



Detailed Unexploded Ordnance (UXO) Risk Assessment

Project Name	2 Hyde Park Place, London
Client	GEA Ltd
Site Address	2 Hyde Park Place, St. George's Fields, London, W2 2LH
Report Reference	DA11941-00
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Originator	HW



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Executive Summary

Site Location and Description

The site is situated in St. George's Fields, Westminster.
 Recent aerial imagery dated 2019 shows the site is bordered to the north by structures built along Stanhope Place and bounded to the east by an end-of-terrace property built at the junction of Hyde Park Place and Stanhope Place. The Hyde Park Place roadway represents the southern perimeter and another multi-storey terraced property forms the western boundary.
 Recent aerial imagery dated 2019 shows the site is occupied by a Georgian style, multi-storey terraced structure and associated rear garden.
 The site is approximately centred on the OS grid reference: TQ 2756380957.

Proposed Works

Information provided by the client indicates that the scope of proposed works involves borehole work to a maximum depth of 10m.

Geology and Bomb Penetration Depth

The British Geological Survey (BGS) map shows the bedrock geology to be formed by the London Clay Formation – clay, silt, and sand of the Palaeogene Period. No superficial deposits were recorded in this source.¹
 Site specific geotechnical information was not available to 1st Line Defence at the time of the production of this report. An assessment of maximum bomb penetration depth can be made once such data becomes available, or by a UXO specialist during on-site support.
 It should be noted that the maximum depth that a bomb could reach may vary across a site and will be largely dependent on the specific underlying geological strata and its density.

UXO Risk Assessment

1st Line Defence has assessed that there is an overall **Low-Medium Risk** from items of German aerial delivered UXO and an overall **Negligible Risk** from historic Allied UXO across the site. This assessment is based on the following factors:

- During WWII the site was located within the Metropolitan Borough of Paddington, which sustained an overall very-high density of bombing with an average of 255.7 incidents recorded per 1,000 acres according to official Home Office bombing statistics; a figure attributable to the districts close proximity to London city-centre and the abundance of targets in the local vicinity, notably London Paddington Railway Station, located approximately 900m north-west of the site.
- The site was, as is, occupied by 2 Hyde Park Place – a Georgian-era multi-storey, terraced property and associated rear garden.
- No HE bombs were recorded on-site according to London bomb census mapping. The same source however recorded three incidents just west of the site: one each in May 1941, March 1944, and June 1944. Paddington bomb census reports provided further information regarding the former with the strike having apparently been a 250kg HE that hit No. 4 Hyde Park Place on 10-11 May 1941. Regarding the incidents of March 1944 and June 1944, no further information was available.
- A V-1 flying bomb strike was recorded over both the site and the surrounding area according to both London bomb census mapping and LCC bomb damage mapping. London V-1 pilotless aircraft bomb census reports further clarified that this incident struck the pavement outside No. 7 Hyde Park Place (approximately 40m to the west) before penetrating the basements below. There is typically a negligible risk from unexploded V-weapons since they were so large, distinctive, and noisy that the likelihood of them not being observed and removed is considered minimal.
- 2 Hyde Park Place sustained blown-out windows and minor roofing damage according to post-war imagery dated 1945 and 1946. Otherwise, the building appeared to have avoided any serious impairment – an observation supported by Paddington Bomb Census Reports which specifically mentioned that only Nos. 4 and 5 had been affected by the incident of 10-11 May 1941.
- A large area of cleared ground over the area previously occupied by Nos. 4, 5, 6, and 7 Hyde Park Place was observable across both post-war images. The closest of these to the site was No.4 at an approximate distance of 8m. Normally this would have left the site within range of the J-curve effect whereby a UXB can end its trajectory at a lateral offset

¹ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

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UXO Risk Assessment

From point of entry. However, on this occasion, such a risk is lessened by presence of basements underneath the Hyde Park Place terraces. As a result, had a UXB penetrated the ground and began to J-curve towards the site, it is considered unlikely that it would have been able to progress beyond the basements in the adjacent properties.

