development.

In completing this Assessment, Delta-Simons has utilised the following data sources and third party information:

- ▲ Current and Historical Ordnance Survey (OS) maps;
- ▲ British Geological Survey (BGS) data;
- ▲ Environment Agency (EA) online data;
- ▲ Coal Authority (CA) online data;
- ▲ A Landmark Envirocheck Report for the Site (Ref. 221309767_1_1), dated 14th October 2019;
- ▲ Historical Maps included as part of the Envirocheck Report; and
- ▲ Information provided by Manchester City Council.

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

² <https://www.gov.uk/guidance/land-affected-by-contamination>

1.4 Limitations

The standard limitations associated with this assessment are presented in Appendix A. In addition, there are the following specific limitations that apply to this assessment:

- ▲ The Consultant undertaking the Site inspection will observe for evidence of invasive species, particularly Japanese Knotweed. It should be noted however that the Consultant is not a trained ecologist and a separate survey undertaken by an experienced Ecologist should be completed to provide a robust assessment; and
- ▲ The report includes a preliminary assessment for the potential for radon gas hazards. A detailed radon assessment falls outside of the scope of this report, and the requirement for radon mitigation measures in the proposed development should be identified separately to the satisfaction of Manchester City Council Building Control.

2.0 Site Context & Data Review

2.1 Site information



Figure 1: Contains OS data © , Crown Copyright and Database Right (2019)

Contains Data from, © 2019 Landmark Information Group Ltd

© OpenStreetMap contributors



Figure 2: Contains OS data ©, Crown Copyright and Database Right (2019)

Site Location		Site Layout	
Co-ordinates	Centred approximately at National Grid Reference 385990, 392860.	Elevation	41.0 m AOD
		Area	9.55 Ha
Site Location	The Site is located off the Kingsway (A34) within Withington, 130 m south west of Mauldeth Road train station and approximately 5 km south of Manchester.		
Current Site Use	The Site is currently in use as recreational grounds, comprising areas of well maintained grass and limited areas of tarmacadam hardstanding in use as sports pitches, play areas and footpaths. Additionally, a wooded area of large trees and bushes with walkways throughout occupies the south of the Site. Two small buildings are present in the north eastern corner and north western corner of the Site, likely to be in use as storage and welfare facilities within the park.		
Proposed Development Description	The proposed development of the Site comprises the construction of a new Multi-Use Games Area (MUGA) and associated footpaths in the north of the Site within the existing park area. The development proposal plan is presented in Appendix C. The proposed development will only impact a small area in the north of the Site (current MUGA).		
Site Reconnaissance	Delta-Simons conducted a Site visit on 6th November 2019. Pertinent information that was observed or reported on-Site is summarised as follows: ▲ The Site is predominately covered by grass, with football pitches in the south; ▲ The boundary of the Site is tree lined;		

	▲ In the north of the Site there are hardstanding areas including tennis courts, basketball courts, skate park, an outdoor gym and a children's playground; ▲ There is a bowling green with associated pavilion in the north-eastern part of the Site; ▲ In the north-east of the Site there is a wooded area; ▲ Across the Site there are numerous public footpaths.	
	No potentially significant sources of contamination associated with the current use of the Site have been identified.	
Current Surrounding Area	North	Primary school (approximately 35 m) and predominantly residential buildings (approximately 10m), with the exception of two vehicle repair garages (approximately 20 and 45 m).
	East	Mauldeth Road station and associated northern bound train line (approximately 25 m), with Petrol Filling Station (approximately 125 m) and commercial/light industrial use units (including a car scrap yard) (approximately 75m) and residential housing (approximately 35 m).
	South	Primary school (approximately 40 m) and residential buildings (approximately 40 m).
	West	Residential buildings (approximately 15 m).
	The train line, petrol filling station and car scrap yard are considered to represent potential off-Site sources of contamination.	

2.2 Environmental Setting

Published Geology	From published British Geological Survey mapping (1:50,000 Sheet Number 98, Stockport), the Site is indicated as being directly underlain by superficial deposits of Devensian Till (Clay) and subsequently underlain by bedrock of the Chester Formation (Sandstone). A fault is also noted to be present in the north east of the Site, trending from north to south. Given the current and former development, Made Ground is likely to be present overlying the Till present at the Site, localised to areas of former buildings.
Specific Ground Conditions	A shallow trial pit, dated 1988, located approximately 150 m to the south-west of the Site (ref. SJ89SE810) encountered Made Ground deposits to approximately 0.90 m, underlain by Clay to a maximum depth of 3.0 m bgl. A deeper borehole, dated 2003, approximately 400 m east of the Site (ref. SJ89SE796) encountered sandstone/ marl to a maximum depth of 80 m bgl.
Hydrogeology	The EA classify the superficial deposits (Devensian Till) as a Secondary Undifferentiated Aquifer and the underlying bedrock (Chester Formation) as a Principal Aquifer. The EA data indicates that the Site is not located within a designated groundwater Source Protection Zone According to the Envirocheck Report, there are two licensed abstraction records from groundwater located within 1 km of the Site, neither of which are used as a potable water source. The closest licensed abstraction is approximately 560 m east of the Site, registered to Cannon Hygiene Limited, for commercial use (laundry). The available BGS borehole information did not indicate the presence of any groundwater, however, perched groundwater may be present within the underlying

	Devensian Till deposits. The main groundwater table is likely to reside within the Chester Formation and this may be afforded protection by the overlying Till, depending on thickness and consistency.
Hydrology	The nearest surface water feature is a drain located approximately 300 m to the north of the Site. According to the Envirocheck Report, there are no licensed abstraction records from surface water located within 500 m of the Site.
Coal Mining	Reference to the Coal Authority on-line viewer indicates that the Site is not within a Coal Mining Reporting Area, and is not within a Development High Risk Area. Consequently, a Coal Mining Risk Assessment (CMRA) is unlikely to be required under the planning regime.
Radon Gas	The property is in a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). As such it is considered that no radon protective measures are necessary in the construction of new dwellings or extensions.
Ecological Receptors	It is understood from information provided within the Envirocheck® Report, there are no statutory ecological receptors located within 500 m of the Site.
Heritage Interest	According to sketchmap.co.uk , the closest area of heritage interest is located approximately 100 m to the north-east of the Site associated with a Grade I Listed Building.
Environmental Sensitivity	The Site is considered to be of a low environmental sensitivity given the superficial clay deposits protecting the Principal Aquifer and the absence of any notable surface water or ecological receptors in the immediate vicinity.
Geotechnical Risks	The Envirocheck® Report identified a very low or no hazard potential for collapsible ground stability hazards, landslide ground stability hazards and shrinking or swelling clay.

2.3 Historical Use of the Site & Surrounding Area

Approach	The historical development of the Site and surrounding area has been assessed through a review of historical OS maps included within the Envirocheck report and Google Earth historical satellite imagery. A summary of the key historical Site uses and developments in the surrounding area is presented below. Copies of pertinent historical maps are included as Appendix D.
Historical Features On-Site	From the earliest reviewed map edition, dated 1848, the Site appears to have been in agricultural use. By 1894, two small buildings are present in the north east of the Site. By the 1907 mapping a proportion of the north of the Site is listed as recreational grounds, where a pavilion is present. There are further small buildings in the north east. By 1922, nine buildings are present in the north east, with one small structure/building in the centre of the Site and band stand in the northern corner in the centre of the recreation ground. In the 1934 map edition the Site is listed as Ladybarn Park (recreation ground), with tennis courts, two bowling greens, a putting green, play ground and wider grassed and wooded areas. The former buildings in the north east, centre and north of the Site are no longer present. Four small buildings are now shown on Site, understood to be small shelters, a pavilion, dressing rooms and toilets. Additionally a structure, later labelled as an electricity substation is now apparent on Site in the north west corner. By the 1959 mapping a further building is present in the north eastern corner, and allotment gardens are listed in the south eastern corner of the Site. By the 1979 to 1989

	mapping, a further small shelter is present in the north of the Site, and the south eastern corner of the Site is no longer listed as allotment gardens. Additionally, the building present in the north west of the Site becomes labelled as an electrical sub-station within the 1979 mapping. Potential on-Site historical sources of contamination include possible Made Ground from former buildings present in the north east and the electrical substation in the north west.
Potentially Contaminative Historical Features Off-Site	Potential sources of contamination within 500 m of the Site include: ▲ Railway in construction shown immediately adjacent to the east of the Site within the 1908 mapping; and ▲ A pond adjacent to the east of the Site present in the 1894 mapping and presumably infilled circa the 1908 map edition.

