

# **BATTLE OF BRITAIN BUNKER**

## **Wren Avenue, Uxbridge**

### **London UB10**

London Borough of Hillingdon

Archaeological watching brief

April 2024



**BATTLE OF BRITAIN BUNKER**  
**Wren Avenue**  
**Uxbridge**  
**UB10**

Site Code WRV23  
NGR 506573 183515  
OASIS reference molas1-523684

Planning reference 585/APP/2022/2663  
Condition number 4

Report on an archaeological watching brief

**Sign-off History:**

Issue No.	Date:	Prepared by:	Checked/ Approved by:	Reason for Issue:
1	26-04-24	Tony Mackinder (senior archaeologist)	Jim McKeon (project manager)	First issue
2	30-05-24	Tony Mackinder (senior archaeologist)	Jim McKeon (project manager)	Public outreach section added and planning information updated
3	24-07-24	Jim McKeon (project manager)	Jim McKeon (project manager)	Updated following GLAAS comments

Graphics:Jemima Dunnett

..

© MOLA  
Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED tel 0207 410 2200  
Unit 2, Chineham Point, Crockford Lane, Basingstoke, Hampshire, RG24 8NA, Tel: 01256 587320

email [business@mola.org.uk](mailto:business@mola.org.uk)

# Summary

*This report presents the results of an archaeological watching brief carried out by MOLA at Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10. The report was commissioned from MOLA by the client, the London Borough of Hillingdon*

*In accordance with the Written Scheme of Investigation (MOLA 2023 v3 14/07/23) a watching brief was carried out on the site between 30 August 2023 and 26 February 2024.*

*Remedial works associated with the Grade 1 Listed No 11 Group Operations Room (Battle of Britain Bunker) at former RAF Uxbridge were monitored. These included installation of new land drains, the repair of three concrete air vents, removal of undergrowth and trees and new landscaping to improve drainage.*

*Natural geology, where seen, was London Clay at c 40.0m OD.*

*A series of concrete and brick pads are probably evidence of the early 20th century military buildings built of wood and known to predate the building of the bunker. Aspects relating to the construction of the Operations Room in 1938 such as the two concrete burster layers were recorded when the air vents were exposed down to the top of the bunker roof which was 4.40m below ground level. A slightly later brick pillbox was recorded when it was unblocked and repaired. A small concrete slab built over the bunker, could be base of a storage tank.*

*Several trenches for new land drains were monitored but no archaeological features were found. The presence of several post-war rifle cartridges recovered from the topsoil shows the area was occasionally used for training exercises.*

*In collaboration with Historic England/GLAAS and the Battle of Britain Bunker Visitor Centre, a reconstruction drawing/artistic impression of the exterior of the bunker during the war years will be prepared by MOLA, based on the findings from the watching brief and historic maps, plans and images of the site. This will be supplemented by a blog and potentially a press release.*

# Contents

Summary	2
Contents	3
1 Introduction	4
2 Topographical and historical background	6
3 The watching brief	7
4 Results of the watching brief	8
5 Archaeological potential	21
6 Public Outreach	26
7 Publication and archiving	27
8 Acknowledgements	28
9 Bibliography	29
10 OASIS archaeological report form	34

## List of illustrations

Front cover. Air Ministry drawing 2041/26 of 1925 showing timber buildings existed on site before the bunker was constructed. (from Fig 6 MOLA 2022a)

<i>Fig 1 Site Location</i>	30
<i>Fig 2 Areas of watching brief</i>	31
<i>Fig 3 building foundations</i>	32
<i>Fig 4 sections of bunker construction</i>	33

