



Photograph 9 – BH101 33.0m to 36.0m bgl



Photograph 10 – BH102 24.5m to 29.5m bgl



Photograph 11 – BH102 29.5m to 32.5m bgl



Photograph 12 – BH102 32.5m to 35.5m bgl



Photograph 13 – BH106 19.5m to 24.5m bgl



Photograph 14 – BH106 24.5m to 28.0m bgl



Photograph 15 – BH106 28.0m to 29.5m bgl



APPENDIX 3 – Detailed UXO Risk Assessment



International Unexploded Ordnance Risk Mitigation

Many People...
...One Aim



EXPLOSIVE ORDNANCE
DESKTOP STUDY

PROJECT: 22411

87a ROCHDALE ROAD
MANCHESTER
M4 4HY

GROUNDTECH
CONSULTING



EXPLOSIVE ORDNANCE DESKTOP STUDY

Of

87a ROCHDALE ROAD
MANCHESTER
M4 4HY

Conducted by EOD Contracts Limited

On behalf of

GROUNDTECH
CONSULTING

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TERMS AND DEFINITIONS

ANTI-AIRCRAFT SHELLS (AA)

Small High Explosive Shells (HE) shells ranging up to 100mm in diameter.

BATTLEFIELD AREA CLEARANCE (BAC)

The systematic clearance of munitions from military property or old battle sites e.g., ranges, airfields etc.

BOREHOLE SEARCH

The placing of boreholes in a set pattern, then using a magnetometer to take readings at specific depths along each borehole. When used with a geophysical survey system this will give a magnetic signature of the area. The depth of the borehole and the pattern will depend upon the type of Unexploded Bombs (UXB) and the geology of the ground.

DOODLE BUG

(SEE PILOTLESS AIRCRAFT)

EXPLOSIVE ORDNANCE (EO)

All munitions containing explosives, nuclear fission/fusion materials and or biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket and Small Arms Ammunition (SAA); all mines, torpedoes and depth charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices (IED); and all similar or related items or components explosive in nature.

EXPLOSIVE ORDNANCE CLEARANCE (EOC)

See BAC.

EXPLOSIVE ORDNANCE DISPOSAL (EOD)

The detection, identification, field evaluation, render safe, recovery and disposal of **UXO**.

GEOPHYSICAL SURVEY

The survey of an area using a Magnetometer and geophysical gathering device, after interpretation, this will produce a geophysical map and an object list for any metallic anomalies.

HIGH EXPLOSIVE (HE)

High explosives burn/detonate at rates of up to 9,000 m/per second.

INCENDIARY BOMB (IB)

Incendiary bombs ranged from 1kg in size to 500kg the larger sizes were sometimes called Oil Bombs. Fills range from thermite mixtures, phosphorus to kerosene.

INTRUSIVE SURVEY

The use of a cone penetrometer (MagCone) or drilled boreholes (MagDrill) to take magnetometer test in a set pattern (see borehole search), or to prove pile positions.

LAND SERVICE AMMUNITION (LSA)

LSA is defined as “All items containing explosives or pyrotechnic compounds which are placed, thrown or projected so as to cause damage to men and equipment during land warfare.

LONG RANGE ROCKET (LRR)

The long-range rocket sometimes codenamed Big Ben is the V2 rocket designed to deliver an approximate payload of 1000 kg.

OIL BOMB (OB)

A bomb containing a flammable liquid, normally the KC 250 Flam or the C 500 flam.

PILOTLESS AIRCRAFT (PAC)

A flying bomb (Fly) or doodlebug is the V1 rocket or predecessors designed to deliver an explosive payload of approximately 500kg - 800kg.

PARACHUTE MINE (PM)

Air dropped mine may have been used as a blast effect bomb maximum explosive content 1600lb always fitted with anti-handling and anti-stripping equipment.

UNEXPLODED BOMB (UXB)

Any air dropped bomb that has failed to operate.

UNEXPLODED ORDNANCE (UXO)

Explosive ordnance that has been primed, fused, armed, or otherwise prepared for use or used. It may have been fired, dropped, launched or projected yet remains unexploded either through malfunction or design or for any other cause.

VENGEANCE WEAPONS (V)

V1 see Pilotless Aircraft.

V2 see Long Range Rocket.

WWI

First World War 1 (1914 – 1918)

WWII

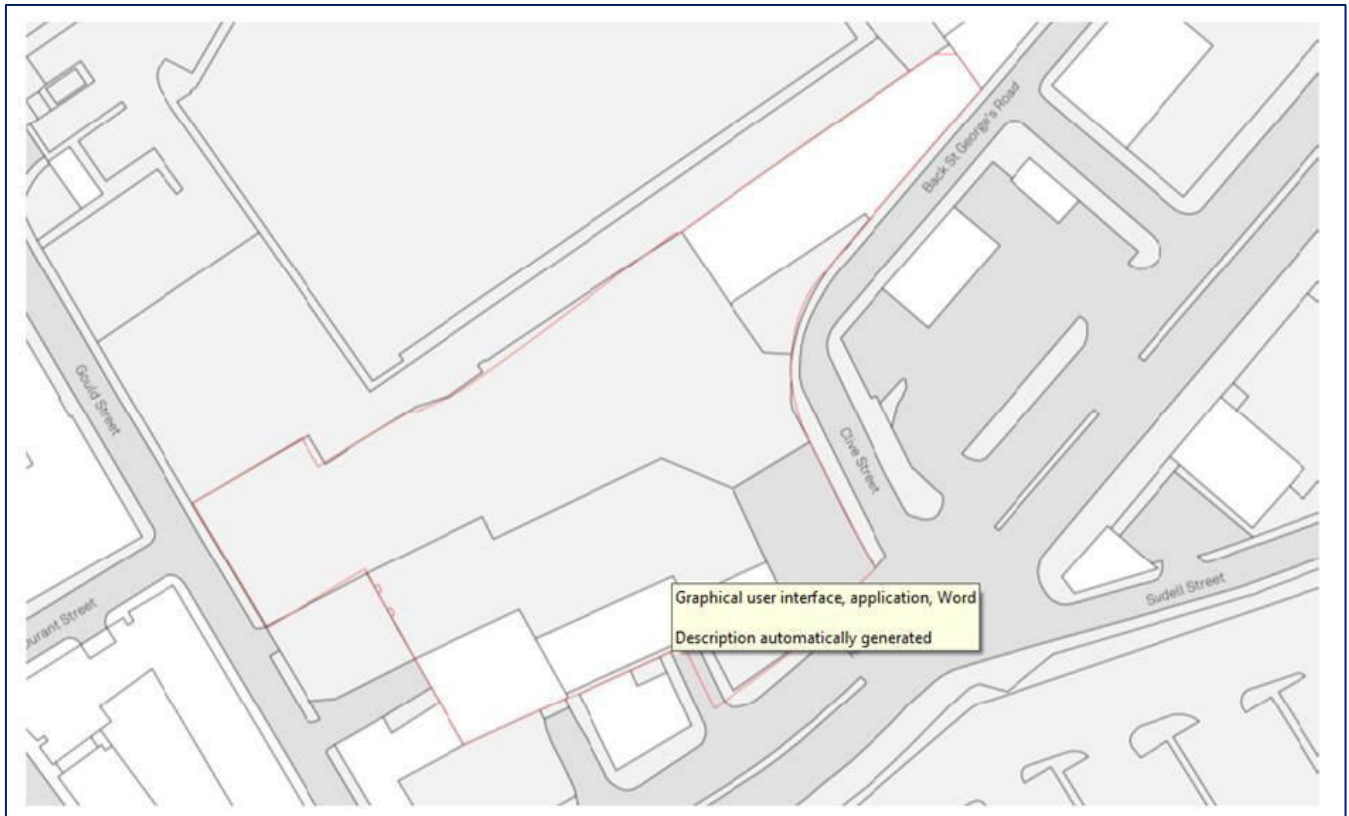
Second World War 2 (1939 – 1945)

EXECUTIVE SUMMARY

1. INSTRUCTION

- 1.2 EOD Contracts Ltd (ECL), have been commissioned by **GROUNDTECH CONSULTING** (hereafter, “the Client”) to undertake a desktop study for potential historic Unexploded Ordnance (UXO) contamination for the future works being carried out within the Highlighted area provided within the CLIENTS drawing below (Photo 1.1).

Photo 1.1: Site boundary/drawing provided by Client.