2.4 Environmental Database Review

Approach	The Landmark Envirocheck® Report provides a database of environmental information held by various statutory bodies including the EA, Local Authority (LA), Health & Safety Executive (HSE) and HPA amongst others. A full copy of the Envirocheck® Report is provided in Appendix E and the most relevant information is summarised below.
Features On-Site	No potentially contaminative entries are listed on-Site within the Landmark Envirocheck® Report.
Potentially Contaminative Features Off-Site	Pertinent entries included within the Landmark Envirocheck® Report located within 250 m from the Site include the following: ▲ One Discharge Consent approximately 90 m north of the Site, regarding a storm overflow discharging to a freshwater river, dated 1995; ▲ Three Local Authority Pollution Prevention and Controls, regarding two waste oil burning controls for the garages approximately 80 m north of the Site and a Petrol Filling Station approximately 165 m to the north east; ▲ One Pollution Incident to Controlled Waters regarding a minor incident approximately 150 m south west, dated 1992; ▲ Seven entries for Potentially Infilled Land (water) regarding unknown filled ground between approximately 60 m and 250 m from the Site, to the south west, south east, north west and south; ▲ Twenty Contemporary Trade Directory Entries, including food distributors and processors, garage services, car dealerships, printers and petrol filling stations, between approximately 10 m and 225 m of the Site, to the north, east, north east and south east. The closest of which is regarding the food processors and distributors approximately 10 m to the north east; ▲ One Fuel Station Entry regarding a currently active petrol station approximately 165 m to the north east. ▲ Seven Commercial Services regarding vehicle repair and servicing, vehicle cleaning services and the petrol station, between approximately 60 m and 165 m to the north and east of the Site; ▲ One Manufacturing and Production regarding an unspecified works or factory approximately 95 m east of the Site; and ▲ Five Public Infrastructure entries regarding railway stations and petrol stations between approximately 125 m and 170 m to the north east and north west of the Site.

	Furthermore, there are no BGS, LA and EA registered landfill sites or BGS recorded mineral sites on or within 500 m of the Site.
Implications for Land Contamination Risk	No potential sources of contamination have been identified on the Site from the regulatory information. However, limited potential off-Site sources of contamination have been identified that will be considered in the preliminary risk assessment.

2.5 Planning Review / Regulatory Enquiries

On-line Planning Portal	Manchester City Council	Date Accessed	16/10/2019
Findings	There are three planning applications for the Site listed (ref. 104181/DEM/2013/S1, 038026 and F08155/LA), which comprised the proposed demolition of a single storey brick building within the Park, the extension of the existing bowls club and the extension to provide toilets within the Park. No additional potentially contaminative activities or other information pertinent to this assessment was identified from the historical planning records.		
Part 2A of the Environmental Protection Act (EPA) 1990	The Contaminated Land Officer (CLO) confirmed that the Site is not on their list for inspection, nor have they assigned the Site a risk rating under Part 2A of the Environmental Protection Act 1990. There are no current proposals to investigate the Site or surrounding area under Part 2A of the Environmental Protection Act 1990. Copies of the pertinent information is appended as Appendix F.		

3.0 Conceptual Site Model

3.1 Introduction

A Conceptual Site Model (CSM) represents the relationships between contaminant sources, pathways and receptors, to support the identification and assessment of Possible Pollutant Linkages (PPL).

3.2 Potential Contamination Sources

Identified potential contamination sources are presented in the following table:

Reference	Source	Location	Dates Present	Potential Associated Contaminants of Concern
S1	Potential demolition Made Ground	North east	Post 1907 to present	Asbestos, heavy metals, PAHs, hazardous ground gases.
S2	Electricity substation	North west	Post 1934 to potentially present	Polychlorinated Biphenyls.
S3	Railway	Adjacent to east	1907 to present	Heavy metals, PAHs, hazardous ground gases.
S4	Petrol Filling Station	165m north east	Unknown to present	Petroleum hydrocarbons.
S5	Infilled pond	50m	Pre 1907 to present	Hazardous ground gases.

* Based on UK Department of the Environment Industry Profiles

3.3 Potential Receptors

Relevant potential receptors are considered to include:

- ▲ R1 - Construction workers.
- ▲ R2 - Third parties during construction (adjacent Site users and adjacent residents).
- ▲ R3 - Future Site users and maintenance workers.
- ▲ R4 - The small water course approximately 300 m north of the Site.
- ▲ R5 - The underlying aquifers.
- ▲ R6 - The Built Environment (new buildings and infrastructure / utilities).

The River Mersey 2.6 km to the south is not considered to be a plausible receptor given its distance from the Site.

3.4 Potential Pathways

The potential pathways are considered to be as follows:

- ▲ P1 - Direct contact, ingestion or inhalation of soil bound contaminants / dust during or following redevelopment.
- ▲ P2 - Inhalation of organic vapours associated with contamination.
- ▲ P3 - Migration of ground gas / vapours into on-site buildings causing asphyxiation or risk of explosion.

- ▲ P4 - Leaching of contamination into groundwater followed by migration of groundwater to the wider groundwater environment or discharge to surface waters.
- ▲ P5 - Direct contact between aggressive ground conditions and new infrastructure.

Pollutant Linkage Assessment					
Source(s)	Pathway(s)	Receptor(s)	Risk Rating	Justification & Mitigation (if required)	Requires Investigation
S1 Potential on-Site Made Ground Deposits	P1, P2, P3, P4, P5	R1, R2, R3, R4, R5, R6	Low Risk	Given the demolition of on-Site former buildings it is likely that there are localised Made Ground deposits on-Site. The presence and matrix of the Made Ground can be assessed through a ground investigation at the Site. The risk posed to future site-users is considered low as only limited localised Made Ground is anticipated. The risk posed to construction workers and off-Site human receptors during the redevelopment of the Site is also considered low as safe working procedures should be implemented, good standards of personal hygiene should be observed and appropriate levels of personal protective equipment (PPE) provided and utilised to reduce the potential risks. Additionally, the risk posed by hazardous ground gases is considered low as it is anticipated that Made Ground is likely to be shallow and limited in extent, and buildings are not proposed within the development. It is considered unlikely that Made Ground poses a significant risk to controlled waters receptors given the distance and presence of superficial deposits. The nature of the Made Ground anticipated, i.e. potential demolition materials from previous structures, is not anticipated to represent a significant source of mobile contamination.	Y
S2 Electricity Substation	P1	R1, R2, R3	Low Risk	There is the potential for historic PCB leaks from the substation, understood to have been present on the Site from 1934, prior to the disuse of PCBs in electricity substations in 1981. However, the substation is not located within the area of proposed development. Although historic leaks of PCBs are possible, it is considered unlikely that the migration of contaminants onto the area of proposed development will have occurred, given the underlying impermeable superficial deposits (Devensian Till). Therefore, the risk posed to future site-users is considered to be low in the context of the proposed development.	N