# 1 Introduction

## 1.1 Site background

---

- 1.1.1 An archaeological watching brief was carried out by MOLA at Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10 ('the site') between 30 August 2023 and 26 February 2024 (see *Fig 1*). This document is the Report on that work.
- 1.1.2 The site comprises the Grade 1 Listed (1392556) No. 11 Group Operations Room (Battle of Britain Bunker) along with a number of statutorily and locally listed structures within the boundary of former RAF Uxbridge. The centre of the site lies at National Grid reference 506573 183515. The Group Operations Room, an underground structure that played a fundamentally important role in the air defence of Britain during the Second World War, was constructed from reinforced concrete and provided with entrances which are visible above ground level. The east entrance is located to the east of Wren Avenue. The structure is mainly located below ground level and has a flat roof covered with asphalt (MOLA 2022b *Fig 13*). The Bunker is accessed via stairs leading to the historic steel door (MOLA 2022b *Figs 14 and 15*).
- 1.1.3 The scheme comprises works for the refurbishment and water management of the existing structures, with a special regard to the Grade 1 listed 11 Group Operations Room (LEN 1392556). The scheme includes:
- Improvement of the existing surface water drainage system in order to direct the uphill Birch Crescent Estate flood water away from the bunker.
  - Install land drains around the entrance and exit buildings, airshafts and across the site to intercept water before reaching vulnerable locations.
  - Repair the leaking air shafts X1, X2 and Y2.
  - Undertake local asphalt repairs to the entrance, exit and air shafts.
  - Adjust the ground surface falls to encourage water away from current ingress locations.
  - Removal of undergrowth and trees directly over bunker to prevent future tree root damage.
- 1.1.4 A desk top Archaeological Assessment (HEA) was previously prepared which covers the whole area of the site (MOLA 2022a). This document should be referred to for information on the natural geology, archaeological and historical background of the site (and the initial assessment of its archaeological potential).
- 1.1.5 Further to the condition on Planning Consent a Written Scheme of Investigation was prepared by MOLA (MOLA 2023b). All archaeological work has been carried out in accordance with that WSI.

## 1.2 Planning background

---

- 1.2.1 The legislative and planning framework in which the watching brief took place was fully set out in the *Desk based assessment* (Section 9, MOLA 2022a).
- 1.2.2 The watching brief, this report, and the subsequent delivery of public outreach activities (reconstruction drawing, blog & possible press release) were/will be undertaken to fulfil Condition 4 (A, B & C) attached to the Planning Consent given by the Local Authority (Consent reference 585/APP/2022/2663) below:
- The demolition or development shall be carried out in accordance with the submitted WRITTEN SCHEME OF INVESTIGATION FOR AN ARCHAEOLOGICAL WATCHING BRIEF - Version 3 - 14<sup>th</sup> July 2023 MOLA providing details of the construction*

*method to protect archaeological remains.*

*For land that is included within the submitted written scheme of investigation (WSI), no demolition or development shall take place other than in accordance with the agreed WSI, which shall include the statement of significance and research objectives, and*

*A. The programme and methodology of site investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works*

*B. Where appropriate, details of a programme for delivering related positive public benefits*

*C. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged until these elements have been fulfilled in accordance with the programme set out in the WSI.*

### 1.3 Scope of the watching brief

---

- 1.3.1 An archaeological watching brief is normally a limited fieldwork exercise. It is not the same as full excavation, though individual features may be fully excavated.
- 1.3.2 The watching brief was carried out within the terms of the relevant Standard for watching brief specified by the Institute for Archaeologists (CIFA, 2014), superseded in December 2023 by the Chartered Institute for Archaeologists, Standards and Guidance for Archaeological monitoring and recording (CIFA, 2023a).
- 1.3.3 All work has been undertaken within the research priorities established in the Museum of London's A research framework for London Archaeology, 2002.
- 1.3.4 All work was undertaken within research aims and objectives established in the Written Scheme of Investigation for the watching brief (Section 2.2, MOLA 2023b)

## 2 Topographical and historical background

A detailed description of the geology, archaeology and history of the site was provided in the earlier Archaeological desk-based assessment (MOLA 2022a) and the Heritage Statement (MOLA 2022b).

### 2.1 Geology and topography

---

- 2.1.1 The British Geological Survey (BGS) shows RAF Uxbridge to overlie London Clay Formation of clay, sand and silt, dating to the Palaeogene Period, with alluvium deposits in the vicinity of the River Pinn c 30m west of the site.
- 2.1.2 The bunker is dug through these natural deposits that are at c 40.0m OD.

### 2.2 Archaeology

---

- 2.2.1 The conclusion of the Desk based assessment (section 5.3, MOLA 2022a,) was the impact of the construction of the bunker (at c 8.5m below ground level) would have removed any pre-20th century archaeological remains.
- 2.2.2 Its conclusion was, there is limited potential for the survival of the early 20th century military structures that predate the construction of the Group Operation Room in 1938 which is referred to in this report as the bunker. Being built of timber with possible concrete foundations these buildings would have been ephemeral.
- 2.2.3 It seems likely the only archaeology encountered would be that associated with the bunker and its later usage.

