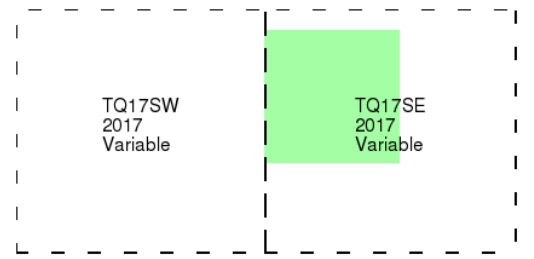


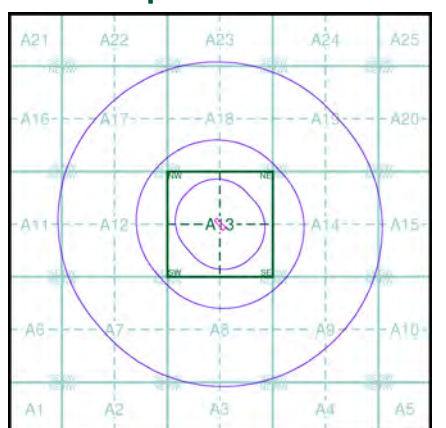
**VectorMap Local**  
**Published 2017**  
**Source map scale - 1:10,000**

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

**Map Name(s) and Date(s)**



**Historical Map - Slice A**



**Order Details**

Order Number: 134500386\_1\_1  
 Customer Ref: J17205  
 National Grid Reference: 516310, 173220  
 Slice: A  
 Site Area (Ha): 0.2  
 Search Buffer (m): 1000

**Site Details**

1c, King Street, TWICKENHAM, TW1 3SD



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk

CHAS. E. GOAD, LTD.  
CIVIL ENGINEERS

# EXPLANATION OF SIGNS USED ON INSURANCE PLANS OF TOWNS & CITIES

55 CROUCH HILL  
LONDON N. 4

## ABBREVIATIONS

ASB.	ASBESTOS
CORR.	CORRUGATED IRON
D.I.D.	DOUBLE IRON DOORS
DRA.	DRAPERY
D.	DWELLING
ELECT.	ELECTRICIAN
(E.M.)	ELECTRIC MOTORS
(ENG.)	STEAM ENGINE
FURNE.	FURNITURE
GAR.	GARAGE
(G.E.)	GAS ENGINE
H.W.	HARDWARE
I.COLS.	IRON COLUMNS OR STEEL STANCHIONS
JWLY.	JEWELLERY
M.CL.	METAL CLAD
M.W.	MANCHESTER WAREHOUSE
M.L.	MATCH (OR WOOD) LINED
OIL.	OIL & COLOR
(O.E.)	OIL ENGINE
P.H.	PUBLIC HOUSE
S.	SHOP
S.I.D.	SINGLE IRON DOORS
S.I.S.	SINGLE IRON SHUTTERS
TAI.	TAILORS
TENS.	TENEMENTS
W.G.	WIRED GLASS
W.N.	WIRE NETTING OVER GLASS

## COLORS

	BRICK, STONE OR CONCRETE
	WOOD
	AREAS CLEARED DUE TO ENEMY ACTION
	SKYLIGHTS ON 1 & 2 STORY BUILDINGS
	SKYLIGHTS ON HIGHER BUILDINGS
	METAL BUILDINGS
	TIMBER PILED OR STACKED

## WALLS

	PARTY WALL 2 STORIES OR OVER, A PROBABLE FIRE CUT OFF
	ENTIRE WALL, BUT DOUBTFUL AS FIRE CUT OFF
	DEFECTIVE WALL - IMPERFECT
	WALL ABOVE, IRON COLS. UNDER
	WALL SOME FLOORS ONLY (OR WOOD OR PLASTER PARTITION)
	ABOVE ROOF 6' TO 1'-6"
	— D <sup>9</sup> — 1'-6" TO 2'-6"
	MATCH OR WOOD LINED
	WOOD CLAD WITH CORRUGATED IRON