Pollutant Linkage Assessment					
Source(s)	Pathway(s)	Receptor(s)	Risk Rating	Justification & Mitigation (if required)	Requires Investigation
S3 Railway adjacent to Site	P1, P2, P3, P4	R1, R2, R3, R4, R5	Low Risk	It is considered that the adjacent railway line may represent a source of contaminants associated with railway processes, such as coal, fuels, oils and waste products. However, given that the proposed development area is not adjacent to the railway, and the underlying Devensian Till will limit migration of potentially mobile contaminants, it is considered unlikely that the railway would impact on the proposed development and no further work is required.	N
S4 Petrol Filling Station	P1, P2, P3, P4	R1, R2, R3, R4, R5	Low Risk	Although the petrol filling station has been identified as a source of petroleum hydrocarbons, it is considered that any contamination from nearby off-Site sources is likely to be limited due to the distance and the presence of underlying Devensian Till (clay) deposits, which would be likely to mitigate significant contaminant migration.	N
S5 Infilled pond	P1, P2, P3, P4	R1, R2, R3, R4, R5	Low Risk	The infilled pond is considered to pose a low risk to receptors, given it is a localised source and it is unlikely that significant volumes of putrescible material were placed. Additionally, given the length of time since infilling, any gas generation is likely to have ceased. As there are no buildings proposed on Site, and therefore no plausible pollutant linkage, it is considered that the pond represents a low risk and no further work is required.	N

4.0 Development Considerations

4.1 Potential Remediation Requirements & Solutions

Soils	The risk of the Site requiring widespread remediation to protect end users is considered to be low, although localised remedial measures, a hotspot protocol for example may be required in areas of Made Ground. If contamination and / or ACMs are identified, then this may have an impact on waste disposal costs.
Groundwater	Significant widespread groundwater contamination is not anticipated.
Ground Gas	As buildings are not proposed within the current proposed development plan, a ground gas risk is not considered to be present at the Site.

5.0 Conclusions & Recommendations

5.1 Land Contamination

Contamination Risks Associated with Ownership (Current Use)	There is considered to be a Low risk of enforcement action by the regulatory authorities under Part 2A of the Environmental Protection Act, the Water Resources Act or the Environmental Damage Regulations, whilst the Site remains in its current use as public open space. The potential for legal action by surrounding landowners / Third Parties based on the potential for contamination to migrate off-Site (ongoing or historically) is considered to be Low .
Potential Contaminated Land Development Risks	Widespread contamination is considered unlikely and the preliminary risk assessment has identified a Low risk of soil/groundwater contamination and hazardous ground gas at the Site. However, it should be noted that asbestos may be present within the Made Ground.
Plausible Geotechnical Development Risks	There are limited geotechnical development risks on the Site as buildings are not proposed within the current proposed development plan. It is anticipated some form of ground improvement (e.g. proof rolling) may be required to create suitable formation strata.
Recommendations	A small scale intrusive investigation is recommended in order to assess the presence, thickness and nature of Made Ground and potential contamination with respect to human health of Site end users and to assess potential development constraints associated with potentially contaminated soils.

Appendix A – Limitations

Limitations

The recommendations contained in this Report represent Delta-Simons professional opinions, based upon the information listed in the Report, exercising the duty of care required of an experienced Environmental Consultant. Delta-Simons does not warrant or guarantee that the Site is free of hazardous or potentially hazardous materials or conditions.

Delta-Simons obtained, reviewed and evaluated information in preparing this Report from the Client and others. Delta-Simons conclusions, opinions and recommendations has been determined using this information. Delta-Simons does not warrant the accuracy of the information provided to it and will not be responsible for any opinions which Delta-Simons has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Appendix B – Risk Definitions

Contaminated Land Risk Definitions

The following methodology is based on the methodology presented in CIRIA C552 Contaminated Land Risk Assessment: A Guide to Good Practice 2001. It requires the classification of the:

- ▲ Magnitude of the potential consequence (severity) of the Risk occurring: and
- ▲ Magnitude of the Probability (likelihood) of the Risk occurring.

The classifications are then compared to indicate the risk presented by each pollutant linkage.

Consequence to Receptor Definition Matrix

	Human Health	Controlled Waters	Buildings/Services
Severe Consequence	Acute or chronic permanent impact on human health.	Sensitive controlled water pollution ongoing, or just about to occur.	Catastrophic collapse
Medium Consequence	Chronic permanent impact on human health	Gradual pollution of sensitive controlled water	Degradation of materials
Mild Consequence	Chronic temporary impact on human health	Gradual pollution of non-sensitive controlled water	Damage to building rendering it unsafe to occupy (eg foundation damage resulting in instability).
Minor Consequence	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc).	Slight discoloration of water	Easily repairable effects of damage to buildings, structures and services, i.e discoloration of concrete

Probability Definitions

Probability	Definition in Context
Higher	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution. Positive evidence of source, pathway and receptor.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term. Suspect source, pathway, and receptor
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term No evidence of hazard, pathway, and receptor

Standard Risk Matrix

		Consequence/Magnitude of impact			
		Severe	Medium	Mild	Minor
Probability	High	Very High	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/low	Low
	Low Likelihood	Moderate	Moderate/low	Low	Very Low
	Unlikely	Moderate/low	Low	Very Low	Very Low

Classified risks and likely action

Significance Level	Definition/Comments
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required. Demonstrable contaminated land situation, highest threat & liability level, urgent action recommended.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term. Likely contaminated land situation, risk assessment and action recommended.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, if it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term. Plausible contaminated land situation, risk assessment and possible action recommended.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild. Unlikely contaminated land situation, possible risk assessment and possible action.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe. Negligible risk, no action recommended except vigilance for changes in conditions.

Geotechnical Risk Classification

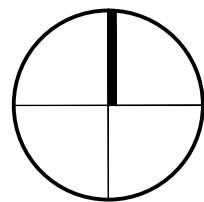
The geohazards listed in the report within Section 4 follow guidance presented in Clayton, C.R.I. (2001) *Managing Geotechnical Risk*, Thomas Telford and the Highways Agency document HD22/08 '*Managing Geotechnical Risk*' (2008) which aims to identify and manage the geotechnical risks associated with a scheme throughout its lifespan, from planning to construction to maintenance.

For each geohazard the probability of the hazard occurring (P) has been considered together with the impact it would have (I) if it were to happen to calculate the risk rating between 1 and 25.