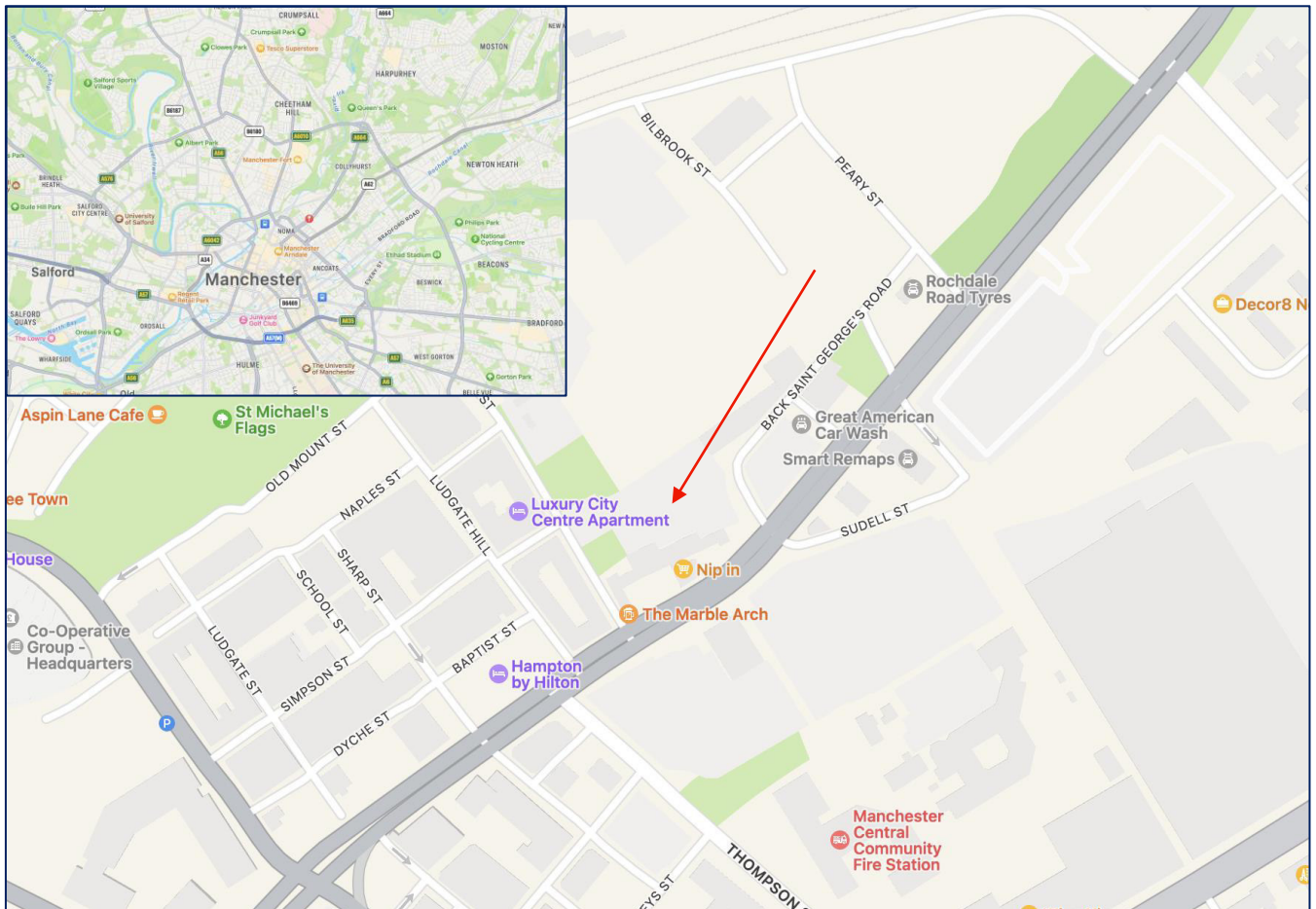


2. SCOPE OF WORK

- 2.1 The scope of this EO Risk Assessment/Desk Study is to assess the likelihood of buried EO/UXO within the environs of “the site” (See Photo 1.1), in view of further development. A further aim was to evaluate the implication from UXO contamination during any future intrusive land use.
-

3. LOCATION

3.1 The Site area is located within the M4 postcode of Manchester, Access to the Site can be gained via Rochdale Rd (Southern edge of Site). Should the need be required the Client will provide an exact meeting point.



TITLE	DESCRIPTION (CENTRE OF SITE)
Site Post Code	M4 4HY
Grid Reference	SJ 847991 / SJ 8471699138
What3Words	grins.coins.call
OS (X)	384716
OS (Y)	399138

4. SOURCES OF UXO CONTAMINATION

4.1 Using thorough research (utilising both modern and historic data) EOD Contracts Ltd deem that the main source of UXO contamination pertaining to the site are as follows.

- Air delivered ordnance bombs and sub-munitions/incendiaries.

5. KEY FINDINGS

- 5.1 Based on the information researched by EOD Contracts Ltd for the proposed works being carried out, EOD Contracts Ltd can conclude the following.
- 5.2 There are no recorded incidents of the site being the subject of bombardment throughout WW1.
- 5.3 Manchester was the subject of over several raids throughout WW2, the worst of which being the Christmas raids in December 1940.
- 5.4 The Site itself was fully utilised throughout WW2 and would have been occupied throughout this period. Also, due to the nature of the building if a bomb had struck the Site and failed to initiate, it would have been noticed.
- 5.5 The Site area has been the subject of several phases of construction works post WW2.
- 5.6 Therefore (to summarise) EOD Contracts Ltd deem that there is a **LOW** risk pertaining to items of UXO being located within the Site location.

6. RECOMMENDATIONS

- 6.1 It is recommended that the following risk mitigation strategy be executed during phases of the project indicated previously as a **LOW** risk.
- 6.2 UXO safety awareness training should be given at all levels of site personnel and selected individuals on the project staff with relevant responsibilities. A competent person as part of the project safety induction course should provide the awareness training. It should be reinforced with specific safety briefings and toolbox talks to individuals involved in conducting intrusive earthworks.

EOD Contracts Ltd can supply a turnkey solution to your UXO requirements. Therefore, the following mitigation strategies can be supplied for land or water-based operations:

- Intrusive survey using CPT (Cone Pressure Testing) or borehole equipment, supplying risk mitigation to all Borehole and Pile locations, down to a maximum bomb penetration depth determined within this document.
- Non-Intrusive Survey using multiple array system with DGPS (Digital Global targets be identified).
- Offshore, near-shore, estuarine and freshwater water environments magnetic, side scan and bathymetric supported by state-of-the-art DGPS.
- The aforementioned surveys are supported with post processing of data and intrusive investigations if required.
- EOD Engineer over watch using Suitably Qualified and Experienced Personnel, normally former British Army, Navy or RAF Bomb Disposal specialists.
- Explosive Ordnance Safety Presentations.
- EOD Contracts Ltd now offer Utility/Services Detection

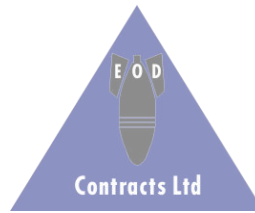
Bibliography

The significant published documents referred to during this study are listed below:

- HO 193 series from National Archives
- HO 198 series from National Archives
- The Blitz Then and Now Volumes 1 to 3
- AA Command Colin Dobinson
- German Air Raids on Britain 1914-1918
- Council Bomb Maps
- AA Command Colin Dobinson
- German Air Raids on Britain 1914-1918

Open Source

- <https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=PUCM>
- <https://hidden-manchester.org.uk/shelters/alexandra-hospital-headle-manchester-regional-war-room-greater-manchester-county-main-control.html>
- https://luna.manchester.ac.uk/luna/servlet/detail/maps002~1~1~342609~123257?sort=reference_number%2Ctitle&qvq=q:bomb%20damage;sort:reference_number%2Ctitle;lc:maps002~1~1&mi=14&trs=49

