



# Preliminary UXO Risk Assessment

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| <b>Client</b>           | Soils Limited                       |
| <b>Project</b>          | Worcester Close, Gravesend          |
| <b>Site Address</b>     | Worcester Close, Gravesend DA13 9LB |
| <b>Report Reference</b> | PA16287-00                          |
| <b>Date</b>             | 11/08/22                            |
| <b>Originator</b>       | HJ                                  |

## Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the Worcester Close, Gravesend site. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

## Background

This assessment uses the sources of information available in-house to 1<sup>st</sup> Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1<sup>st</sup> Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1<sup>st</sup> Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.





### Risk Assessment Considerations

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| <p>Site location and description/current use</p>                                              | <p>The site is located in Gravesend within the diocese of Rochester, Kent.</p> <p>According to recent aerial photography, the site is currently occupied by undeveloped land covered in vegetation.</p> <p>To the north of the site is hardstanding ground, currently in use as a car park for the Downs Way Medical Practice. The east of the site is bordered by Worcester Close. To the south and west of the site is bordered by some residential structures, hard standing ground and undeveloped land, presumed to be in use as the residential structures gardens and driveways.</p> <p>The site is approximately centred on the OS grid reference: <b>TQ 63644 70237</b>.</p>                                                                                                                                                                                                                                       |
| <p>Are there any indicators of current/historical military activity on/close to the site?</p> | <p>In-house records do not indicate that the site footprint has had any current or former military use. No features such as WWII defensive positions, encampments or firing ranges are recorded at the location of the site. Additionally, no information of ordnance being stored, produced or disposed of within the proposed site boundary could be found.</p> <p>Northumberland Bottom camp and anti-aircraft battery were located approximately 600m north of the site. It was built in 1938 with four 3.7 inch guns mounted on octagonal emplacements, with two additional guns added in 1940. Two magazines and a radar installation for gun direction were also present at the site of this camp/HAA battery. It was decommissioned for active service in 1945 but held in reserve until 1956, later being cleared for the construction of the Channel Tunnel in 2000. Given the evidence of ordnance storage and usage within the bounds of the camp, it would be prudent to investigate further.</p> |
| <p>What was the pre- and post-WWII history of the site?</p>                                   | <p>Pre-WWII OS mapping dated 1931 shows the site was occupied by an orchard which appears to have been part of <i>Istead Nurseries</i>, and bound by the same on all sides except the east, which was bound by undeveloped open land, with three small structures in close proximity to the site.</p> <p>Post-WWII OS mapping dated 1961 shows no obvious indicators of change on site. One of the three small structures to the east of the site has been cleared, however.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>Was the area subject to bombing during WWII?</p>                                           | <p>The site was located within the Urban District of Northfleet, which sustained an overall high density of bombing, according to official Home Office bombing statistics, with 103.2 items recorded per 1,000 acres. A total of 364 HE bombs, three parachute mines, seven oil bombs, nine fire pots, five V1- flying bombs and one V-2 long-range rockets were recorded, totalling 389 incidents.</p> <p>Available daily bomb mapping for the county of Kent plots one H.E bomb strike on site, with additional H.E, incendiary, and parachute mine incidents in the wider area. Given the small scale of this mapping it is not possible to identify the exact locations of these bomb strikes, therefore it would be necessary to obtain any available written records to confirm the extent to which the site was affected by these incidents.</p>                                                                                                                                                        |





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| Is there any evidence of bomb damage on/close to the site?     | <p>It has not been possible to fully discern the presence of bomb damage indicators on-site. Although the missing structure to the east of the site in post-war mapping could be an indication of bomb damage.</p> <p>The acquisition of high-resolution WWII-era aerial photography may be able to confirm the exact composition and condition of the site during the war, as well as establish whether any signs of bomb damage or UXO, such as ground disturbances and cratering, were present within the site boundary.</p> |
| To what degree would the site have been subject to access?     | Given the site was occupied by an orchard during WWII, associated with <i>Istead Nurseries</i> , it is anticipated access would have been on a seasonal basis, therefore would have undergone periods of frequent and less frequent access.                                                                                                                                                                                                                                                                                     |
| To what degree has the site been developed post-WWII?          | There does not appear to have been any development on site post-WWII, however there has been significant redevelopment to the areas surrounding the site.                                                                                                                                                                                                                                                                                                                                                                       |
| What is the nature and extent of the intrusive works proposed? | According to information provided by the client, the scope of works proposed includes four Window Sample boreholes and three Dynamic Cone Penetrations.                                                                                                                                                                                                                                                                                                                                                                         |

### Summary and Conclusions

The site was situated in the Urban District of Northfleet during WWII, which was subject to a high bombing density of 103.2 items recorded per 1,000 acres, according to official Home Office bombing statistics.

Kent Daily Bomb Maps suggest that the site was subject to an H.E bomb strike, with the wider site area subject to further bombing incidents throughout the war. Due to the small scale of this mapping, it has not been possible to ascertain the exact locations of bombing incidents. In addition, it is unknown at this stage whether the site was damaged during the war.

### Recommendations

Following the findings of this preliminary report, **further research** is recommended in the form of a **Detailed UXO Risk Assessment** in accordance with CIRIA guidelines. This is recommended in order to better assess the wartime conditions within and around the proposed area of works. Further research would involve the acquisition of any available written local bombing records, WWII-era aerial photography and other archival material.

**Prior to or in lieu of a Detailed Assessment, it is recommended that appropriate UXO Risk Mitigation Measures are provided for intrusive works proposed.**

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1<sup>st</sup> Line Defence.

