

Unexploded Ordnance (UXO)



Unexploded ordnances (UXOs) are a legacy of military activity, with thousands of explosive devices dropped on the UK during the First and Second World Wars. Whilst many areas were affected, those that suffered some of the heaviest bombing include city centres, industrial sites, ports and / or locations known, or suspected to be used or occupied by the Ministry of Defence.

Why do UXOs pose a threat?

It's thought that a significant proportion of devices (around 10% in the case of World War II) have failed to explode. They're therefore likely to remain hidden below ground, posing a potential risk in the event of reactivation. They can be triggered by impact, vibration and / or heat for example, with UXOs becoming increasingly volatile and unstable with age.

Whilst the explosive threat from a UXO is primarily a health and public safety issue, it's also important to recognise the potential for damage to nearby property and infrastructure, and the consequences for the wider environment. In addition, where a construction environment is involved, it's important to consider any associated impacts including evacuation, road closures, project delays, and reputational damage.

The wide range of activities undertaken in construction, some of which will involve excavation, plant, vehicle and machinery operations, vibration and / or the application of heat, means there's a real risk that UXOs could be triggered, particularly when:

- the potential risks aren't fully understood; and
- suitable and sufficient control and mitigation measures are not implemented.

Responsibilities regarding UXOs

Everyone involved in construction projects has a responsibility for assessing and managing the risks associated with UXO. More specifically, the roles and responsibilities of clients, principal designers, designers, principal contractors, contractors and workers are outlined in The Construction (Design and Management) Regulations 2015. Clients are responsible for providing pre-construction information to every designer and contractor bidding for the work or already appointed to the project, including information on existing structures and hazards that may be present. Where a client does not have the required in-depth knowledge (anticipated to be the case where UXO is concerned) they should also seek competent advice from suitably qualified, competent and appropriately vetted specialists.

Key actions to manage the Unexploded Ordnance (UXO) risk

1. Consider if there's any potential for the area / location where work is to be undertaken to have previously been exposed to bombing. If you suspect the presence of a UXO, a staged approach (see below) should be adopted with specific reference to Construction Industry Research and Information Association (CIRIA) guidance, 'Unexploded ordnance (UXO) A guide for the construction industry (C681)' and in conjunction with an appropriately vetted competent UXO risk mitigation specialist / organisation.

Approach stages:

- Systematic preliminary risk assessment
- Detailed risk assessment
- Risk mitigation design; and
- Emergency response plan.

It's critical to use an appropriately vetted specialist organisation at each stage to ensure that a suitable and sufficient assessment is completed and appropriate mitigation measures are identified and implemented.

The chosen specialist organisation should have access to extensive data including historical archives, library resources, maps and unique UXO databases, in addition to specific expertise and capabilities to undertake intrusive surveys where required. The organisation should also be in a position to assist with the development of a UXO Emergency Response Plan and provide additional training (e.g. safety and awareness and emergency actions training) for those with on-site responsibilities and site operatives. The UXO Emergency Response Plan below is not an exhaustive list but should include:

- roles and responsibilities
- arrangements for consultation and communication - on-site, emergency services, highways authorities and, where appropriate, occupants of proximate property, the media etc.
- site evacuation arrangements
- safety cordon and exclusion zones
- arrangements to confirm the status of a UXO - **this must always involve a UXO specialist**. On some sites there may be a need for permanent retained specialist site presence, where a risk assessment has identified this requirement.

Work must not start on a site where a UXO hazard has been identified until an emergency response plan is in place.

2. If investigations identify a UXO, then a specialist organisation should undertake explosive ordnance disposal (EOD) prior to the commencement of any works. It's also important to obtain an appropriate completion report and clearance certification, with the report including specific detail about any remaining residual risk and relevant mitigation measures.

3. If investigations identify a UXO, then a specialist organisation should undertake explosive ordnance disposal (EOD) prior to the commencement of any works. It's also important to obtain an appropriate completion report and clearance certification, with the report including specific detail about any remaining residual risk and relevant mitigation measures.