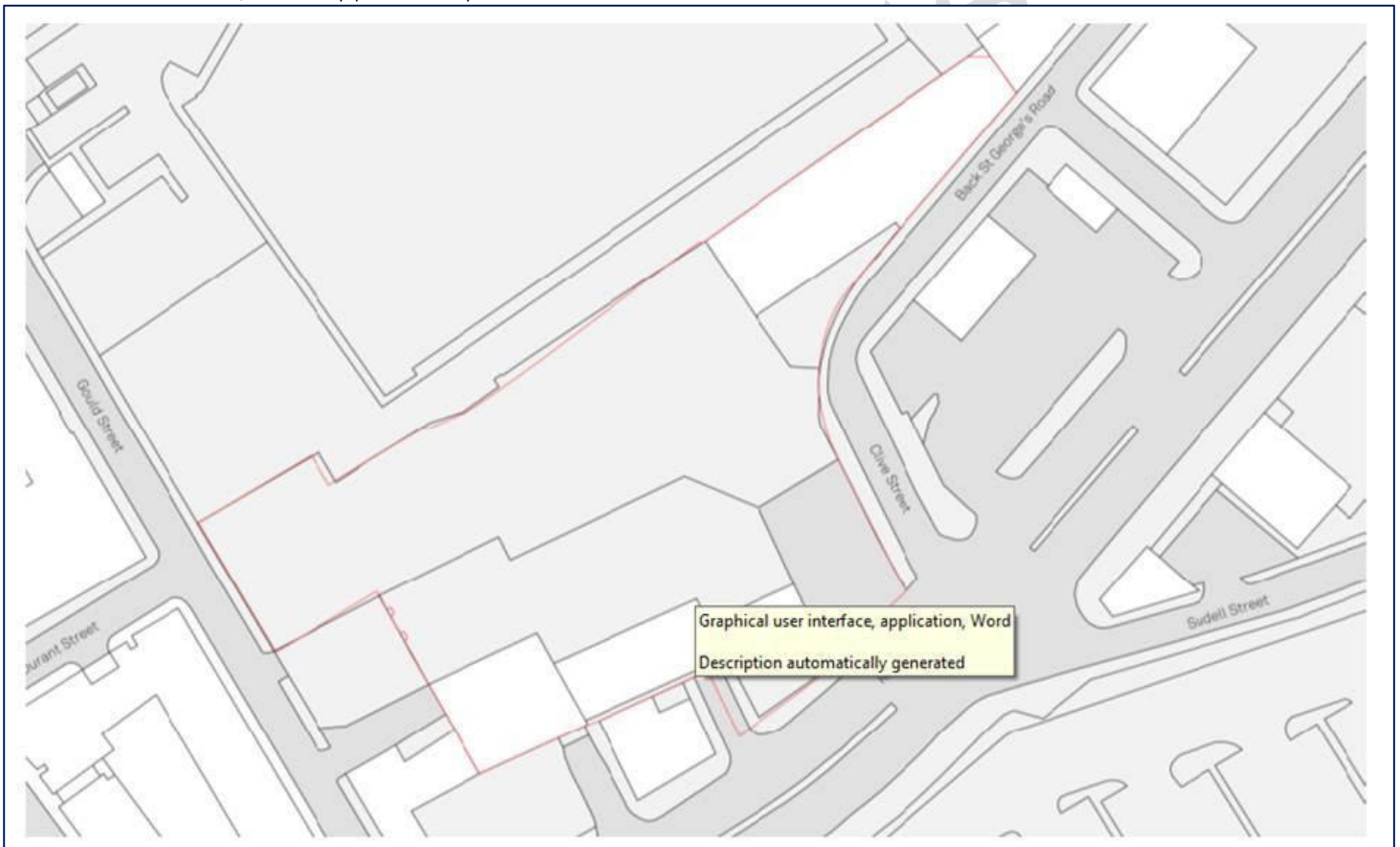


1.0 INTRODUCTION

1.1 Instruction

EOD Contracts Ltd (ECL), have been commissioned by the Client to undertake a desktop study for potential historic Unexploded Ordnance (UXO) contamination for the future works being carried out within the Highlighted areas provided within the CLIENTS drawing below (Photo 1.1).

Photo 1.1: Site location/boundary provided by Client.



1.2 Scope of Work

The scope of this EO Risk Assessment/Desk Study is to assess the likelihood of buried EO/UXO within the environs of “the sites”, in view of further development. A further aim was to evaluate the implication from UXO contamination during any future intrusive land use.

1.3 Restrictions

It must be emphasized that a desk study can only indicate the potential for UXO to be present on the site. A geophysical survey and intrusive investigation are fundamentally important to provide proof that the site is free of the UXO threat.

This study was written with the site conditions prevailing at the time of the study and no liability can be accepted for any change in the condition of the area.

Please note that our appraisal relies on the accuracy of the information contained in the documents consulted and that EOD Contracts Ltd will in no circumstances be held responsible for the accuracy of such information or data supplied.

1.4 Sensitive Documentation

Information may be classified, restricted, or deemed to be confidential in nature to EOD Contracts Limited, where such material has been gained a summary of the documentation has been approved.

1.5 Objective

The objective of this document is to define the UXO contamination routes as defined in Unexploded ordnance (UXO) A guide for the construction industry (C681) dated July 2015 and offer remediation methodologies if required.

2.0 SOURCES OF INFORMATION

Research of the site's history, with regard to military usage, bombing raids and bomb impacts has been undertaken to establish the following:

- Frequency and intensity of enemy bombing raids for the site and immediate vicinity up to 500m.
- Bomb impacts and associated damage on the Site and in the immediate vicinity.
- The potential for UXO to remain on the Site and in the vicinity.
- Records of UXO removal activities for the Site and immediate vicinity.

The main sources of information consulted include:

- EOD Contracts Ltd company records
- Ministry of Defence records
- Central and Local Government Records
- Public Records Office (Kew)
- Historic Maps and Air Photography
- Open-Source information (Internet)
- Drawing Number – Clients Blue Line.

2.1 Ministry of Defence (MOD) Records

33 Engineer Regiment (Explosive Ordnance Disposal) Royal Engineers is the unit responsible for maintaining the records concerning conventional Bomb incidents, reports, clearances and related UXO matters. These records are known to be incomplete and are no longer supplied. Based on in-house information released by the MOD previously, it is considered unlikely that any information released will have any significant impact on the findings of this study.

2.2 Attack Record Keeping

In general, the quality and accuracy of bombing and shelling records prior to 1939 varied greatly from one region to another. Records relating to the limited air attacks on the United Kingdom are considered to be sufficiently accurate in urban areas to provide a reasonable level of confidence in determining the likelihood that an area was or was not bombed during this period. Wartime records, maps etc held within the civil archives are considerably more comprehensive than those still in existence within the MOD, where it is acknowledged that large numbers of records have been disposed of since 1945. Records from some areas, particularly rural districts or near large bodies of water should still be regarded as an incomplete picture of the extent and effect of the bombing campaign.

2.3 Attack Record Accuracy

While an Air Raid was in progress it was inevitable that mistakes would be made in the transcription of rushed verbal reports into the written records. Discrepancies did occur between the total of bombs dropped against detonations witnessed. In some cases, records were made several hours after the event and mistakes were inevitable. Some reports were drafted before the full extent of the raid had been determined which has led to significant omissions in the records. Reports of raids on rural areas were often witnessed and submitted by untrained individuals and passed through third parties before being recorded. Suspect UXB's occasionally went unreported by local farmers and freeholders who saw the event as insignificant or were reluctant to report their findings for fear of valuable land or crops being destroyed by the authorities in their attempts to find the UXB.

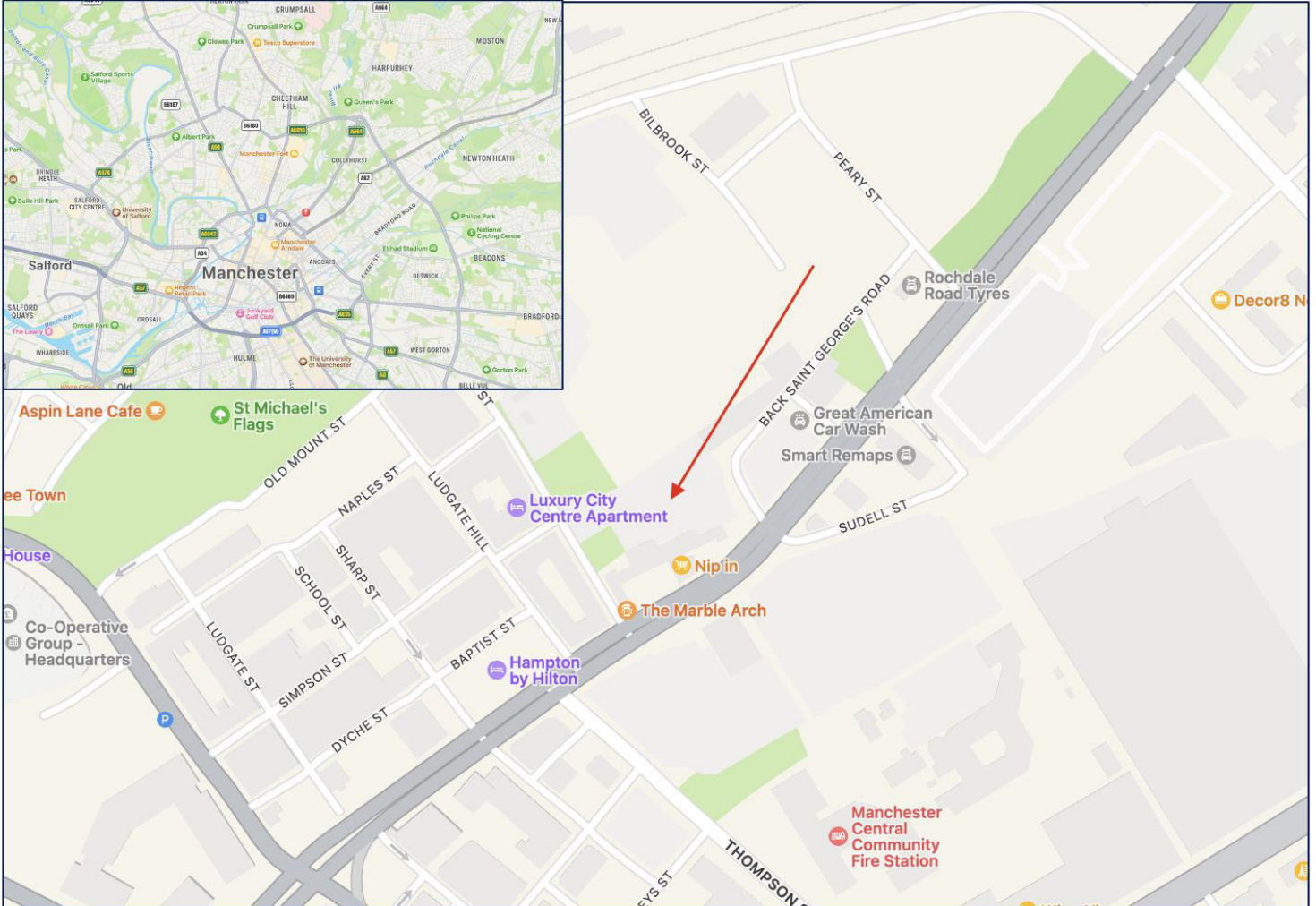
2.4 Errors and Omissions

The accuracy of bombing records has been shown to vary greatly; this may have been a result of the individual record keeper's expertise. Additionally, in some cases, errors occurred as a result of poor or incomplete transcription and copying. Some "errors and omissions" were intentional, designed to serve as dis-information to confuse German intelligence. So long after the event, official verification of such incidents has often proven to be impossible to obtain. At present, UXBs are found on construction sites and other locations where there had been no documentary evidence to suggest their presence. These events, although infrequent, do serve as confirmation that records cannot be considered definitive.

