1ST LINE DEFENCE
UXO Assessed, Mitigated, Managed

Unexploded Ordnance (UXO) – Detailed Risk Assessment

What is an Unexploded Ordnance (UXO) risk assessment and why do I need one?

It's an assessment of potential UXO risk to a site project and should be the first step in any UXO Risk Management Plan.

It is normally recommended that in the first instance, a site should be screened by undertaking a **Preliminary UXO Risk Assessment** – which uses standard factors to determine whether further research is required, or whether any potential risk from UXO can be negated at that stage.

If the risk cannot be discounted, the next stage would be to commission a Detailed UXO Risk Assessment.

The purpose of a detailed assessment is to examine, using both internal and external resources, the likelihood of encountering explosive ordnance during works at a site, the associated risk and if necessary – make recommendations for appropriate risk mitigation measures.

We have a reputation for producing the most comprehensive Detailed UXO Risk Assessments in the industry. Fully compliant with CIRIA C681 (Unexploded Ordnance, A Guide for the Construction Industry), the reports allow the potential risk on any site to be fully qualified.

Comprehensive research for UXO risk mitigation

Our research team produce entirely bespoke documents, utilising all of the pertinent historical information and resources available.

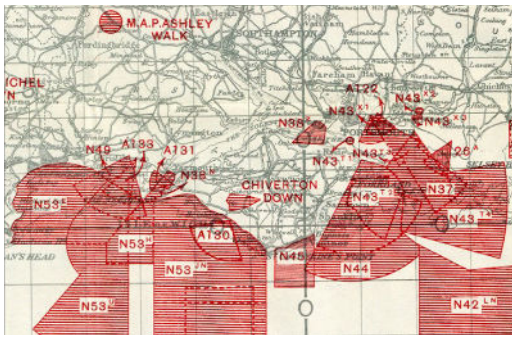
We use information from local and national archives, historical mapping, high resolution WWII-era aerial photography, written ARP bomb incident reports, Luftwaffe target information, bomb census mapping and any other resources that are relevant for the site being assessed..

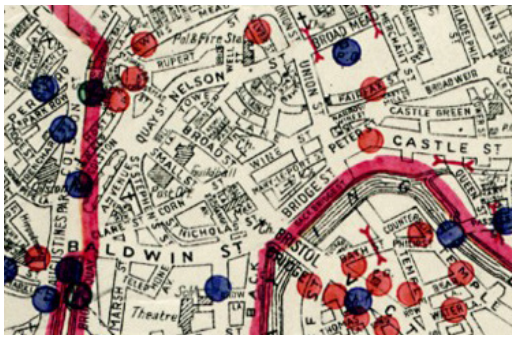
All of the data we collect for a UXO Risk Assessment – mapping, photography, written records, bomb maps etc. – is included within the reports and is analysed in great detail.

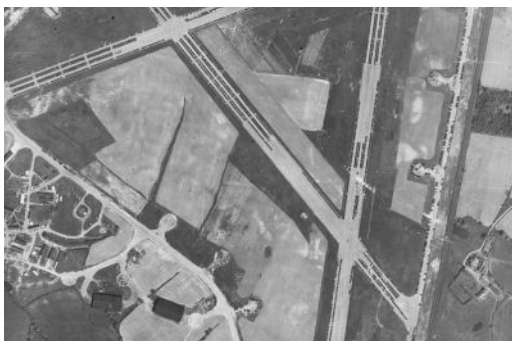
We make sure that our findings and conclusions are clear and concise, so that a client can fully understand and appreciate the reasoning and rationale behind the risk level and final assessment.

Every report goes through a rigorous quality assurance procedure to make sure that the research is comprehensive, consistent and the evaluations are well-defined and justified.

Timescales for production can vary depending on the complexity of the site and current workload, but are generally around 7-12 days. If you need something sooner please speak to us and we'll try our best to help you.







Five-step approach for a UXO Risk Assessment

1. The risk that the site was contaminated with UXO

The risk that a site could have become contaminated with UXO takes up the bulk of our historical research. This is effectively assessing the likelihood that an item of UXO could have fallen within an area and gone unnoticed and unrecorded, or have been lost, burnt, buried or otherwise discarded by military personnel. No UXO assessment can rely on a single source of information.

Just because a bomb fell on a site does not necessarily mean that there is a UXO risk. The site needs to be thoroughly examined in its historical context – what was it used for during the war, how frequently would it have been accessed, was it damaged, what was the nature of the groundcover, would it have been subject to post-raid checks. For bombing risk, we break this section into five subsections – see example on the right.

2. The risk that UXO remains

This is another key consideration, and concentrates on factors such as postwar development, and whether any UXO clearance operations have already been undertaken. While the risk of contamination on a site during WWII might have been high, the entire area may have been excavated post-war, thus removing the risk. Conversely, if a site has not been touched since the war, the risk of UXO remaining will not have been reduced.

3. The risk of encounter

It may be considered that a site could have become contaminated, and that any UXO is likely to remain. However, the risk that it would be encountered would depend largely on what was being planned on-site. For example, bulk excavation over the entire site area would mean an item of unexploded ordnance remaining is more likely be encountered.

4. The risk of initiation

Even if an item of unexploded ordnance is encountered, it does not necessarily mean it will detonate. This will depend on factors such as the energy with which it is struck. We also have to factor in what works are being planned, for example 'percussive piling' may pose a greater risk than careful 'hand-digging'.

5. Consequences of initiation or encounter

The consequences of initiation on any site could potentially be severe. However, another consideration is the consequence of simply encountering UXO. This can result in significant downtime, which for larger sites can mean very significant costs. Even a suspected item of unexploded ordnance can result in site closure for a significant period of time.

Risk of Contamination

Bomb Density – was the area bombed, were there targets in the area, did the site sustain bomb strikes, what was the density of bombing etc. It is important to consider the bombing density for assessing the possibility that UXBs remain in an area. High bombing density could allow for errors in record keeping due to extreme damage caused to the area.

Ground Cover – the nature of the groundcover present on a site during WWII can have an influence on the likelihood that UXO may have gone unnoticed – for example an open area of scrubby marshland compared to a well maintained cricket pitch.

Frequency of Access – how often would the area have been accessed, is it likely to have been specifically checked post-raid.

Damage – is there evidence of significant damage on a site, was rubble and debris present into which UXO could have fallen unnoticed, were any buildings cleared, is there evidence of craters and ground disturbance.

Bomb Failure Rate – were many UXBs recorded in the area, was the failure rate in the area higher than average.

UXO Considerations

- Site Location and Scope of Proposed Works
- Ground Conditions
- RAF / USAAF Bases
- Home Guard Activities
- Land Service / Small Arms Ammunition Contamination
- German Air-Delivered Ordnance
- Allied Air-Delivered Ordnance
- Aircraft Activity and Crashes
- Explosive ordnance manufacturing, storage and disposal
- Usage of decoy sites
- Training and staging areas
- Defensive Positions
- Firing Ranges and Training Areas
- Army Camps
- Anti-aircraft Batteries
- Prisoner of War Camps
- Press articles of UXO Finds
- 33 Engineer Regiment (EOD) Clearance Tasks

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