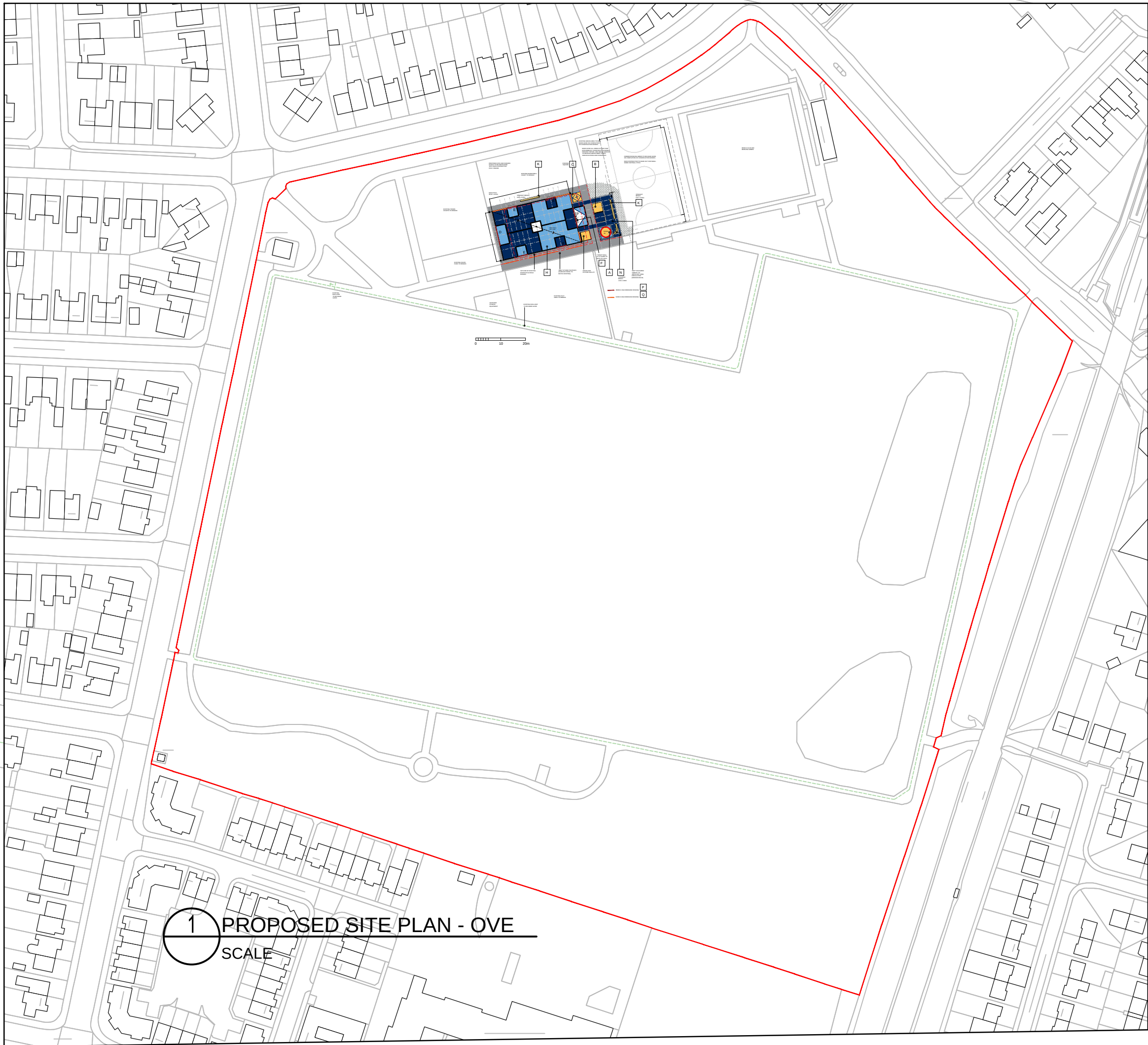
Risks that fall within Moderate, Significant and Severe categories below are considered to be **substantial** and are therefore listed within the report.

Probability	(P)		Impact	(I)		(R)	Risk
Very Likely (VLk)	5	X	Very High (VH)	5	=	20 – 25	Severe
Likely (Lk)	4		High (H)	4		15 – 19	Substantial
Plausible (P)	3		Medium (M)	3		10 – 14	Moderate
Unlikely (U)	2		Low (L)	2		5 – 9	Minor
Very Unlikely (VU)	1		Very Low (VL)	1		1 – 4	Negligible

Appendix C – Proposed Development Plans



EQUIPMENT KEY		(DRAWING REFERENCE)
A.	4m PANNA	(13034-DB3-BOX-XX-DR-A-90201)
B.	FOOTBALL TENNIS	(13034-DB3-BOX-XX-DR-A-90202)
C.	PASSING SQUARE	(13034-DB3-BOX-XX-DR-A-90203)
D.	STD LARGE GOAL	(13034-DB3-BOX-XX-DR-A-90204)
E.	STD CROSS-PLAY GOAL	(13034-DB3-BOX-XX-DR-A-90205)
F.	LARGE GOAL + 1v1	(13034-DB3-BOX-XX-DR-A-90206)
G.	MAIN PITCH S/O (B01)	(13034-DB3-B01-XX-DR-A-90207)
H.	MAIN PITCH S/O (B02)	(13034-DB3-B02-XX-DR-A-90208)
I.	LARGE GOAL + 1v1 + BASKETBALL	(13034-DB3-BOX-XX-DR-A-90214)
J.	RUN-LOOP MARKERS	(13034-DB3-BOX-XX-DR-A-90209)
K.	LINEAR BENCH	(13034-DB3-BOX-XX-DR-A-90210)
L.	CURVED BENCH	(13034-DB3-BOX-XX-DR-A-90211)
M.	1v1 + BASKETBALL	(13034-DB3-BOX-XX-DR-A-90212)
N.	J-SHAPED BENCH	(13034-DB3-BOX-XX-DR-A-90213)
O.	TYPICAL DETAILS SHEET	(13034-DB3-BOX-XX-DR-A-90217)
P.	FULL HEIGHT FENCE DETAIL	(13034-DB3-BOX-XX-DR-A-90215)
Q.	MINI FENCE DETAIL	(13034-DB3-BOX-XX-DR-A-90216)



P2	27/09/19	AMENDED LAYOUT TO SUIT CLIENT COMMENTS	TL	TL
P1	20/09/19	AMENDED PROPOSED SITE LAYOUT IN LINE WITH RECENT COMMUNICATIONS	TL	TL
REV	DATE	DESCRIPTION	DR	CH

APPROVAL

darntonB3
ARCHITECTURE
LEEDS

The Coach House, Monk Fryston Hall, Monk Fryston, LS25 5DU.
T: 01977 681 001 www.darntonb3.com

CLIENT
CITY IN THE COMMUNITY

PROJECT
PLAY ZONE PILOTS
LADYBARN PARK

TITLE
PROPOSED
SITE PLAN

CREATION DATE	SCALE @ A1	DRN	CHK	STATUS
20/09/19	1:200	TL	TL	S4

SHEET NO.	REVISION
13034-DB3-B02-XX-DR-A-90103	P2

PROJECT NO: 13034-DB3-B02-XX-DR-A-90103
© COPYRIGHT: ALL RIGHTS RESERVED.
THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND
ANY DISCREPANCIES MUST BE REPORTED TO DARNTONB3 IMMEDIATELY.
THE DRAWING OR INFORMATION MUST NOT BE USED FOR CONSTRUCTION UNLESS EXPRESSLY ISSUED
FOR CONSTRUCTION.
DO NOT SCALE FROM THIS DRAWING. WORK ONLY TO THE PRINTED DIMENSIONS.

1 PROPOSED SITE PLAN
1:200

1 PROPOSED SITE PLAN - OVE
SCALE

Appendix D – Historical Maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

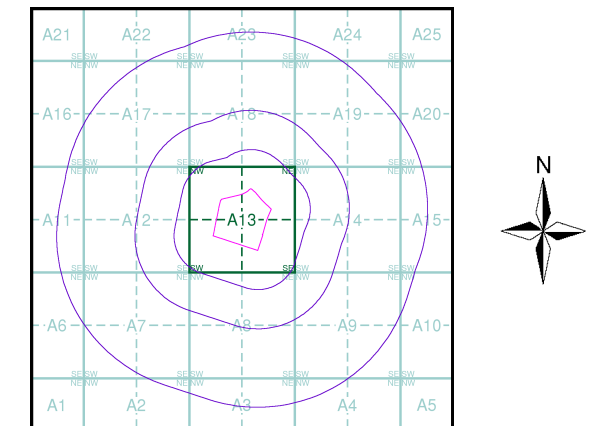
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1894 - 1895	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1908 - 1911	7
Cheshire	1:10,560	1911	8
Lancashire And Furness	1:10,560	1923	9
Lancashire And Furness	1:10,560	1934	10
Lancashire And Furness	1:10,560	1938	11
Cheshire	1:10,560	1938	12
Ordnance Survey Plan	1:10,000	1955	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Manchester	1:25,000	1975	15
Ordnance Survey Plan	1:10,000	1976	16
Ordnance Survey Plan	1:10,000	1981 - 1985	17
Ordnance Survey Plan	1:10,000	1989	18
Ordnance Survey Plan	1:10,000	1990	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2019	22