3.0 SITE DESCRIPTION AND DETAILS

3.1 Location

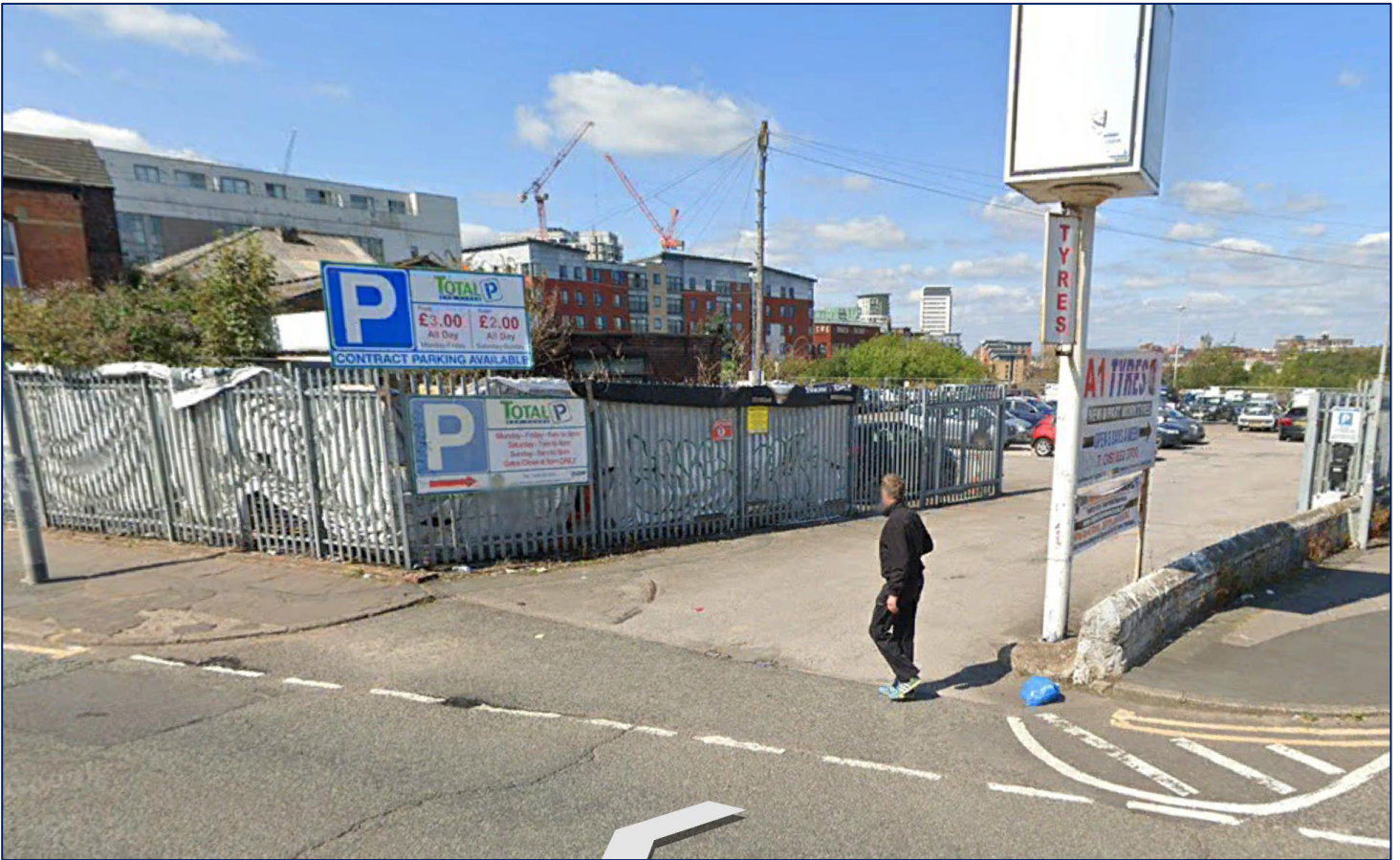
The Site area is located within the M43 postcode of Manchester (northeast of the centre), Access to the Site can be gained via Lumb Lane (eastern edge of Site). Should the need be required the Client will provide an exact meeting point.



TITLE	DESCRIPTION (CENTRE OF SITE)
Site Post Code	M4 4HY
Grid Reference	SJ 847991 / SJ 8471699138
What3Words	grins.coins.call
OS (X)	384716
OS (Y)	399138

3.2 Description

Photo 3.1: At present the Site area is utilised as a private carpark with no significant structures within it.



3.3 Current Site Use

See 3.2 Description & Annex A.

3.4 Future Works

At the time of writing this report it is understood that the site will be redeveloped. Therefore, it is assumed that the following intrusive construction works will be carried out:

NOTE: The full scope of works has not been made available to ECL at the time of writing this report.

- Geotechnical investigations, percussive drilling/trial pits/window/samples
- Removal of building foundations to natural ground level
- Foundations with large diameter rotary bored piling

3.5 Geology

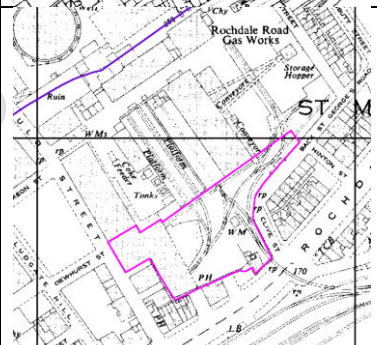
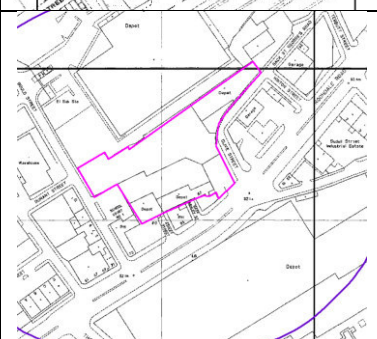
British Geological survey (BGS) (1:50,000 series) indicates the Geological sequence beneath the site comprises of:

Age range:	<u>Bolsovian Substage (CC)</u> — <u>Asturian Substage (CAS)</u>
Lithological Description:	Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with coal seams, but no mudstones containing marine fossils are present.
Definition of Lower Boundary:	Defined by Stubblefield and Trotter, 1957 as the top of the dark grey fissile mudstone with marine fossils of the Cambriense Marine Band. In the Scottish Solway area, the base of the Upper Coal Measures was formerly taken at the base of the Aegiranum (Skelton) Marine Band but is now proposed to be taken at the top of the Cambriense Marine Band to conform with the position elsewhere in the Pennine Basin.
Definition of Upper Boundary:	At the point in the conformable sequence where red or brown mudstones of primary origin, typically assigned to the Warwickshire Group, become predominant over the grey beds, or at the base of the sub-Permian unconformity.
Thickness:	To 350 m in the North Staffordshire (Potteries) Coalfield; 800 m thick in the Canonbie Coalfield.

NOTE: The Geology may vary from above records. However, the information gained through the BGS data will be utilised to determine bomb penetration depths.

4.0 HISTORICAL REVIEW

4.1 Historical Mapping

DATE	DESCRIPTION	PHOTO EXTRACT
Historic Map 1933	The Site pre-WW2 appears fully utilised as part of the Rochdale Road Gas Works. The majority of the Site area is taken up by some form of storage shed with rail lines entering on the eastern edge of the shed.	
Historic Map 1951	The Site post WW2 shows the Site has changed slightly. It appears that the storage shed has been reduced in size, but the remainder of the Site appears unchanged.	
Historic Map 1993 - 1995	Further reduction of the storage shed continued post WW2 until such time as both the storage shed, and the railway sidings were completely removed, and several depots were constructed. The exact depth to which any excavation works reached is not known at this time.	

NOTE: Annex B contains all historic maps from which the below data has been analysed.

4.2 WWI

The Zeppelin Menace

In the early months of the war, a number of high-ranking German naval and military personnel were in favour of launching an aerial campaign against Britain. One of the leading advocates, Konteradmiral Paul Behncke (1866-1937), believed that bombing London, its docks, and the Admiralty building in Whitehall would cause panic in the civilian population, which “may possibly render it doubtful that the war can be continued. Wilhelm II, German Emperor (1859-1941) however, showed a marked reluctance to sanction air raids, particularly in London.

The first bomb to fall on British soil, dropped by a seaplane, landed in Dover on 24th December 1914. The Kaiser, however, only gave his conditional approval for Zeppelin raids (Germany actually used both Zeppelin and Schütte-Lanz airships) to commence on 10 January 1915. London remained excluded as a target until May, with the first raid on the capital taking place on 31st May 1915.

Over the course of 1915 and 1916, German raids reached Britain on fifty-nine occasions (forty-two by airship, seventeen by aeroplane). During this period, airships attacked London eight times, in addition to a raid made by a single aeroplane. On the night of 8/9th September 1915 a Zeppelin attack on the capital caused material damage estimated at £530,000, the most of any single air raid.

Until the summer of 1916 Britain's defences struggled to offer an effective response. Then, following the introduction of new explosive and incendiary ammunition, the advantage swung in favour of the British pilots: they now had an effective means of igniting the Zeppelin's hydrogen.

The Switch to Bomber Aircraft

In the early hours of 3rd September 1916, the first airship shot down over British soil (a Schütte-Lanz, SL.11) crashed in flames in Hertfordshire while attempting to attack London. Within a month the new bullets were responsible for destroying two more intent on bombing the capital, while anti-aircraft guns forced down another. Although the Naval Airship Division retained its faith in airships, only nine raids reached Britain in the last two years of the war. The army, however, abandoned airships and turned to bomber aircraft, which now presented the main threat to London.

