

Stage 1 Preliminary Explosive Ordnance Risk Assessment

Project: Albany Road, Chorlton

Client: Patrick Parsons

Doc Ref: PRA.10096.23

Issue Date: 16th February 2023

Conclusion(s)		
SI works	There is a potentially elevated likelihood of EO (explosive ordnance) encounter during the proposed SI works.	
Development works	There is a potentially elevated likelihood of EO encounter during the proposed development works.	
Recommendation(s)		
SI works	Stage 2 Detailed Risk Assessment to elucidate the potential risk.	To receive a Stage 2 DRA quotation: info@impartialassessments.com +44 (0) 207 126 8164
Development works	Stage 2 Detailed Risk Assessment to elucidate the potential risk.	



British National Grid Ref:

SJ 81777 94272

Site Address:

Albany Road
Chorlton
Greater Manchester
M21 0AZ

Note, the Albany Road, Chorlton site will subsequently be referred to as the 'Site'.

Introduction	
Introduction	A preliminary risk assessment (PRA) is the first stage of the UXO (unexploded ordnance) / EO (explosive ordnance) risk management process. It is a qualitative screening exercise to assess the likelihood of encountering EO during ground works at a given site. The assessment considers the basic factors that affect the likelihood of buried EO being present at a given site today and the likelihood it will be encountered during the proposed works.
Assessment methodology	This desktop risk assessment has been researched and written by a dedicated EO risk analyst and is produced in accordance with CIRIA C681 (2009) and C785 (2019) guidelines on UXO risk assessment. As such, the assessment considers the following five factors: ▶ Site location and Site history / occupancy ▶ Wartime UXO: German bombing, German shelling, and British and Allied anti-aircraft weaponry fire ▶ Domestic military activity: British and Allied armed forces activity during wartime and peacetime ▶ Mitigating Factors ▶ Extent of the proposed ground works Note, the likelihood of EO initiation / detonation and consequence(s) of EO initiation / detonation are assessed at Stage 2, not Stage 1. The numerical preliminary risk rating calculation included within this PRA is a unique Impartial Assessments Ltd (IAL) methodology that makes for a transparent and accountable risk assessment process.
Information sources	This assessment draws on preliminary research utilising information sources immediately available to IAL at the time of writing. The availability of historical information will differ depending on the Site's location. As an absolute minimum, all IAL Stage 1 PRAs involve analysis of recent aerial photography, historic OS mapping, original WW2 bombing density records and our PIEO (potential indicators of explosive ordnance) GIS map. The PIEO map plots our vast database of locations and incidents of interest.
Stage 1 objective	The main objective of a Stage 1 PRA is to confirm whether or not further research is required to verify the EO risk. If a low risk cannot be confirmed at Stage 1, a Stage 2 Detailed Risk Assessment (DRA) will be recommended.

The Site and Proposed Works		
Current Site occupancy		Single post-WW2 constructed commercial building and associated carpark.
WW1-era / WW2-era Site occupancy (OS maps review)		Pre-WW1: Farmland then open ground crossed by a rail track. No obvious military activity. During WW1: Unchanged. During WW2: Commercial use. Some small buildings, a larger building, unbuilt ground and a railway cutting.
Risk mitigating factors	Shallow ground disturbance?	All very shallow ground on Site has been disturbed since WW2. Construction of low-rise buildings, buried services and laying of hardstanding. Undisturbed WW2-era soil / made ground could remain under the car park at shallow depth.
	Deep ground disturbance?	Most of the Site area (at least) will not have experienced disturbance of deep level geology (>3.0m bgl).
	Military EO clearance activity	Highly unlikely on Site.