## OPENINGS

	PASSAGE UNDER	UNPROTECTED
	ON ALL FLOORS	
	SOME FLOORS ONLY	SINGLE IRON DOORS
	ALL FLOORS (PROTECTED)	
	ALL FLOORS (SOME PROTECTED)	DOUBLE IRON DOORS
	SOME FLOORS ONLY (PROTECTED)	
	ALL FLOORS (SOME PROTECTED)	UNPROTECTED
	ALL FLOORS (PROTECTED)	
	SOME FLOORS ONLY (PROTECTED)	UNPROTECTED
	WOOD LOADING DOOR	
	IRON LOADING DOOR	

## WINDOWS

	ON ALL OR MOST FLOORS	UNPROTECTED
	MORE THAN USUAL	
	OVERLOOKING	UNPROTECTED
	NEARLY ALL GLASS	
	OPENINGS THRO' & WINDOWS OVER	UNPROTECTED
	ON SOME FLOORS ONLY	
	PROTECTED BY WIRED GLASS	UNPROTECTED
	PROTECTED BY SINGLE IRON SHUTTERS	
	PROTECTED BY DOUBLE IRON SHUTTERS	
	WINDOWS IN FRONT & REAR OF BUILDINGS UNDERSTOOD	UNPROTECTED
	UNLESS OTHERWISE SHOWN	

## FLOORS

1, 2, 3, 3<sup>1</sup>/<sub>2</sub>, 3<sup>1</sup>/<sub>2</sub> ON BUILDINGS ARE NUMBER OF STORIES ABOVE GROUND  
(3<sup>1</sup>/<sub>2</sub> = 3 FLOORS & ATTIC)  
2 & 2B MEANS 2 STORIES & 2 BASEMENTS EAST & SUB-BASEMENT.

## SKYLIGHTS

A	LESS THAN 50 SQUARE FEET (SAY 10'x5' OR 7'x7')
B	OPENINGS THROUGH 2 FLOORS UNDER (EACH STROKE DENOTES AN OPENING.)
	WITH WELL HOLE THROUGH 3 FLOORS
	LANTERN LIGHT, SIDES ONLY GLASS.
	OR VENT OR RAISED VENTILATOR

OVER 50 SQ. FT. TO SCALE

## HOISTS & LIFTS

	OPEN
	OPEN TO STREET
	ENCLOSED BRICK ON FIRE RESISTING WIRED GLASS DOORS
	ENCLOSED WOOD OR PLASTER

IRON DOORS SHOWN AS EXPLAINED UNDER "OPENINGS"

