



Case Study Bury St Edmunds, Suffolk



Challenge

In May 2016, 1st Line Defence were contacted regarding a project near Bury St Edmunds in Suffolk, as there was a concern that previous military use of the site could have led to UXO contamination being present.

The project was for the construction of holiday rental lodges and the client's brief was to carry out a series of ground investigations across the site to determine whether any UXO risk was present, and if any UXO items were discovered – to manage the land remediation procedure in line with [CIRIA C681](#) guidance.

Process

Stage 1 – Risk Mitigation Strategy

Although a [UXO Risk Assessment](#) had not previously been carried out by the client, our in-house Research team quickly identified that the land had been requisitioned by the military during WWII. We found references indicating that training may have taken place within the site boundary – or very close by – and the site was assessed to be at a 'Medium-Risk' of UXO contamination being present.

Due to the site being located on undeveloped 'Greenfield' land, we advised that a [Non-intrusive UXO Survey](#) of the site area should be undertaken prior to starting any ground investigation works – and to investigate any ferrous anomalies to reduce the UXO risk to as low as reasonably practicable (ALARP).

We worked closely with the client and the site supervisor to make sure that any disturbances or risks were fully assessed, so that the survey and target investigation operations could be carried out on time and in budget.



This diagram shows the 1st Line Defence survey boxes overlaid with the location of some of the UXO finds which were modelled and later physically investigated.

Case Study Overview

Location

Bury St Edmunds, Suffolk

Industry

Construction

Project Duration

May – August 2016

Services

[Non-intrusive UXO Survey](#)

[UXO Support](#)

[UXO Watching Brief](#)

Target Investigation

10+

Items of UXO discovered

Types of UXO Found

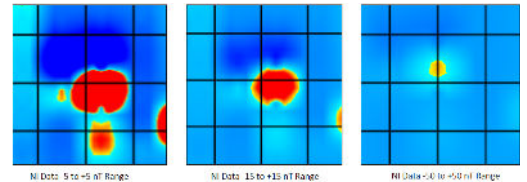
Grenades, Mortars & Projectiles

Process (cont.)

Stage 2 – Non Intrusive UXO Survey

Once the Non-intrusive UXO Survey was completed the data was processed and interpreted by our in-house Geophysical team, and numerous discreet buried ferrous anomalies were identified for further investigation by the Target Investigation team.

In some areas of the site the ground was too contaminated with general background ferrous material / scrap to allow for the data to be effectively interpreted / modelled. Within these areas, we recommended that UXO Watching Brief support was put in place for all planned open excavations.



Example of Non-intrusive UXO Survey data modelling on the Bury St Edmunds site. During post-survey geophysical processing, this anomaly was modelled with a volume of 0.07 litres at a depth of 0.25m, and was selected for further investigation.

Stage 3 – UXO Support

During the Target Investigation operation numerous items of UXO and UXO-related scrap were recovered, including 'live' and 'inert' Grenades, Mortars and Projectiles.

Summary of UXO-related items recovered by the Target Investigation team:

- .50 Cal Casing
- 303 Casing
- 2 Inch Smoke Mortar (Live)
- 4 x 2 Inch Mortar Spigot
- 2 x 3pdr HE Projectile
- No 36 (Mills) Grenade (Live)
- Trip Flare

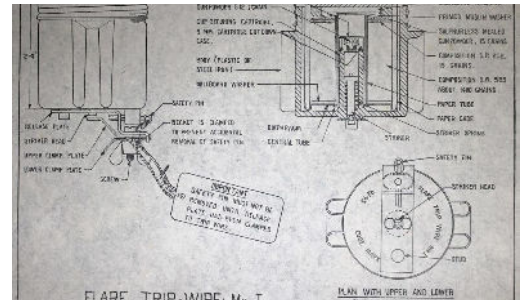
A total of 11 UXO items were recovered, all of the 'live' items were destroyed on-site by local EOD teams and the remaining 'inert' items were safely disposed of by 1st Line Defence.

Outcome

Following approximately four-months of ground investigation and remediation works, the risk from UXO had been reduced to ALARP status – and the client completed the project without unearthing any additional UXO discoveries.



Image showing a 3pdr high explosive (HE) projectile which was found at a depth of 0.3m, as indicated by the computer modelling.



Schematic drawing of a Trip-wire Flare, Mk 1.



Trip-wire Flare, Mk 1. This item was modelled at a depth of 0.5m, with a 0.3l volume. It was found during Target Investigation to be at just over 0.3m.