## 3 The watching brief

### 3.1 Field methodology

---

- 3.1.1 To access the top of the bunker a shaft was excavated by machine around each of the three air vents (X1, X2 and Y2) and shored. Repairs were then carried out to the concrete. Elsewhere trenches for the new land drains were dug by machine.
- 3.1.2 Archaeological excavation of features was carried out in accordance with the *Written Scheme of Investigation* (MOLA 2022b).
- 3.1.3 Although some features were individually surveyed on site by a MOLA surveyor using GPS most work was plotted on plans provided by the client and subsequently tied to the OS grid.
- 3.1.4 Where referenced in this report (eg '13.45m OD'), levels relate to OS Ordnance Datum and were either calculated by GPS survey or taken from an existing site survey.

### 3.2 Recording methodology

---

- 3.2.1 A written and drawn record of all archaeological deposits encountered was carried out in accordance with the *Written Scheme of Investigation* (MOLA 2023b).

### 3.3 Site archive

---

Number of trench record sheets	10
Number of overall location plans	1
Number of Context (SU) sheets	14
Number of photographs	146
Number of Plan sheets	2
Number of Sections	1



## 4 Results of the watching brief

For area and/or feature locations see Fig. 2. Section drawings of the vent shafts are shown in Fig. 4.

### 4.1 Natural and topography

- 4.1.1 The natural geology, where it was seen, was a clay that varied from yellow to a grey colour which is the top of the London Clay and was at c 40.0m OD. This sloped down towards the River Pinn to the west. Most of the site was disturbed by the construction of the bunker in 1938, since then the ground surface has been landscaped and affected by further developments such as the access road and the installation of the plinths for the replica Hurricane and Spitfire.

### 4.2 The No. 11 Group Operations Room bunker

- 4.2.1 The Operations Room bunker was constructed from late 1938 and completed in August 1939 and was built underground to be bombproof. This also had two plant rooms each with two above ground vents, one for air intake and one for exhaust gases.
- 4.2.2 As part of the remedial works to prevent water ingress, three of these vents (Y2, X1 and X2) were exposed down to the top of the engine room part of the bunker. The fourth vent, Y1, was not affected by the current work. The shored shafts around the vents allowed the construction of the bunker to be investigated. The stratigraphy was very similar, with two concrete burster slabs above the roof bunker plant rooms.

VENT Y2	Thickness	Levels
TOPSOIL	0.15m	38.76m OD
CLAY	0.50m	
UPPER CONCRETE BURSTER SLAB	1.0m	
BROWN CLAY	1.40m	
LOWER CONCRETE BURSTER SLAB	0.60m	
GRAVELLY CLAY	1.05m	
TOP OF BUNKER		33.96m OD (4.80m below ground level)

VENT X1	Thickness	Levels
'MADE GROUND'	0.70m	42.97m OD
UPPPER CONCRETE BURSTER SLAB	0.70m	
BROWN CLAY and GRAVEL	1.90m	
LOWER CONCRETE BURSTER SLAB	0.75m	
GRAVELS	0.65m	

TOP OF BUNKER		38.27m OD (4.70m below ground level)
---------------	--	--

VENT X2	Thickness	Levels
TOPSOIL	0.50m	43.26m OD
UPPER CONCRETE BURSTER SLAB	0.90m	
BROWN CLAY and GRAVEL	2.30m	
LOWER CONCRETE BURSTER SLAB	0.50m	
BROWN CLAY	0.90m	
TOP OF BUNKER		38.16m OD (5.10m below ground level)

4.2.3 Interestingly, there is a difference of almost 2.0m between the level on the top of the Y plant room and the X plant room. This may be caused by the slope of the original land.



Image 1 the upper concrete burster slab being exposed near Vent X1 (looking NE)





*Image 2 mid-excavation section of Vent X2, showing upper concrete burster slab and clay layer below*



*Image 3 mid-excavation view of Vent Y2, showing upper concrete burster slab and clay layer below*