- At the start of WWII the site was occupied by a Georgian-era multi-storey terraced property and given the lack of severe damage observable on post-war imagery, the site appeared to have retained this developed composition throughout the bombing campaign. Non-compromised on-site structures typically increased the likelihood of UXB evidence (such as bomb entry holes) being noted and reported during periods of occupation at these locations, as entry holes and unaccounted damage would be easily visible.
- It is considered viable that the site remained occupied and accessed until at least 1944. It is considered likely that the damage observable in post-war imagery was caused by the V-1 flying bomb strike of 18 June 1944 although had the site been evacuated after this incident the structure would have only been uninhabited for the latter stages of the war (late 1944 and 1945) by which point, the period of conventional bombing involving high explosive ordnance had largely ended. As a result, it is considered that the site was occupied during the period of most concern (1940, 1941, and early 1944) and inhabited properties were typically associated with a frequent level of access by assigned ARP wardens, property owners, and local residents.
- In summary, the risk of UXO contamination at this site is not considered to be significant. It is not thought likely that a UXB would easily have fallen unnoticed and unrecorded within the site boundary as the buildings on and adjacent to the site appear to have survived the war largely undamaged. It is conceivable that an unexploded bomb could have fallen in the debris and rubble to the west of the site – but the likelihood of a UXB ending its trajectory underneath the site foundations is not considered high due to the presence of the adjacent surviving property and basements. Because of the close proximity to three bomb incidents and ruined buildings however, the risk is considered to be slightly elevated above background levels, but not high enough to warrant proactive on-site UXO Support.

Risk From Historic Allied Ordnance

- There is no evidence that the site formerly had any military occupation or usage that could have led to contamination with items of Allied ordnance, such as LSA and SAA. The conditions in which HAA or LAA projectiles may have fallen unnoticed within the site boundary are however analogous to those regarding aerial delivered ordnance.

Post-War Redevelopment

- The site has undergone little redevelopment since WWII.
- The risk of UXO remaining is considered to be mitigated at the location of and down to the depth of any post-war redevelopment on site.
- Within the footprints of post-WWII redevelopments, the risk from shallow-buried UXO (especially 1kg German incendiaries and British AA projectiles) should have been encountered/removed during initial excavations. However, the risk from deep-buried German UXBs will only have been mitigated within the volumes of any post-war pile foundations or deep excavations for basement levels. The risk will remain within virgin geology below and amongst these post-war works, down to the maximum bomb penetration depth.

Recommended Risk Mitigation Measures

The following risk mitigation measures are recommended to support the proposed works at the 2 Hyde Park Place, London site:

All Works

- UXO Risk Management Plan
- Site Specific UXO Awareness Briefings to all personnel conducting intrusive works.

Glossary

Abbreviation	Definition
AA	Anti-Aircraft
AFS	Auxiliary Fire Service
AP	Anti-Personnel
ARP	Air Raid Precautions
DA	Delay-action
EOC	Explosive Ordnance Clearance
EOD	Explosive Ordnance Disposal
FP	Fire Pot
GM	G Mine (Parachute mine)
HAA	Heavy Anti-Aircraft
HE	High Explosive
IB	Incendiary Bomb
JSEODOC	Joint Services Explosive Ordnance Disposal Operation Centre
LAA	Light Anti-Aircraft
LCC	London County Council
LRBB	Long Range Rocket Bomb (V-2)
LSA	Land Service Ammunition
NFF	National Filling Factory
OB	Oil Bomb
PAC	Pilotless Aircraft (V-1)
PB	Phosphorous Bomb
PM	Parachute Mine
POW	Prisoner Of War
RAF	Royal Air Force
RCAF	Royal Canadian Air Force
RFC	Royal Flying Corps
RNAS	Royal Naval Air Service
ROF	Royal Ordnance Factory
SA	Small Arms
SAA	Small Arms Ammunition
SD2	Anti-personnel "Butterfly Bomb"
SIP	Self-Igniting Phosphorous
UJC	Unclassified bomb
UP	Unrotated Projectile (rocket)
USAAF	United States Army Air Force
UX	Unexploded
UXAA	Unexploded Anti-Aircraft
UXB	Unexploded Bomb
UXO	Unexploded Ordnance
V-1	Flying Bomb (Doodlebug)
V-2	Long Range Rocket
WAAF	Women's Auxiliary Air Force
X	Exploded