Historical Map - Slice A



Order Details

Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details

Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP

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

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Fireproof Building Prominent Fireproof Building

Non-fireproof Building Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale Hydroelectric Power Station

Radio Station, drawn to scale Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry Open-pit Salt Mine

Pit Oil Deposit or Well Oil Seepage

Tailings Pile Fuel Storage Tanks Natural Gas Tank

Bench Mark Drill Hole Burial Mound Triangulation Point on Burial Mound

Single-track Railroad Double-track Railroad and Station Building

Coniferous Forest Deciduous Forest Mixed Forest

Lawns Citrus Orchard Wet Ground Scattered Vegetation

243.8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0.2 Velocity of the current, width of river bed, depth of river

180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Partly Demolished Buildings Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building Prominent Industrial Building

Individual Dwelling, Fireproof Ruins of an Individual Dwelling

Factory or Mill Chimney Factory or Mill with Chimney Factory or Mill without Chimney Mine or Open Pit Mine

Operating Shaft or Mine Non-Operating Shaft or Mine Salt Mine Tailings Pile

Pit Stone Quarry Gas Pump or Service Station Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick Small Hydroelectric Power Station Power Station Transformer Station

Cemetery Burial Mound (height in metres) Triangulation Point on Burial Mound Triangulation Point

Bench Mark Bench Mark (monumented) Telegraph Office Telephone Station

Radio Station Radio Tower Airfield or Seaplane Base Landing Strip

Telegraph/Telephone Lines Main Highway Highway under Construction Improved Dirt Road (former truck road)

Double-track Railroad with First Class Station Dismantled Railroad Railroad Under Construction

Shore Embankment River or Ditch with Embankment Direction and velocity of current Water Gauge Water Level Mark

Well Water Reservoir or Rain Water Pit Spring Isobath with value

Heavy (Index) Contour Line Contour Line and Value Half Contour Line Spot Elevation Value

Coniferous Deciduous Mixed Scrub

Key to Numbers on Mapping

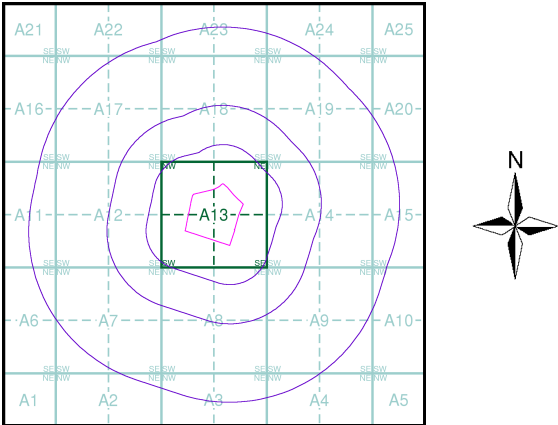
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1894 - 1895	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1908 - 1911	7
Cheshire	1:10,560	1911	8
Lancashire And Furness	1:10,560	1923	9
Lancashire And Furness	1:10,560	1934	10
Lancashire And Furness	1:10,560	1938	11
Cheshire	1:10,560	1938	12
Ordnance Survey Plan	1:10,000	1955	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Manchester	1:25,000	1975	15
Ordnance Survey Plan	1:10,000	1976	16
Ordnance Survey Plan	1:10,000	1981 - 1985	17
Ordnance Survey Plan	1:10,000	1989	18
Ordnance Survey Plan	1:10,000	1990	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2019	22

Russian Map - Slice A



Order Details

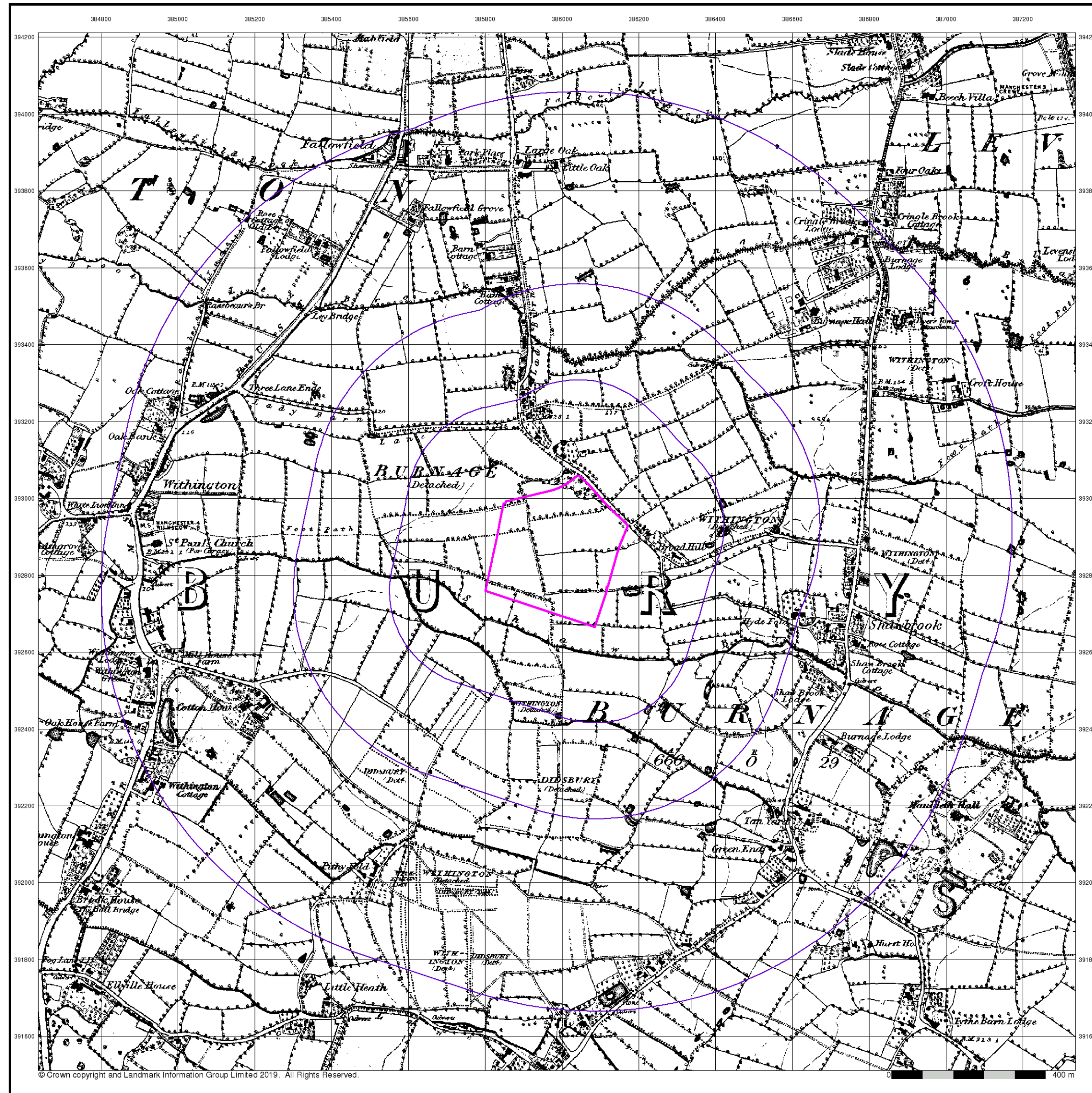
Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details

Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP

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



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck®

LANDMARK INFORMATION GROUP®

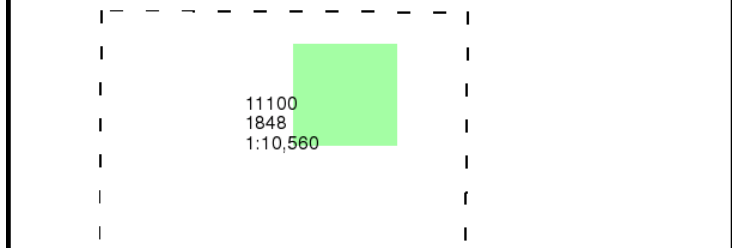
Lancashire And Furness

Published 1848

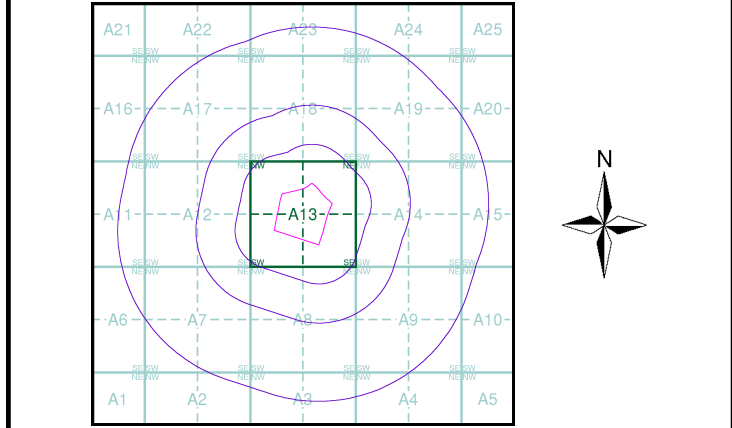
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



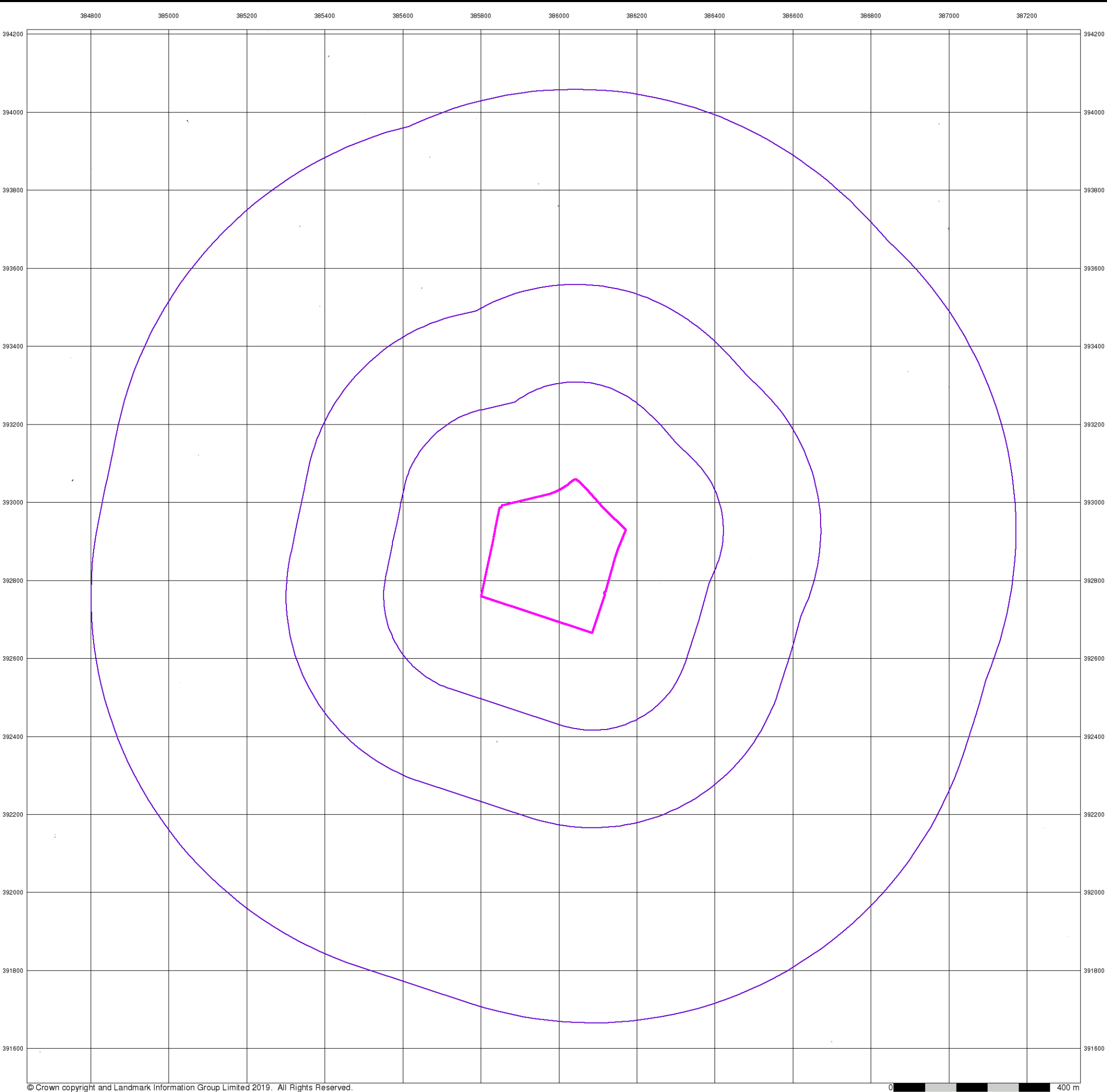
Historical Map - Slice A



Order Details	
Order Number:	221309767_1_1
Customer Ref:	18-1673.04
National Grid Reference:	385990, 392860
Slice:	A
Site Area (Ha):	9.55
Search Buffer (m):	1000

Site Details
Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck[®]

● LANDMARK INFORMATION GROUP[®]

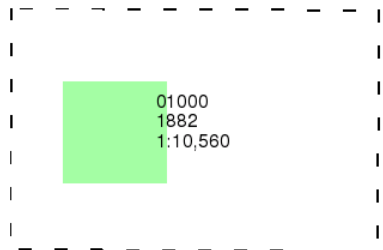
Cheshire

Published 1882

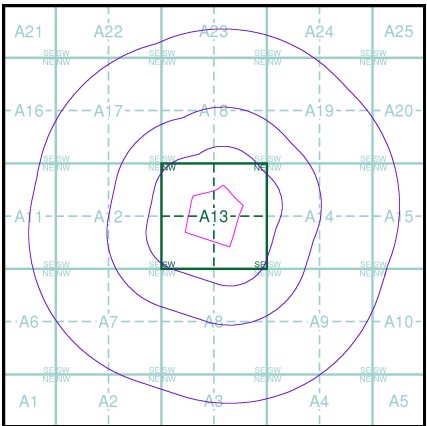
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