## ROOFS

ASB.	ASBESTOS
C.	CONCRETE
CORR.	CORRUGATED IRON
?	METAL
P.	PATENT (FELT & C)
O.	SLATE
T.	TILE

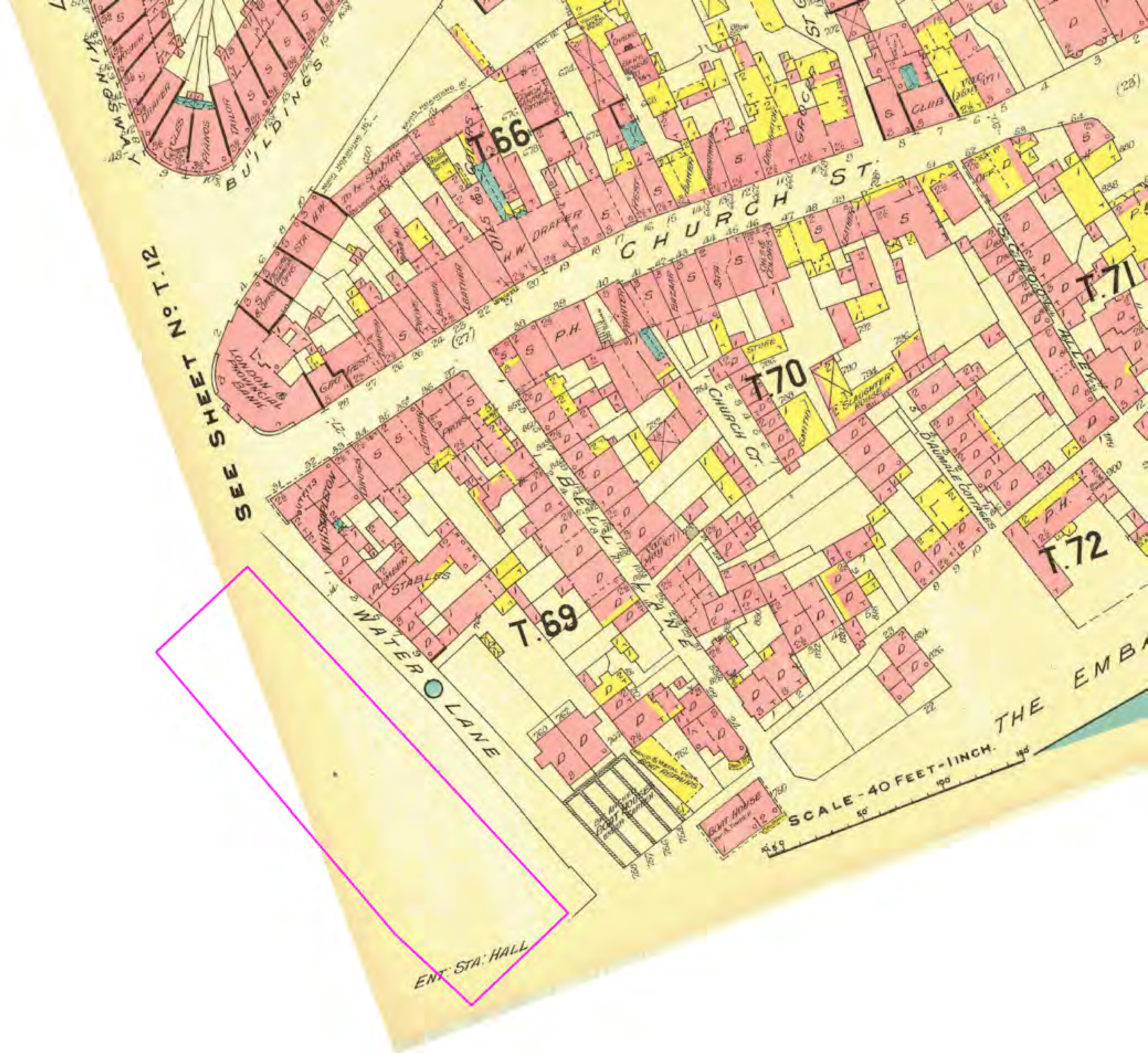


## SUNDRIES

	STEAM BOILERS
	BOILER SET IN BRICK
	FACTORY CHIMNEYS
	STEAM ENGINE
	OVERHANGING WOOD CORNICE
	FIRE ALARM BOX
	D <sup>9</sup> ON KEY PLAN
	HYDRANT
	HYDRAULIC HYDRANT
	PRIVATE HYDRANT OR STAND PIPE
	DOUBLE HYDRANT
	SALT WATER HYDRANT
	SPRINKLER OR AUTO ALARM BELL

## REFERENCE NUMBERS

	NUMBERS PARALLEL WITH STREET ARE EXISTING STREET NOS
	WHERE TWO SETS OF STREET NOS IN SAME BLOCK COINCIDE, ADDITIONAL ARBITRARY NOS ARE GIVEN TO ONE SET (500 & UPWARDS)
	WHERE BUILDINGS TO WHICH THEY APPLIED ARE DEMOLISHED, STREET & ARBITRARY N <sup>OS</sup> ARE SHOWN & CROSSED THROUGH ON REVISION
	— 48' — ARE STREET WIDTHS
	(37) ARE HEIGHTS OF GROUND ABOVE ORDNANCE DATUM
	HEIGHT IN FEET OF ADJOINING BUILDINGS WHERE STORIES DIFFER IN HEIGHT
	SIZES OF WATER MAINS SUPPLYING HYDRANTS



SEE SHEET N° T.12

SCALE - 40 FEET - 1 INCH.