*Image 4 the top of the bunker plant room and Vent X2*

### 4.3 The pillbox

- 4.3.1 This type of pillbox was only built after May 1940 when a series of drawings were issued by the War Office department FW (Fortifications and Works) when the threat of invasion became a distinct possibility following the fall of France and the Low Countries (Lowery 2014 19). Its full designation would be FW 3 Type 24. These were hexagonal with one side longer than the others and are usually built of concrete but in this case, it has brick walls 0.54m thick with only the base and roof of concrete. The gun slots are also constructed of concrete and have in two cases have a metal bar with a small circular plate presumably to mount a weapon on. This type of pillbox was designed for 8 men with 5 light machine guns and 2 rifles.
- 4.3.2 This pillbox was later modified with extra protection added to the outside faces that comprised brick 'spurs' supporting a concrete roof and giving it an odd star shape (Image 5). Many pillboxes were reinforced in early 1941 but this was usually with extra concrete on their roofs and thickened walls, here the modifications seem slightly odd.
- 4.3.3 When initially recorded early in 2023 there were still traces of barbed wire and supporting stakes around this pillbox (Image 7). These were removed to allow access to the area around the nearby Vent Y2. The pillbox had been bricked up but has now been opened up, the vegetation cleared from its roof and some of the external brickwork repaired.
- 4.3.4 This was one of three pillboxes that were known to be positioned around the bunker for defensive purposes. It is assumed the other two pillboxes, now demolished, were also Type 24. A post-war map shows at least one more also had the additional 'spurs' and three pillboxes were still on the 1977 OS map.





*Image 5 the pillbox showing the brick 'spurs'(looking N)*



*Image 6 the pillbox entrance with CND graffiti (looking NW)*





*Image 7 one of the iron pickets used to hold barbed wire near the pillbox (looking SE)*

## 4.4 Graffiti

---

- 4.4.1 There is a faded Campaign for Nuclear Disarmament (CND) symbol painted on a sheet of metal covering one of the gun ports of the pillbox (Image 6). It is unknown



when this was painted, but the amount fading suggests it has been there for decades. This symbol is often referred to as a peace symbol and was probably painted after RAF Uxbridge closed in the 1990's.

## 4.5 The embanked features

---

- 4.5.1 There are two small circular or semi-circular earth embanked features that must have been weapons positions added presumably to increase the defences around the bunker (Image 8). However, when they were constructed is unknown. A quick personal investigation of the one near vent X1 confirmed the banks were heavily eroded and there was c 0.40m of erosion deposits over the base. These features were not affected by the current works.



*Image 8 the embanked feature near to Vent X1 (looking N)*

## 4.6 The air raid shelter

---

- 4.6.1 The nearby air raid shelter is currently blocked up and originally was to be opened and recorded but has not been affected by the current works.

## 4.7 A concrete slab

---

- 4.7.1 There was an isolated concrete slab at ground level that was located above the bunker (Image 9). This was 3.20m (N-S) x 2.30m (E-W) x 0.15m thick and laid flat with the top at 43.26m OD. A service duct covered by concrete slabs ends at this feature. This slab is clearly not part of the bunker but built over it as there was a layer of soil between it and the first concrete burster slab. This looks like it was the



base for a small storage tank or building requiring an electric connection to either lights or a pump. This slab was removed as it was affected by the current works and will be reinstated.



*Image 9 the concrete slab near to Vent X2 (looking NW)*

## 4.8 Brick and concrete foundations

---

- 4.8.1 In one area a series of 10 brick and concrete foundation pads and 2 concrete pillars were recorded below disturbed topsoil, just south of the bunker mound (Image 10). These were laid flat (at heights varying from 41.32 to 41.56m OD) and appeared to form regular groups suggesting they are foundation pads to support buildings. These pads, located just beyond the outer edge of the bunker, are probably evidence of the wooden buildings that were known to cover this whole area of the site, but were removed when the bunker was constructed in 1938. These buildings were constructed after 1917 when Uxbridge was the Royal Flying Corps Central School of Aerial Gunnery and could be seen on Air Ministry drawings of 1918 and 1925). Between these dates the layout changed slightly but the pads probably relate to the two east-west aligned buildings see on the 1925 drawing (see front cover and Fig 6 MOLA 2022a).
- 4.8.2 There was also a separate area of bricks, [113], measuring 4.80m (E-W) x 1.20m (N-S) at 41.55m OD which must have had a different function to the smaller features nearby, possible being the base of a small building. However, its construction date is unknown so may not be related to the smaller concrete foundations.



- 4.8.3 None of these features have been observed in previous topographic surveys of the area showing they had been covered by the topsoil when the area was landscaped after the bunker was built.



*Image 10 some of the concrete foundations (looking W)*

## 4.9 Land drains

---

- 4.9.1 A narrow trench (0.50m wide and c 0.70m deep) dug for a new land drain was monitored running from the site, through Dowding Park to the River Pinn over a distance of 24.50m. No archaeological features were found, only topsoil was observed over the natural clay. No alluvium was observed associated with the river confirming its course has been modified at some time.
- 4.9.2 Several other new land drains were observed but no archaeological features were noted (Image 11). None reached natural as they were dug through either backfill associated with the bunker or in areas of existing landscaping (such as 'the pond') and only redeposited clay or topsoil was seen.
- 4.9.3 Several small drains around the entrance and exit to the bunker were renewed, and these were also through topsoil and recent deposits.