The first daylight raid on the capital by Gotha bombers took place on 13 June 1917. It caused 162 deaths and 426 injuries, the most by any single air raid on Britain. Mounting Gotha losses through the summer, however, forced a switch to night bombing in September 1917. Between June 1917 and May 1918 Gotha bombers – joined by the massive R-type Staaken "Giants" (Riesenflugzeug) – attacked London on seventeen occasions and also bombed many south-eastern coastal towns. The last aeroplane raid of the war – aimed at London – occurred on the night of 19/20th May 1918. Zeppelins made one final, futile attack against Britain on the night of 5/6th August.

Effects

Germany's aerial campaign against Britain caused 4,743 casualties (1,394 killed and 3,349 injured) of which 2,603 occurred in London (667 killed and 1,936 injured). Estimates of material damage stand at about £2.9 million with around £2.2 million of that inflicted on London. Still, the raids failed to break the morale of the people. In fact, rather than demand the government sue for peace, as Germany had hoped, the raids led civilians to clamour for reprisal raids against German towns and cities. The raids did, however, fulfil some of their aims. War production reduced dramatically before, during, and after these attacks and Home Defence requirements kept large numbers of men, anti-aircraft guns, and searchlights in Britain, along with sixteen valuable squadrons of the Royal Flying Corps (Royal Air Force from April 1918). Britain also gained from the experience. The integrated defence system in place by 1918 formed the basis for that employed successfully when German aircraft returned to British skies in 1940.

Annex C is a map of the bomb incidents for England throughout this period; it does not indicate that Manchester was targeted throughout this period.

4.4 WWII

4.5 The Blitz Around Britain

The 'Blitz' – from the German term Blitzkrieg ('lightning war') – was the sustained campaign of aerial bombing attacks on British towns and cities carried out by the Luftwaffe (German Air Force) from September 1940 until May 1941.

The Blitz began on 7 September, 'Black Saturday', when German bombers attacked London, leaving 430 dead and 1,600 injured. London was then bombed for 57 consecutive nights, and often during daytime too. London experienced regular attacks and on 10-11 May 1941 was hit by its biggest raid. German bombers dropped 711 tons of high explosive and 2,393 incendiaries. 1,436 civilians were killed. However, this proved to be the last major raid until January 1943.

While London was bombed more heavily and more often than anywhere else in Britain, the Blitz was an attack on the whole country. Very few areas were left untouched by air raids. In relatively small compact cities, the impact of a severe air raid could be devastating.

From mid-November 1940, major provincial cities and industrial centres were targeted. In early 1941 another wave of attacks began, primarily against ports. Respite finally came from June when much of the Luftwaffe was directed against Russia and targets in the Mediterranean.

4.5 Manchester during the Blitz

Manchester and its surrounding area were a major centre of industry during the Second World War. Many large firms were concentrated in the Trafford Park area, making it an important target for the Luftwaffe. Major producers included the aircraft manufacturers A V Roe that produced Manchester and Lancaster Bombers; Ford also employed 17,000 workers making aero engines in a huge new factory complex. During the raids on 22nd – 24th December 1940, the Metropolitan-Vickers works in Mosley Road was just one of the areas factories that was badly damaged. In a later raid in 1941 Manchester United's Stadium was hit by a bomb and remained out of action till 1949.

Manchester was attacked on the night of 22nd – 23rd December and again the following night of 23rd – 24th December 1940 (the Christmas raids). On the first night of the raids over 272 tons of HE Bombs was dropped, followed the next night by a further 195 tons. In cooperation to this the Luftwaffe also dropped around 2000 Incendiary bomblets across the city. Additionally, to these raids, Manchester also suffered smaller attacks, including one in June 1941 when the Blitz was thought to be over. The city had three major raids over the Blitz period (a major raid being defined when over 100 tons of HE Bombs have been dropped) in total, more than 578 tons of explosives were aimed at the city making it the 11th most heavily raided city in Britain.

During the Christmas Raids over 600 fires were started by Incendiary bombs, unfortunately the majority of these were allowed to burn causing further damage. This was due to the cities 3,500 full and part time fire fighters had not returned from Liverpool where they had been sent several days before to help fight fires caused by previous raids. In some cases, the Army was utilised to demolish surrounding buildings to stop the fire from spreading further. Some of the fires continued to burn throughout the day on the 23rd December, providing a beacon for the German Luftwaffe upon its return that night.

So far as the city's infrastructure was concerned, following the Christmas raids both of Manchester's railway stations had been hit, as were the major bus stations. Deansgate and Oxford Road were blocked by debris from damaged buildings; bomb craters and UXBs meant that whole sections of the city had to be cordoned off. Water supplies were also affected, and electricity was rationed.

As for the Site area throughout this period ECL could not find any evidence to suggest that the Site was targeted by the Luftwaffe. The Site was in close proximity to several prime targets such as the Gas Works and the Railyards however, even these were relatively untouched.

4.7 Abandoned Bombs/UXO

Following each air-raid, a search and survey of buildings, facilities and installations would have been carried out; this included a search for evidence of bomb entry holes. If evidence was found, a request would be raised for further investigations to be carried out by the local bomb disposal (BD) team. The BD team would attempt to locate, make safe and dispose of the bomb. Occasionally evidence of UXBs was discovered but due to other, higher priority tasks, investigations would be deferred to a later date. In most cases the weapons were eventually dealt with and removed, but a small number of such reports remain unresolved. The inaccuracy of WWII records, as discussed in previous paragraphs, and the fact that these bombs were 'abandoned', their locations cannot be considered definitive. It would be prudent to assume that other than the recorded abandoned bombs, there will inevitably be UXBs that went un-recorded. EOD

Contracts Ltd found no records to indicate that abandoned bombs are located on the site although enquires continue with the MOD and their findings are yet to be fully reported. On release of the information, it will be given full consideration and the study findings amended if deemed appropriate.

4.8 Anti-Aircraft Artillery

ECL could not identify any gun emplacements located within the Site boundary.

4.9 Prior Clearance Operations

EOD Contracts could find no evidence to suggest that there have been any prior UXO clearance operations in or around the site footprint.

4.10 V1 & V2 Bomb strikes

The site or its surrounding area does not appear to have sustained a direct strike from Hitler's V Weapons. Although the destruction caused by these weapons were great, there is little risk to finding one to this date due to the penetration depth being minimal. This would mean that if any of them failed to function upon impact in somewhere like London (or any other major cities) they were easy to locate.

5.0 SOURCES OF UXO CONTAMINATION

The main sources of UXO contamination that are deemed a threat to the site are:

- Air delivered ordnance bombs and sub-munitions/incendiaries.

5.1 General

EOD Contracts conclude that a **LOW** risk is considered to exist with respect to UXO for areas within the site footprint.

UXOs are essentially dangerous; therefore, further information on UXO and Safety is detailed in [Annex E](#).

5.2 Recent UXO Finds Within the UK

The present-day threat of finding items of UXO within the UK is still high, as highlighted within [Annex E](#).

6.0 RISK ASSESSMENT

6.1 Risk Assessment

Assessing both the likelihood of occurrence and the consequences of the encounter has derived the overall risk for the site from unexploded ordnance. Review of the site's history and geographic location can provide an overall likelihood of encounter factor, which is used in the subsequent determination of a risk level when a Figure can be determined for the consequence.

6.2 Likelihood of Encounter

Given the study findings and other criteria (See **Annex F** Tables) it is considered that there is a **LOW** risk of encountering UXO within the site footprint. This finding is based on assessment of all the available information.