ENT. STA. HALL



GEA

Published Date : 1907  
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## **Express Preliminary UXO Risk Assessment**

<b>Client</b>	GEA Ltd.
<b>Project</b>	Twickenham Riverside
<b>Site Address</b>	King St, Twickenham, London, TW1 3SD
<b>Report Reference</b>	EP5167-00
<b>Date</b>	04/08/17
<b>Originator</b>	PS

### **Assessment Objective**

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the Twickenham Riverside 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	
<p>Site location and description/current use</p>	<p>The site is located in the London Borough of Richmond.</p> <p>The site is surrounded in all directions by commercial properties. King Street is north of the site, Water Lane is east and The Embankment is south, with the River Thames beyond this. The site is occupied by commercial properties and a car parking area.</p> <p>The site is approximately centred on the OS grid reference: <b>TQ 1630173209</b></p> 
<p>Are there any indicators of current/historical military activity on/close to the site?</p>	<p>There is no evidence to indicate at this preliminary stage that any current or historical military use of the site. The closest heavy anti-aircraft battery was situated 4.2km east within Richmond Park.</p>
<p>What was the pre- and post-WWII history of the site?</p>	<p>Pre-war historic OS mapping shows a public house within the north of the site, buildings within the west and south of the site and open ground within the east of the site.</p> <p>Post-war mapping shows that the public house and some of the buildings within the west and the south of the site have survived, yet some buildings have been removed. The former Public House at the north of the site seems to have remained unchanged until 1972, when structures on site appear to be in their current layout.</p>
<p>Was the area subject to bombing during WWII?</p>	<p>The site was situated within the Municipal Borough of Twickenham during WWII, which according to Home Office statistics sustained an overall moderate bombing density of 82.8 items per 1,000 acres. This consisted of 505 HE (high explosive) bombs, 2 parachute mines, 25 oil bombs, 21 phosphorus bombs, 27 V-1 pilotless aircraft, and 1 V-2 long-range rocket.</p> <p>Bomb census mapping records a bombing incident approximately 50m north-west from the site, with an additional strike plotted with 60m east of the site. No incidents are recorded within the site boundary on the London bomb mapping aside from a V-1 strike, which is anticipated to have affected the site area.</p>
<p>Is there any evidence of bomb damage on/close to the site?</p>	<p>Historical OS mapping indicates changes on the site post-WWII. At this preliminary stage, it is not known if this change is related to bomb damage or to the recorded V-1 strike.</p>
<p>To what degree would the site have been subject to access?</p>	<p>If the site was occupied by undamaged buildings it is likely that they would have been accessed frequently. Any areas of the site that were undeveloped or were seriously damaged would have been accessed less frequently.</p>
<p>To what degree has the site been developed post-WWII?</p>	<p>Much of the northern and southernmost areas of the site were redeveloped post WWII by 1972. Risk of encountering items of UXO will be mitigated down to the depth of the excavations of these structures.</p>



<p>What is the nature and extent of the intrusive works proposed?</p>	<p>Proposed works on site are understood to comprise two boreholes to 25.0 m depth using a cable percussive rig and five shallow boreholes to 5.0 m depth using a terrier rig.</p>
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**Summary and Conclusions**

The site was situated within the Municipal Borough of Twickenham during WWII, which sustained a moderate density of bombing at 82.8 items per 1,000 acres. Though no bombs are recorded to have fallen directly within the site area, a V-1 fell immediately south of the site, on the 19<sup>th</sup> June 1944, which is thought to have directly affected the site area.

Signs of change can be seen within the site post-war, where some buildings have been removed. The removal of buildings post-war can be a sign of bomb damage but may also be accounted for by this V-1 incident. It is therefore not known at this stage if this post-war change is indeed related to bomb damage and if so what exactly caused this damage. A portion of the site was occupied by undeveloped land, and it is not clear at this stage how well this area would have been accessed.

Further research in the form of the acquisition of relevant incident records and WWII-era aerial photography is therefore recommended in order to properly assess the risk from bombing and damage within the site. If it can be proved that the site was damaged by bombing before the V-1 strike, it is possible that the risk on site can be negated, as very few manned bombing raids were recorded during and subsequent to the V-weapon campaign.

**Recommendations**

Following the findings of this preliminary report, it is recommended that **further action** is taken in the form of a **Detailed UXO Risk Assessment**.

Further research would include visits to local and national archives, and the acquisition of local bombing records, aerial photography and other archival material. Following this, a more precise assessment on the risk presented from items of UXO can be made.