*Image 11 new drainage in the area of the pond (looking SW)*

## 4.10 Boundary markers

---

- 4.10.1 There were two inscribed concrete bollards, along with a third unmarked one, that had been moved and saved in the contractor's compound (Image 12). These date from before April 1964 as the letters A M refer to the Air Ministry, which disappeared when the Ministry of Defence was formed at that date. The numerals presumably reference numbers and are probably boundary markers showing the limits of Air Ministry land at RAF Uxbridge. The two different styles may suggest they were made at different times.
- 4.10.2 The contractors were not aware of exactly where they originated but they must have been found ex-situ within the works area. They do not appear on the topographic plan and were not noted during the initial site visit by MOLA on 07/02/23.





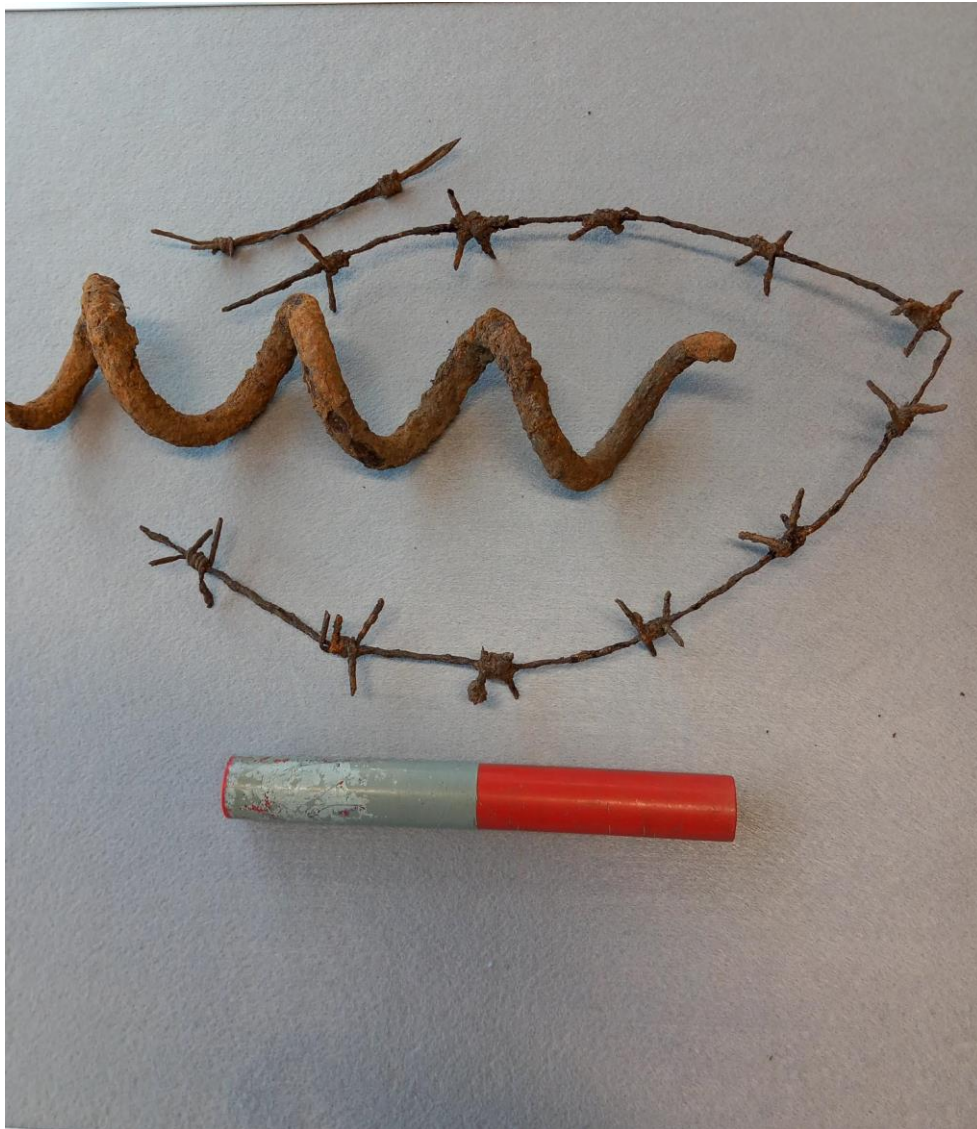
*Image 12 inscribed boundary markers on 09/10/24*