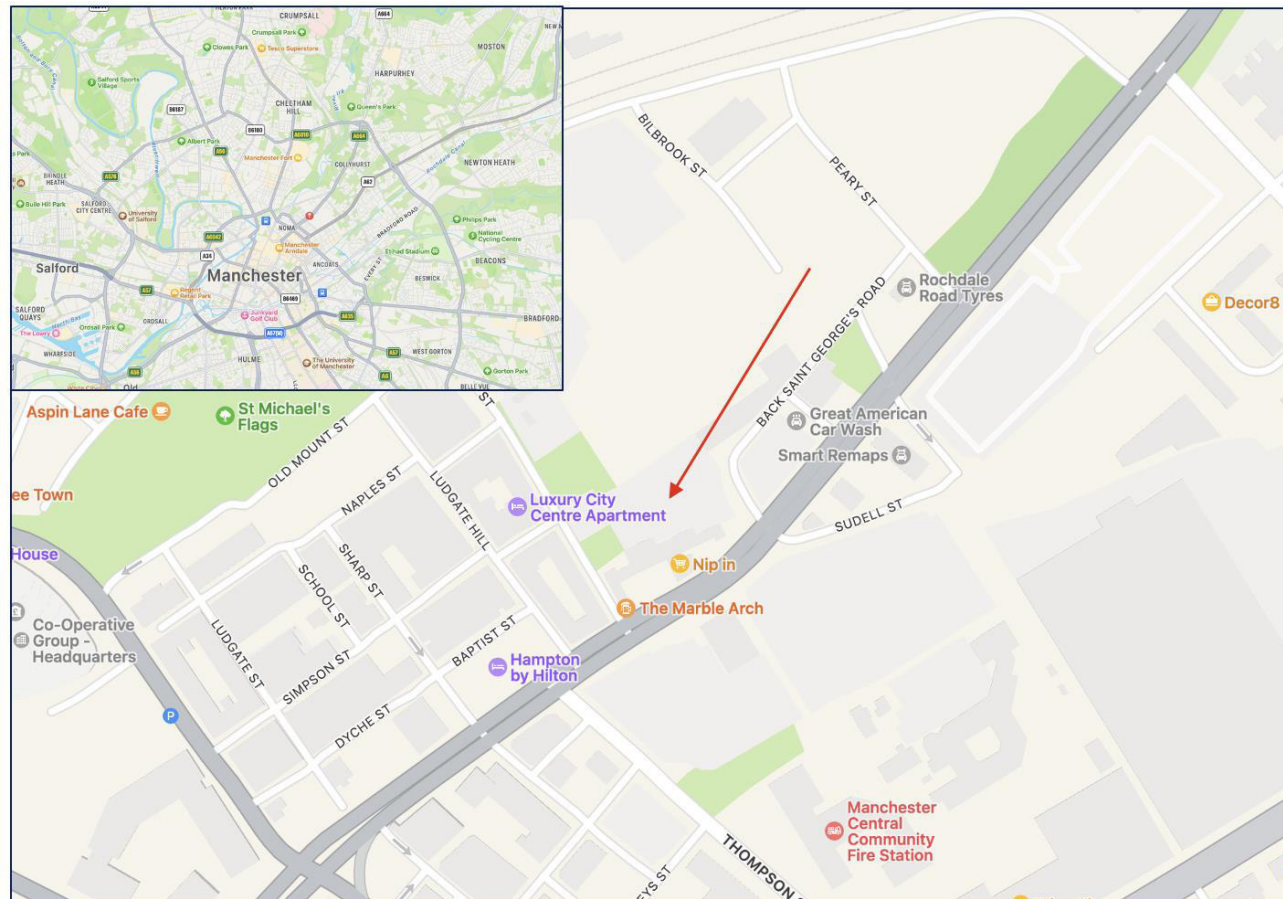
7.0 CONCLUSIONS

- 7.1 Based on the information researched by EOD Contracts Ltd for the proposed works being carried out, EOD Contracts Ltd can conclude the following.
 - 7.2 There are no recorded incidents of the site being the subject of bombardment throughout WW1.
 - 7.3 Manchester was the subject of several raids throughout WW2, the worst of which being the Christmas raids in December 1940.
 - 7.4 The Site itself was fully utilised throughout WW2 and would have been occupied throughout this period. Also, due to the nature of the building if a bomb had struck the Site and failed to initiate, it would have been noticed.
 - 7.6 The Site area has been the subject of several phases of construction works post WW2.
 - 7.7 Therefore (to summarise) EOD Contracts Ltd deem that there is a **LOW** risk pertaining to items of UXO being located within the Site location.
-

8.0 RECOMMENDATIONS

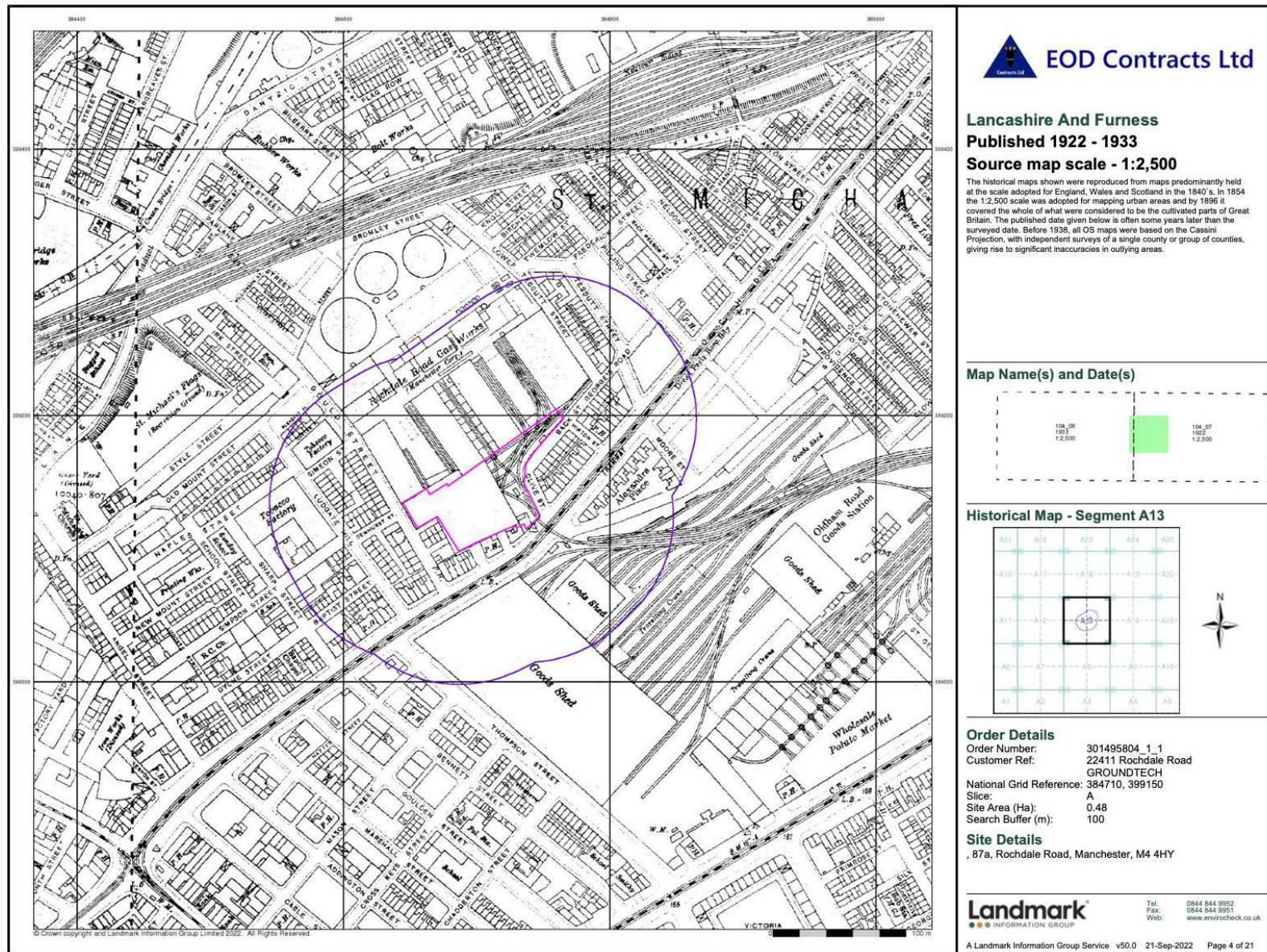
- 8.1 It is recommended that the following risk mitigation strategy be executed during phases of the project indicated previously as a **LOW** risk.
 - 8.2 UXO safety awareness training should be given at all levels of site personnel and selected individuals on the project staff with relevant responsibilities. A competent person as part of the project safety induction course should provide the awareness training. It should be reinforced with specific safety briefings and toolbox talks to individuals involved in conducting intrusive earthworks.
-