**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.



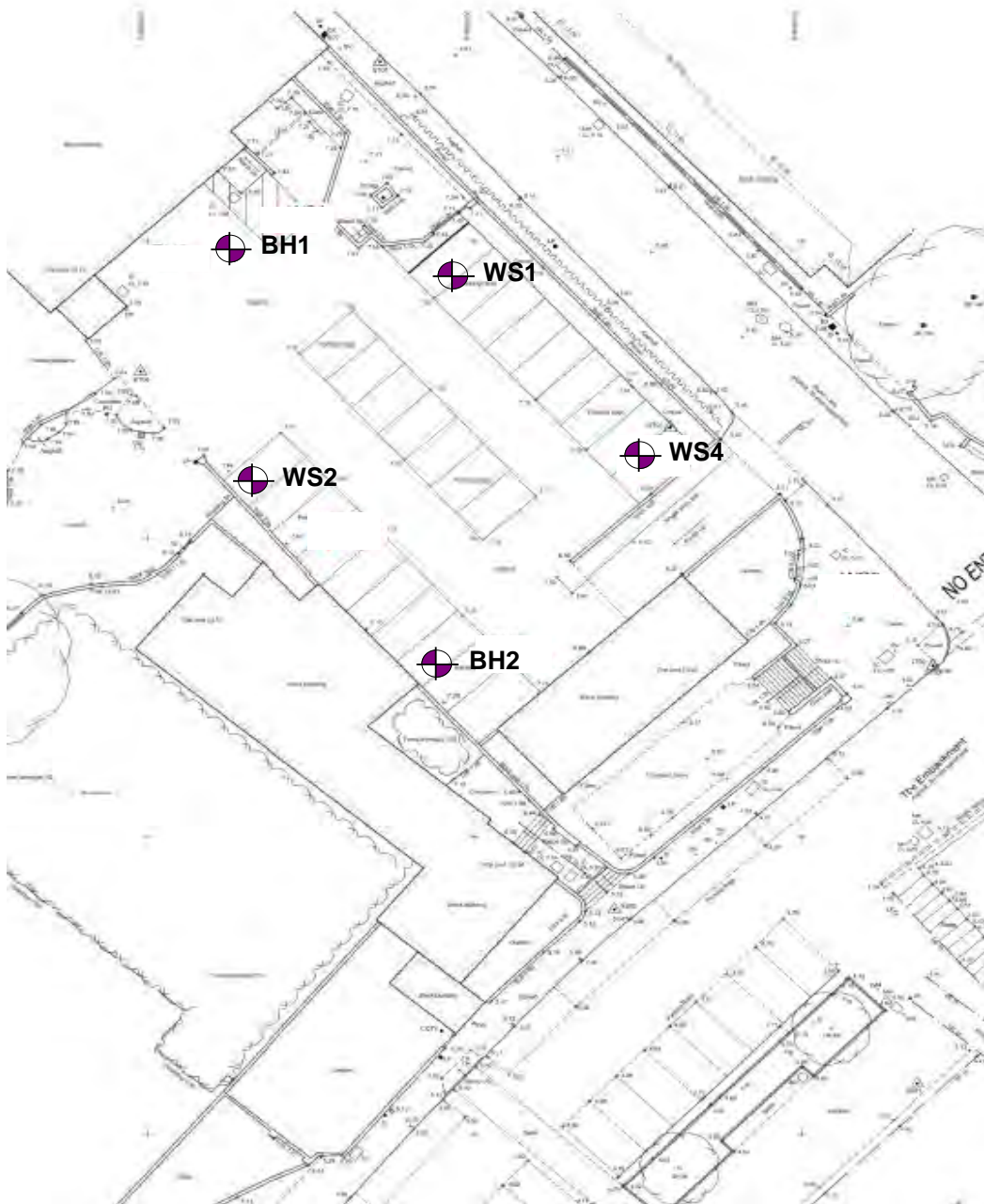
Site Twickenham Riverside, Twickenham, TW1 3SD

Client London Borough of Richmond

Engineer Price and Myers

Job Number  
J17205

Sheet  
1 / 1





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