## 4.11 The finds

---

- 4.11.1 A small number of finds were recovered from unstratified topsoil or made ground above the bunker. Other than sections of barbed wire (Image 13), the iron pickets to hold it in place, and one cartridge case (Image 14), there was little amongst the metal scraps, tin cans and fragments of 20th century bricks that could confidently be attributed to the lifetime of the bunker. Nothing was retained for archiving but the finds were kept for the client (or for display in the visitor centre).



*Image 13 screw from an iron picket and barbed wire*

- 4.11.2 Four cartridge cases were recovered and identified by the author using Jane's Infantry weapons 1984.

Unstratified 'next to exit 31/01/24'  
R G 86 L13A1  
7.62mm NATO standard blank

(R G is Radway Green, Cheshire and L13A1 is presumably identifier for a blank round used for training)

Unstratified 'topsoil near Vent Y2 09/10/23'

R G 62 L2A2

7.62mm NATO standard ball

(R G is Radway Green, Cheshire and L2A2 identifies it as ball so just an ordinary bullet)

Context [102]

R G 78 L13A1

7.62mm NATO standard blank

(R G is Radway Green, Cheshire and L13A1 is presumably identifier for a blank round used for training)

Context [102]

R ^ L 1942 (identifier too worn)

0.303

(R L is Royal Laboratory, Woolwich)

- 4.11.3 The .303 cartridge case is dated 1942 so probably relates to the wartime usage of the area, maybe when the pillbox or the weapons positions were occupied. The other three cartridge cases are clearly post-war as they range in date of manufacture from 1962 to 1986 and two were blanks for training purposes. This indicates the area was occasionally used for training exercises.



Image 14 Cartridge cases, (L to R) 7.62mm blank, 7.62mm ball, .303, 7.62mm blank

## 5 Archaeological potential

### 5.1 Answering original research aims

- *What are the earliest deposits identified?*

The earliest evidence recovered are several concrete and brick pads for the timber buildings that probably date to the 1920's or 1930's and were cleared for the construction of the bunker in 1938.

- *What evidence is there for the site's use during the 18th and 19th century when it was part of the Hillingdon House Estate?*

There is no evidence of 18th and 19th century activity as the construction of the bunker has truncated any possible deposits of that age.

- *What evidence is there for the site's use post-1917 when the site was acquired by the War Office to establish the Royal Flying Corps Central School of Aerial Gunnery?*

There is some evidence of post-1917 activity, with concrete and brick pads for the timber buildings such as those seen on a 1925 plan (Fig 6, MOLA 2022) of the area before the bunker was built in 1938. It is possible other pads survive outside the edges of the construction area for the bunker.

- *What evidence is there for the construction, appearance, use and defence of Fighter Command's 11 Group operations bunker, with particular reference to structures and works on its upper surface?*

The excavation around the vents confirmed the construction for the bunker was as seen on various construction plans (see main report). At ground level there was a layer of earth covering a concrete burster slab, then a layer of earth, another concrete burster slab, then a final layer of earth above the actual concrete roof of the bunker (plant room). The pillbox, and the two small, embanked areas are later additions added to defend the bunker. Also, an air aid shelter was added during the war to provide shelter for personnel caught outdoors during an air raid.

- *What evidence is there for the post-1939 construction and use of the underground operations room?*

The Type 24 pillbox design was only approved for construction in May 1940, (Lowery 2014 19) so was clearly added after completion of the bunker in 1939. It is reasonable to assume the air raid shelter and the two small, embanked features also post-date the building of the bunker, however, their actual construction dates could not be established by this watching brief.

- *What evidence is there for surface defences such as gun positions and barbed wire entanglements or camouflage?*

There is a Type 24 pillbox built of brick and concrete which later had brick 'spurs' added to its outside creating a slightly odd appearance. There was still some evidence of the barbed wire and its supporting iron posts around it. There was no obvious attempt to



camouflage it with paint, though this is known from other RAF sites. The two small, embanked features are probably weapons pits, their small size suggests nothing heavier than a light machine gun such as a BREN or Lewis gun could be accommodated. Both weapons were dual purpose so could be used in the ground mode or with a dedicated mount in the anti-aircraft role. However, as the embanked features were not investigated and their possible construction date established, there is the possibility they are actually post-war additions. The presence of a post-war cartridge case shows the area was still used for training exercises.