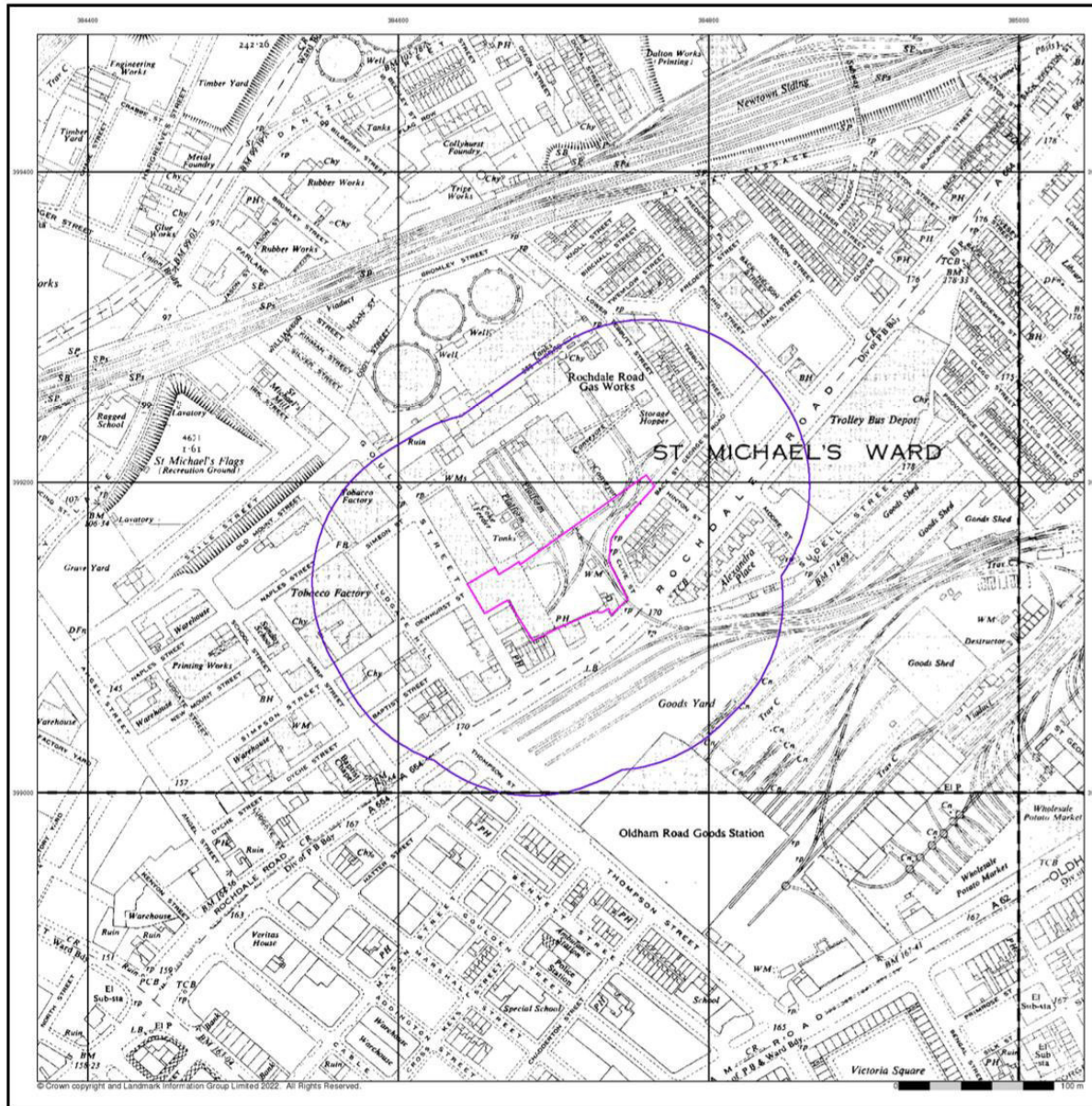
SITE LOCATION



TITLE	DESCRIPTION (CENTRE OF SITE)
Site Post Code	M4 4HY
Grid Reference	SJ 847991 / SJ 8471699138
What3Words	grins.coins.call
OS (X)	384716
OS (Y)	399138

HISTORIC MAPPING





EOD Contracts Ltd

Ordnance Survey Plan

Published 1951

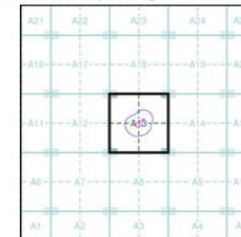
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ8499	SJ8599
1951	1951
1:2,500	1:2,500
SJ8498	SJ8598
1951	1951
1:2,500	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 301495804_1_1
Customer Ref: 22411 Rochdale Road

National Grid Reference: 384710, 399150

Slice: A
Site Area (Ha): 0.48
Search Buffer (m): 100

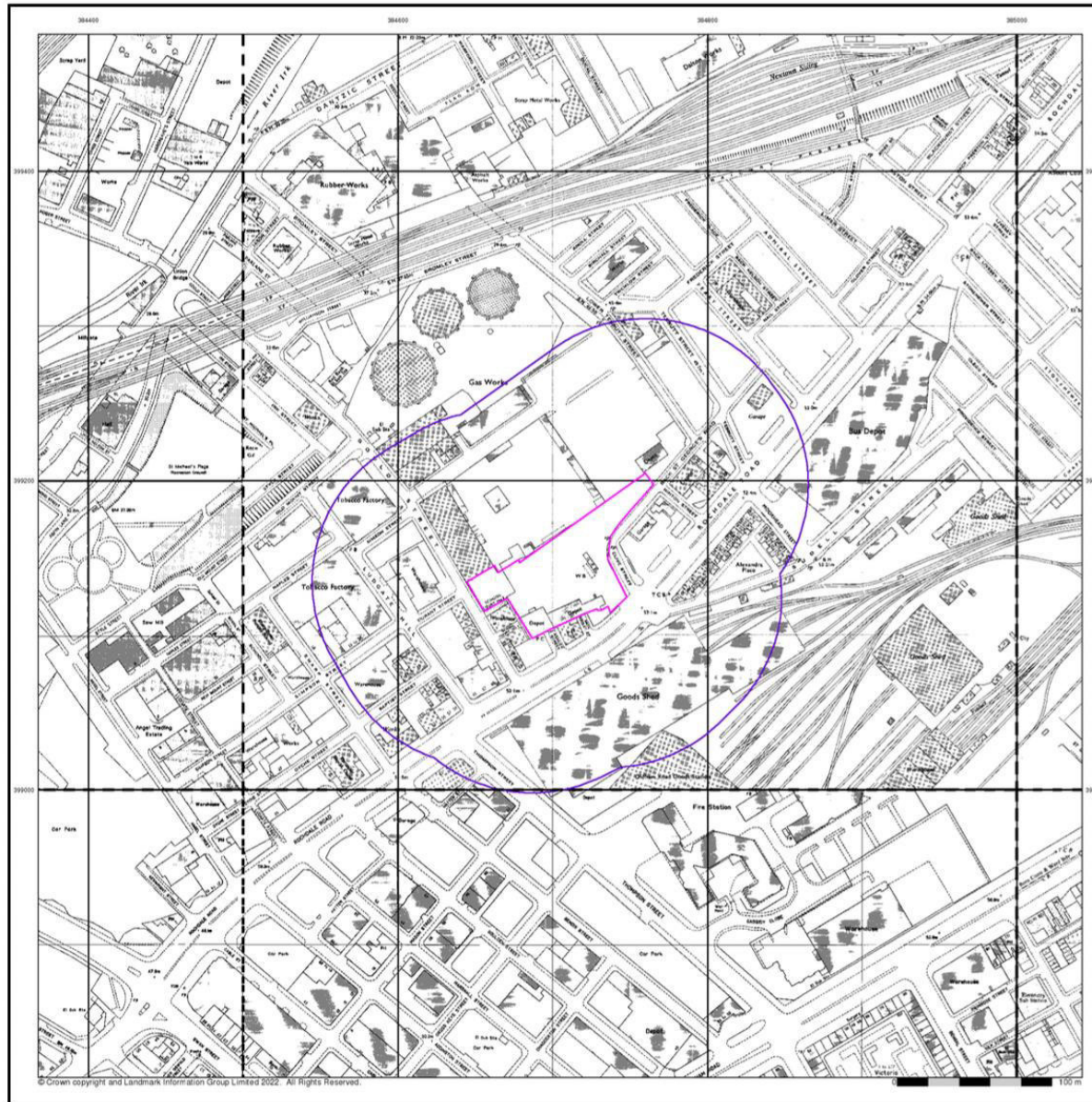
Site Details

87a, Rochdale Road, Manchester, M4 4HY



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

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EOD Contracts Ltd

Ordnance Survey Plan

Published 1968 - 1990

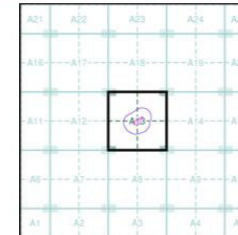
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1898 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ8499SW 1990	SJ8499SE 1970	SJ8599SW 1970
SJ8498NW 1988	SJ8498NE 1988	SJ8598NW 1988

Historical Map - Segment A13



Order Details

Order Number: 301495804_1_1
Customer Ref: 22411 Rochdale Road
GROUNDTECH
National Grid Reference: 384710, 399150
Slice: A
Site Area (Ha): 0.48
Search Buffer (m): 100