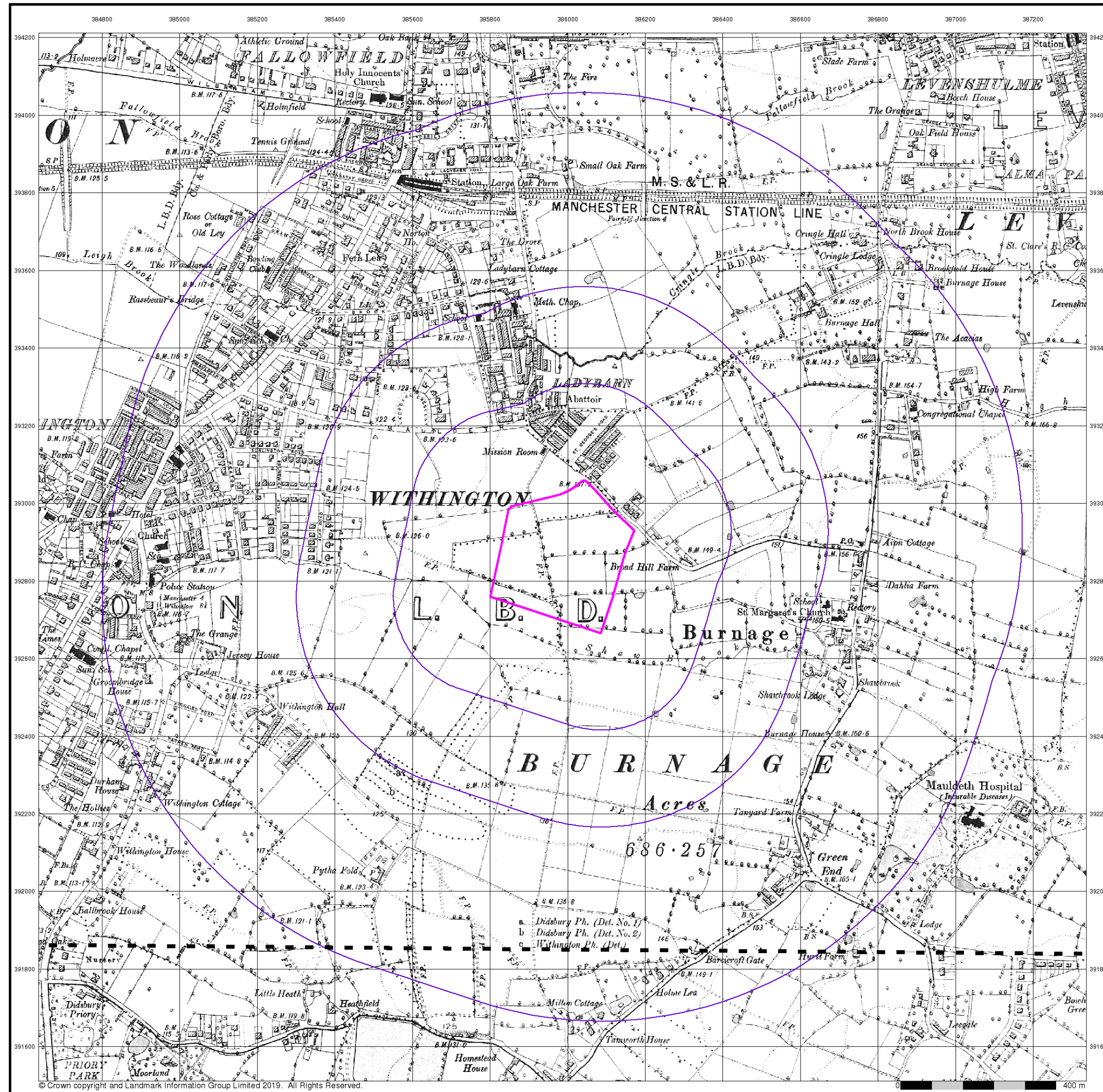
Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details

Ladybarn Park, MANCHESTER, M20 4RW

Landmark[®]
● INFORMATION GROUP

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



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck®

LANDMARK INFORMATION GROUP®

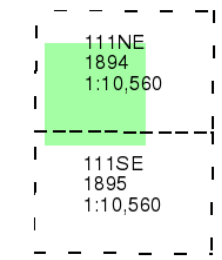
Lancashire And Furness

Published 1894 - 1895

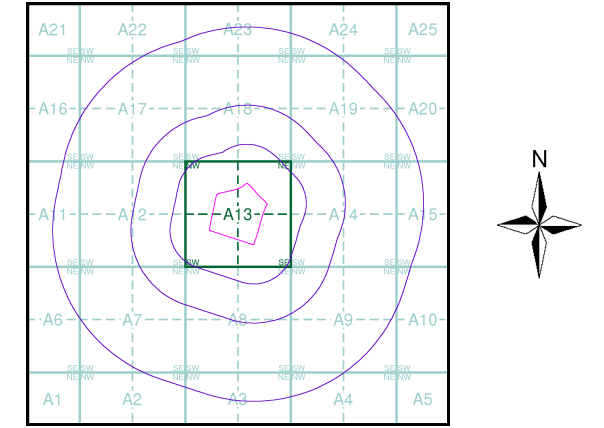
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



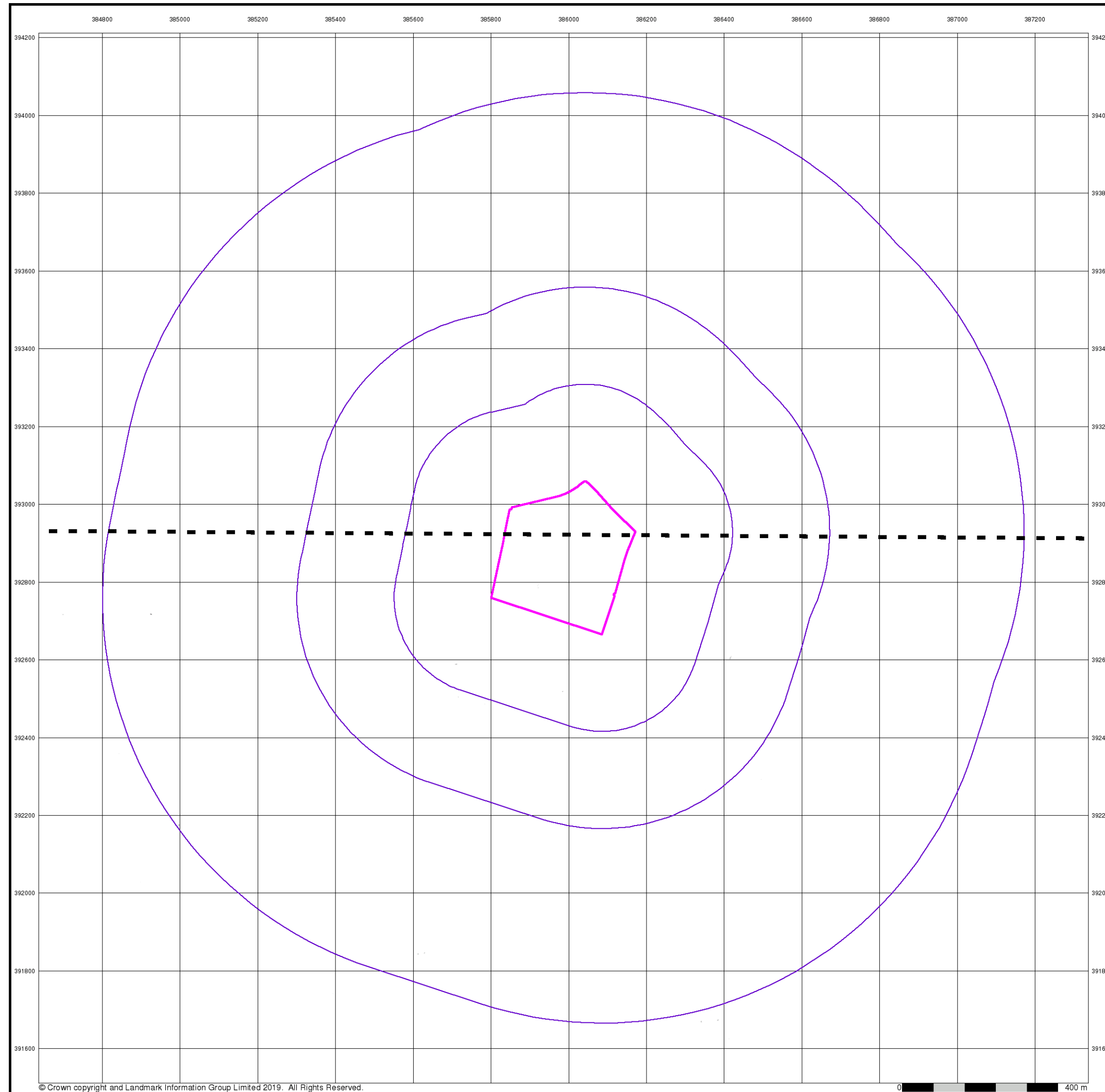
Historical Map - Slice A



Order Details	
Order Number:	221309767_1_1
Customer Ref:	18-1673.04
National Grid Reference:	385990, 392860
Slice:	A
Site Area (Ha):	9.55
Search Buffer (m):	1000