Proposed works	Development works comprise the demolition of the existing building and construction of residential apartment buildings (up to three stories) with associated adopted estate roads, soft landscaping and utility infrastructure. At the time of writing, the foundation solution had not been designed. Various shallow mechanical excavations will be required and the potential for piling works cannot be ruled out. Prior to development an SI will be conducted, comprising 6No. WS boreholes to approximately 5.00m bgl.
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Enemy Action during WW1		
UXO source	Relevance	Details
German aerial bombing	Irrelevant	n/a
German naval shelling	Irrelevant	n/a

Enemy Action during WW2	
German aerial bombing	
Indicator	Assessment
Bombing density	Wider Area: Manchester County Borough sustained 27No. 'iron' bombs / 1,000 acres, a low-to-moderate bombing density. Note, this is the official government bomb census figure. 'Iron' bomb refers to large (>40kg) thick-steel-cased bombs (most of which were high explosive filled). The bomb census did not report the numbers of small (1kg / 2kg) incendiary bombs (IBs), millions of which were dropped on the UK. Locally: Despite major-scale air raids, the overall bombing density figure for Manchester is not high because the Luftwaffe's primary target area incorporated parts of Manchester County Borough, Salford County Borough and Stretford Municipal Borough. Consequently, with regards to reported bombing statistics, the total weight of Luftwaffe ordnance dropped locally was divided between these three administrative areas. Furthermore, Manchester County Borough was a very large administrative area, stretching many kilometres from the primary target area. Chorlton almost certainly experienced a higher bombing density than 27No. 'iron' bombs / 1,000 acres.
Confirmed Luftwaffe bombing targets	Original Luftwaffe target records identify Chorlton cum Hardy Railway Station and Corporation Yard (abutting the east Site boundary).
Potential secondary / opportunistic targets	None within 1km of the Site.
British bombing decoys sites	None installed locally. The closest decoy was approximately 6.9km southwest of the Site.
Evidence of bomb damage	Potential evidence identified. A building on Site may have been in a state of ruin by the mid-1940s and a pre-war building 70m west of the Site was demolished by 1950.
Evidence of bombing incidents	Some original bombing incident records were unavailable within the time frame of this report and analysis of all original bombing incident records is beyond the scope of this report. A bomb strike has been identified 50m away. Note, detailed research could identify closer incidents.

German land-based (French coast) artillery shelling

Is the Site located within an area subjected to shelling?

No.

Domestic Military Activity

Source of EO	Relevance	Details
WW1 anti-aircraft (AA) artillery fire	Unlikely	5No. static AA gun batteries were active within firing range of the Site. However, the lack of air raids in the region suggests little or no ammunition was expended.
WW2 anti-aircraft artillery fire	Potentially	▶ 33No. heavy AA gun batteries were active within firing range of the Site. ▶ Multiple temporary light AA gun deployments occurred within firing range of the Site. ▶ 6No. U.P rocket projector (ZAA) batteries was active within firing range of the Site. Luftwaffe activity in the region was frequent and intense. These AA weapons would have expended a vast quantity of ammunition.
Military bases / installations	Irrelevant	n/a
Military training areas / weapons ranges	Irrelevant	n/a
Munitions or explosives factories	Irrelevant	n/a
Munitions storage depots	Irrelevant	n/a
Defence fortifications / other measures	Unlikely	Manchester was fortified in anticipation of a German invasion from 1940. Initial research has not highlighted any defence measures on or near the Site. The Site's wartime occupancy and position indicates a low likelihood that it was part of a defended locality. Note, although unlikely, detailed research could conceivably identify defence measure(s) in the immediate vicinity.
WW2 minefields	Irrelevant	n/a
Wartime requisition	Irrelevant	n/a
WW2 Home Guard activity	Unlikely	Soldiers of one of several general purpose HG battalions or an L.M.&.S battalion would have been responsible for the defence of the study area. The Site could conceivably have been accessed by armed HG troops on patrol, on sentry duty, or during large-scale invasion defence training exercises. However, this is considered unlikely.