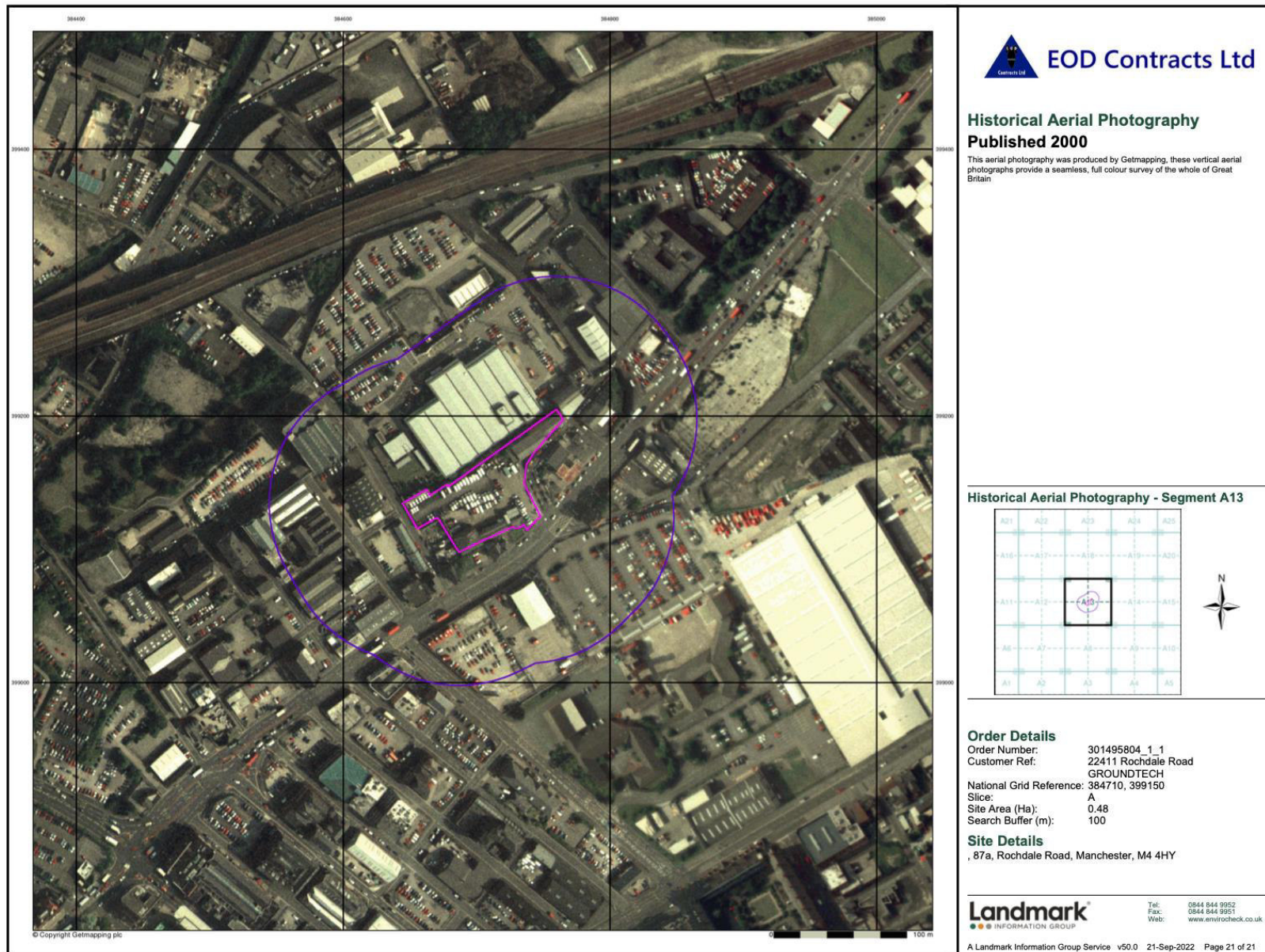
Site Details

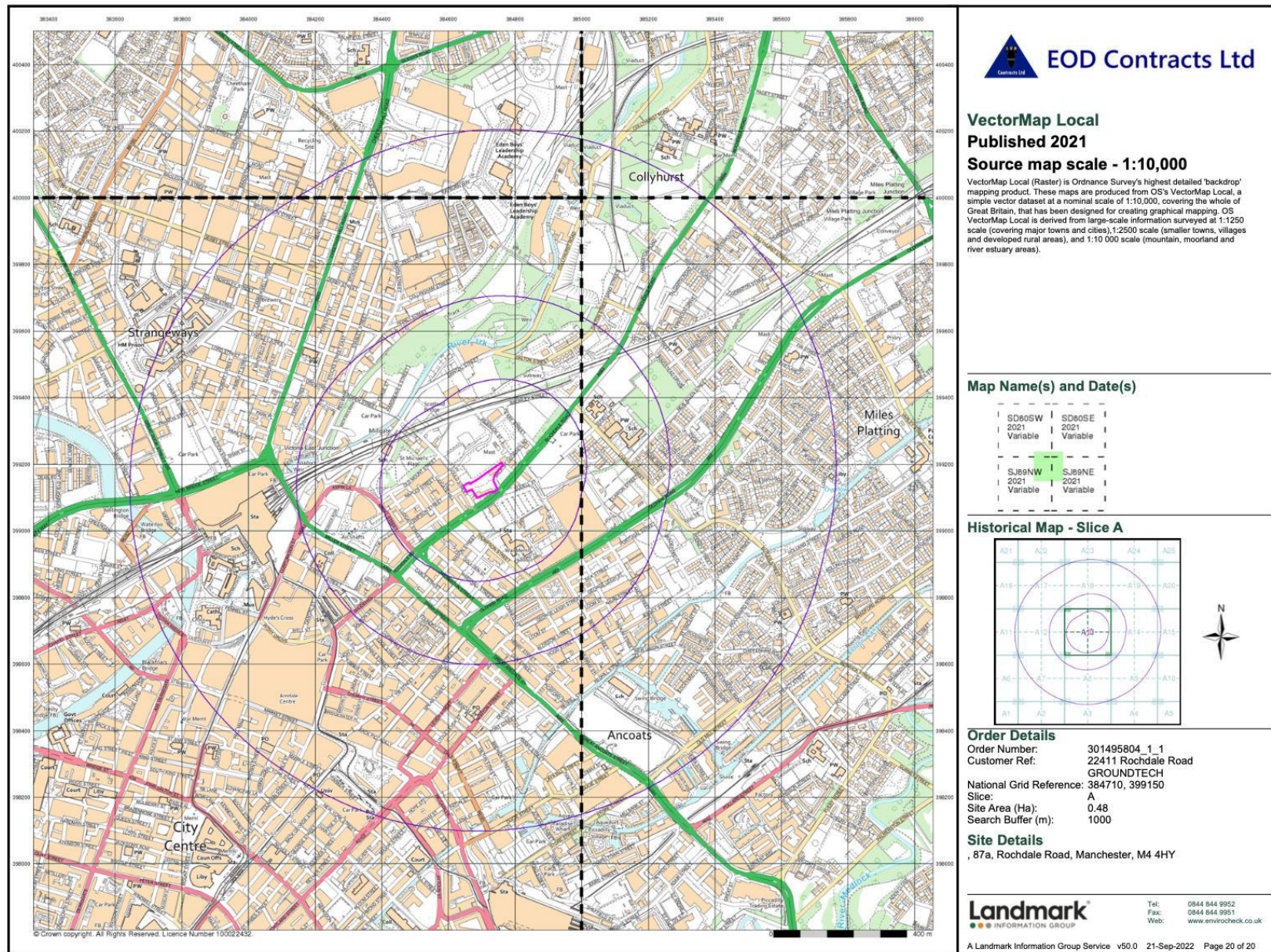
, 87a, Rochdale Road, Manchester, M4 4HY



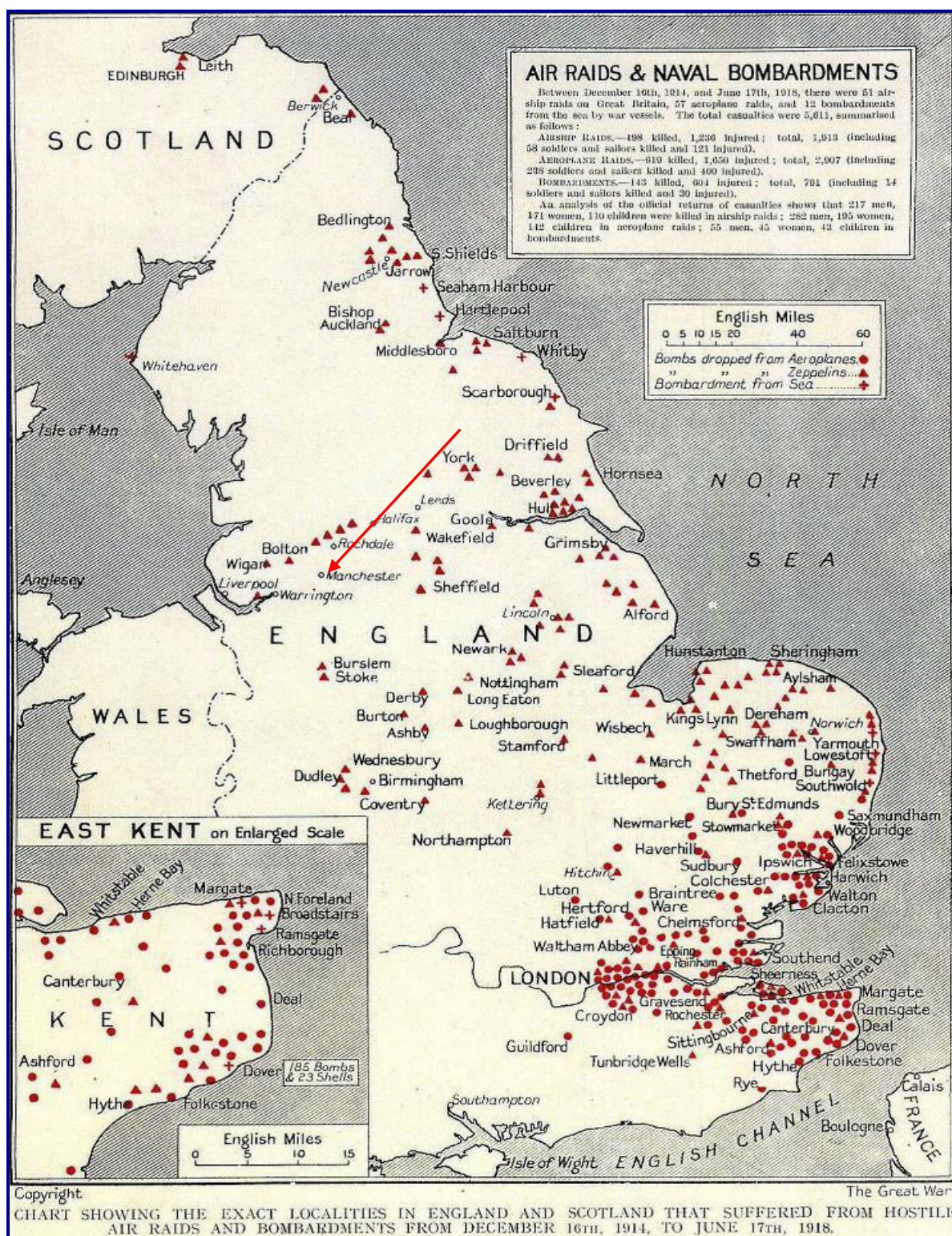
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envisirock.co.uk

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BOMB RAIDS WWI



BOMB IMPACT MAPS

PHOTO D-1: Extracted from the Manchester City Council Bomb Damage archives, the Site, bounded in red does not indicate any damage.