- *What do the 'garden features' visible on post-war aerial photographs really represent?*

An aerial photo taken in 1945 shows the area over the bunker was laid out as a garden with bedded areas separated by several paths leading to a small square central feature such as a plinth. This must be an attempt at camouflage to disguise the top of the bunker. The garden was difficult to see by the time of an aerial photograph in 1953, and by 1961 there was no trace of it. In a previous report (MOLA, 2023a) it was suggested the central plinth was for a sundial or small statue. At the present time (2024), placed some distance from the bunker there is a granite monument with an inscription suggesting it had been originally located over the bunker (Image 15 & Image 16). This could possibly be the central feature of the garden with the inscription added at a later stage, but further research would be necessary to support this theory.

The watching brief did not produce any evidence of this garden.



Image 15 the current Operations Room monument (2024)



Image 16 detail of the text on the monument showing this may have been moved from another location

- Does evidence survive showing how the surface of the bunker looked during the war?

The pillbox and air raid shelter would have been on the surface of the bunker during the war, supported by the post-war aerial photographs showing there was a garden laid out, though its actual date of creation is currently unknown. There were also fragments of barbed wire identified during the watching brief, in addition to the iron, pigtail-shaped pickets that supported it. These would suggest that barbed wire was laid out in rolls, or to an entangled design, rather than as more formal security fences, presumably to prevent enemy assault troops rushing the gun positions during the war (akin to the no-mans land



defences of WWI). It should be considered, however, that the bunker appears to have been camouflaged during the war to avoid detection, so military/defensive features would have been visually minimal (particularly from the air).

- *Was there any surface vegetation, and if so, was it deliberately introduced (i.e. for camouflage) or natural?*

There was no surviving surface vegetation pertaining to the garden observed in the 1945 aerial photography. Soil samples were taken to help answer this question, but these came from the topsoil covering the bunker, which had been subject to several episodes of disturbance and landscaping since WWII (including earlier repair work to vent Y1 and when the plinths for the replica Spitfire and Hurricane were constructed). Also, the area was heavily disturbed by plant during the current repair works (predominantly undertaken during the autumn and winter months so ground conditions were soft and wet for much of the time). Consequently, it was considered by MOLA specialists that the samples would not yield reliable results. Clearly the aerial photos show there was a garden over the bunker, however, which would suggest that this was deliberately introduced to mask the military activities below.

- *Can it be established how the bunker's point defence was planned?*

The existing pillbox was sited to cover the lower ground to the west which appears to have been a golf course in the 1930's and remains so to this day. This would have been seen as an area where an airborne landing by the Germans could take place with paratroopers or glider borne troops. Also, the pillbox would be able to defend the nearby emergency access to the bunker. It should be noted this pillbox is the only survivor of three that were known to be positioned around the bunker, so the bunker was well protected against any ground assault. The two small, embanked features could be later additions to the defence plan being quicker to construct than another pillbox. However, it is not possible to confirm if these weapon pits are wartime additions. There is the possibility that they are post-war additions.

- *Are any artefacts dating to wartime use present?*

Some barbed wire and several metal posts (or pickets) to support it were recovered, as well as a single .303 cartridge case. These are probably evidence of wartime usage of the site.

- *What are the latest deposits identified?*

Among several modern tin cans there was a Pabst beer can. This was probably from the early 1980s and could show the presence of American personnel at Uxbridge, as this variety is only brewed in the United States so must have been specially imported.

The topsoil had some electric cable and several probable electrical fittings which may be post-war debris. Three 7.62mm NATO standard cartridge cases are definitely post-war and show the area was still being used for training exercises.

- *What is the extent of modern disturbance?*

There is some modern disturbance, such as landscaping, connected to the construction of the access road, the embanked drainage pond and for the plinths and lighting relating to the replica Hurricane and Spitfire.

## 5.2 Answering new research aims

---

- 5.2.1 No new research questions have been raised by this watching brief.