Site Details
Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck®

LANDMARK INFORMATION GROUP®

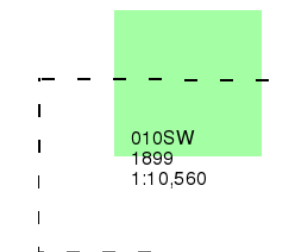
Cheshire

Published 1899

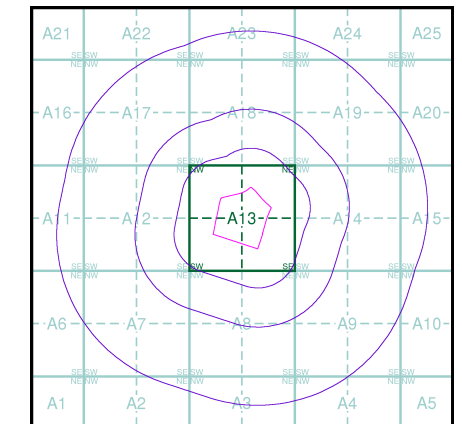
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details

Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP

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



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck®

LANDMARK INFORMATION GROUP®

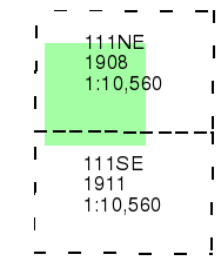
Lancashire And Furness

Published 1908 - 1911

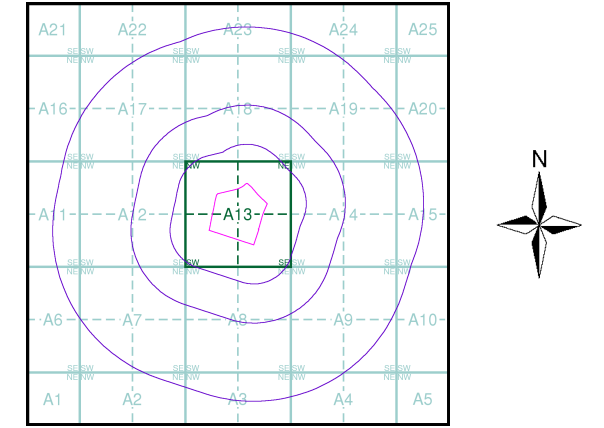
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



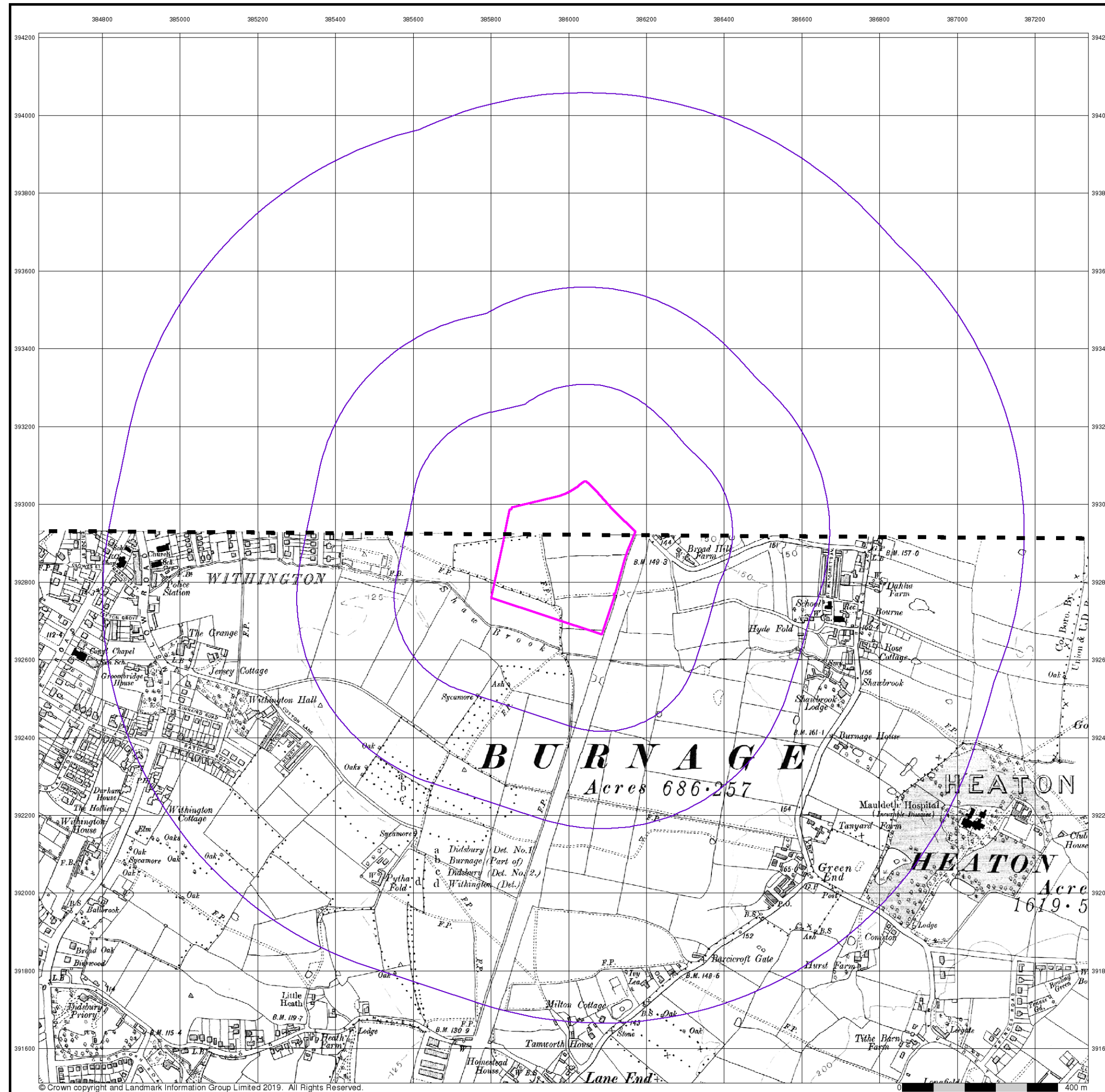
Historical Map - Slice A



Order Details
Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details
Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2019. All Rights Reserved.

Envirocheck®

LANDMARK INFORMATION GROUP®

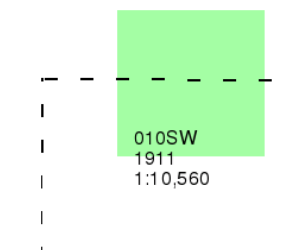
Cheshire

Published 1911

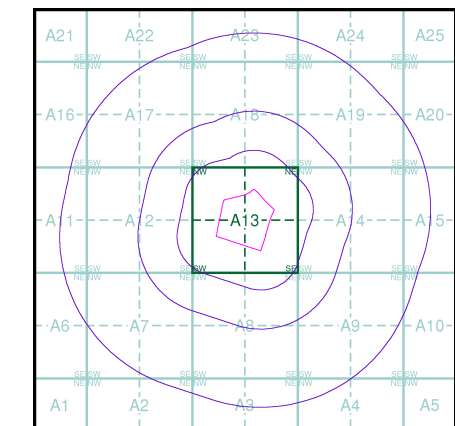
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 221309767_1_1
Customer Ref: 18-1673.04
National Grid Reference: 385990, 392860
Slice: A
Site Area (Ha): 9.55
Search Buffer (m): 1000

Site Details

Ladybarn Park, MANCHESTER, M20 4RW

Landmark®
INFORMATION GROUP

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