Key Findings

German UXO:	Is the study area known to have experienced or probably did experience an elevated WW1 and / or WW2 bombing density?	Yes
	Did the Luftwaffe earmark any targets within 1km of the Site for attack?	Yes
	Would the study area have been vulnerable to small-scale random / indiscriminate bombing? i.e. due to proximity of heavily bombed urban area or an individual / isolated primary target.	n/a
	Evidence of an officially abandoned unexploded bomb (UXB) within the wider study area?	No
	Has preliminary research identified evidence of bombing within 500m of the Site, direct evidence (recorded bomb strike) or indirect evidence (structural damage or bomb crater)?	Yes
	Did (or could) the Site boundary have encompassed risk elevating ground cover during WW1 and / or WW2?	Yes
	Could part(s) of the Site have been neglected / inaccessible during WW1 and / or WW2?	Possibly
Additional observations / considerations.		None
British / Allied EO:	Was AA weapon ammunition expenditure significantly elevated within firing range of the Site during WW1 and / or WW2?	Yes
	Could an unexploded AA projectile strike have gone undetected / unreported on Site, due to risk elevating wartime occupancy / ground conditions?	Possibly
	Has evidence of wartime or peacetime military activity affecting the Site been identified?	No
	Does the Site's location / position / occupancy raise the possibility of temporary wartime military activity affecting the Site? e.g. invasion defences activity or military requisition.	Probably not
	Could HG soldiers have accessed / utilised the Site during WW2?	Yes
Additional observations / considerations.		None
Likelihood of EO remaining and EO encounter:	Does undisturbed WW2-era soil (that could be EO contaminated) remain at shallow depths (<1.5m bgl) on Site today?	Possibly
	Does undisturbed WW2-era geology (that could be German UXB contaminated) remain at deeper depths (>2.0m bgl) on Site today?	Yes
	Will the proposed ground works intrude the zone of potential EO contamination?	Yes
	Are 'blind' intrusions (piling works and / or boreholes) planned?	Yes
	Additional observations / considerations.	The SI will disturb a small quantity of soil / geology compared to the development works.

Preliminary (Indicative) Risk Calculation

The preliminary risk rating calculation involves three elements:

- ▶ The likelihood of EO contamination (Site location and history)
- ▶ The likelihood of EO remaining on Site today (the extent of any risk mitigating factors)
- ▶ The likelihood of EO encounter during the proposed works (the degree of proposed soil disturbance)

Each factor is numerically rated (**1 to 5**). For 'likelihood of EO contamination' and 'likelihood of EO encounter', **one** is the lowest likelihood. For 'likelihood of EO remaining', **five** is the lowest degree of risk mitigative activities.

When added together, a final score of **eight or more** triggers the recommendation of a Stage 2 DRA.

Proposed Works	Contamination	Risk Mitigation	Proposed Soil Disturbance	Risk Rating Calculation	
	1 = lowest 5 = highest	1 = highest 5 = lowest	1 = lowest 5 = highest		
SI works	4	3	2	4+3+2=	9
Development Works	4	3	3	4+3+3=	10

Further research is required to locate all local bomb strikes, assess the orientation of local bomb-sticks (aircraft bombloads) in relation to the Site, clarify the Site's wartime occupancy / ground conditions and any bomb damage sustained.

A Stage 2 Detailed EO Risk Assessment is recommended prior to SI and development works commencing.

IAL has exercised all reasonable care, skill and due diligence in preparing this risk assessment. However, a low-risk conclusion at Stage 1 does not mean 'no risk'. For example, it is impossible to identify locations where members of the public have previously buried unwanted (often inherited) EO on private land (such as residential back gardens). Such EO contamination is not uncommon.

IAL cannot be held responsible for any inaccuracies or omissions within any records / information relied upon to conduct this risk assessment.

IAL is not liable for any relevant records / information that has become available subsequent to this risk assessment's issue date.

IAL cannot accept liability for subsequent changes to Site conditions that could affect the risk level.

At the time of writing, the relevant UK construction industry guidelines on explosive ordnance risk assessment (CIRIA) were adhered to. Subsequent revisions to these guidelines or new guidelines / legislation may render part(s) of this report obsolete. Reliance on the findings of this report must therefore be limited accordingly. Such reliance must be based on the whole report and not on extracts which may lead to incomplete or incorrect conclusions when taken out of context.



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