## 5.3 Significance of the data

---

- 5.3.1 The archaeological remains such as the pillbox and ai raid shelter are undoubtedly of local significance contributing to the history of the site. The bunker itself is of national importance due to its crucial role during the Battle of Britain period in 1940. Combined with the results from the DBA and survey, the results of the watching brief and the artistic impression of how the exterior of the bunker probably looked during WWII (forthcoming), have contributed to the historical understanding of a nationally important heritage asset

## 6 Public Outreach

### 6.1

---

- 6.1.1 Following communications with Historic England/GLAAS (Celia Knight & Sandy Kidd), the client (Hillingdon Council), and the Battle of Britain Bunker Visitor Centre, a programme for delivering related positive public benefits was agreed. Given that the history and interior of the bunker is well-served by the Visitor Centre, the MOLA graphics team will produce a reconstruction drawing/artistic impression of the exterior of the bunker during the war years, based on the findings from the watching brief and historic maps, plans and images of the site. This will be incorporated into a blog outlining the findings of the watching brief, produced by MOLA, which can be posted on the MOLA, Visitor Centre and other websites. This represents new information, further illuminating the story of the bunker.
- 6.1.2 A press release incorporating the above will also potentially be produced and managed by Historic England/GLAAS at a later date.

## 7 Publication and archiving

- 7.1.1 The results of the watching brief will be made publicly available by means of a database in digital form, to permit inclusion of the site data in any future academic research into the development of London.
- 7.1.2 The site archive containing original records will be stored in accordance with the terms of the *Written Scheme of Investigation* (MOLA 2023) with the Museum of London Archaeological Archive within 12 months of the end of the watching brief. Finds will be offered to the Battle of Britain Bunker Visitor Centre for display. Alternatively, any retained finds will also be stored with the Museum of London Archaeological Archive.
- 7.1.3 The results of the watching brief will appear in the annual round up of the *London Archaeologist* or equivalent local magazine. It is also proposed that, combined with the results from the DBA and survey, the results of the watching brief combined with the artistic impression of the bunker could be disseminated to a wider audience via an illustrated article in an appropriate popular publication, such as *British Archaeology*.

## 8 Acknowledgements

- 8.1.1 Fieldwork was carried out by MOLA Senior Archaeologists, Paulo Clemente, Tony Mackinder, Alessandra Riva and Domenica Pate, with the assistance of the contractors Fullers Builders – special thanks to Gary Jarvis and Laine Manoli.
- 8.1.2 The author would also like to thank the following for their contributions and help during and after the fieldworks: Tim Martin (Senior Programme Manager, Hillingdon Council), Philip Wells and Kieran Kintrea (Martin Ashley Architects), Sandy Kidd & Celia Knight (Historic England/GLAAS), Emma Lauze (Conservation Consultant, Hillingdon Council), and Fiona Sweet & Hannah Le Good (Battle of Britain Bunker Visitor Centre).
- 8.1.3 The author also thanks Tracy Wellman & Jemima Dunnett (MOLA graphics) and Andrew Henderson-Schwartz (MOLA Head of Public Impact) for their public engagement works.

## 9 Bibliography

Chartered Institute for Archaeologists, (CIfA), 2014a *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*, (updated 1st October 2020)

Chartered Institute for Archaeologists (CIfA), 2014b *Standard and guidance for the creation, compilation, deposition and transfer of archaeological archives* (updated 1st October 2020)

Chartered Institute for Archaeologists, (CIfA), 2023a *Standard for archaeological monitoring and recording* (published December 2023)

Chartered Institute for Archaeologists, (CIfA), 2023b *Universal guidance for archaeological monitoring and recording* (published December 2023)

English Heritage, 1991 *Management of Archaeological Projects* (MAP2)

Historic England Greater London Archaeology Advisory Service, 2015 *Guidelines for Archaeological Projects in Greater London*

Jane's 1984 (ed Ian V Hogg) *Jane's infantry weapons 1984-85 tenth edition* Jane's Publishing

Lowery, B, 2014 *Pillboxes and tank traps* Shire Publication

MOLA, (Rossi), 2022a, *The Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10, Archaeological Desk Based Assessment*, MOLA unpub report

MOLA, 2022b, *Group Operations Room, Battle of Britain Bunker, Wren Avenue, Uxbridge, London UB10 OGG, London Borough of Hillingdon, Heritage statement*, MOLA unpub report

MOLA, (Mackinder) 2023a, *The Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10, Report on the analysis of historic aerial photographs and a Level 2 analytical survey* MOLA unpub report v3 dated 09.06.23

MOLA, (McKeon), 2023b *The Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10, Written scheme of investigation for an archaeological watching brief*, MOLA unpub report v3 dated 14.07.23

Museum of London, 2002 *A research framework for London archaeology*

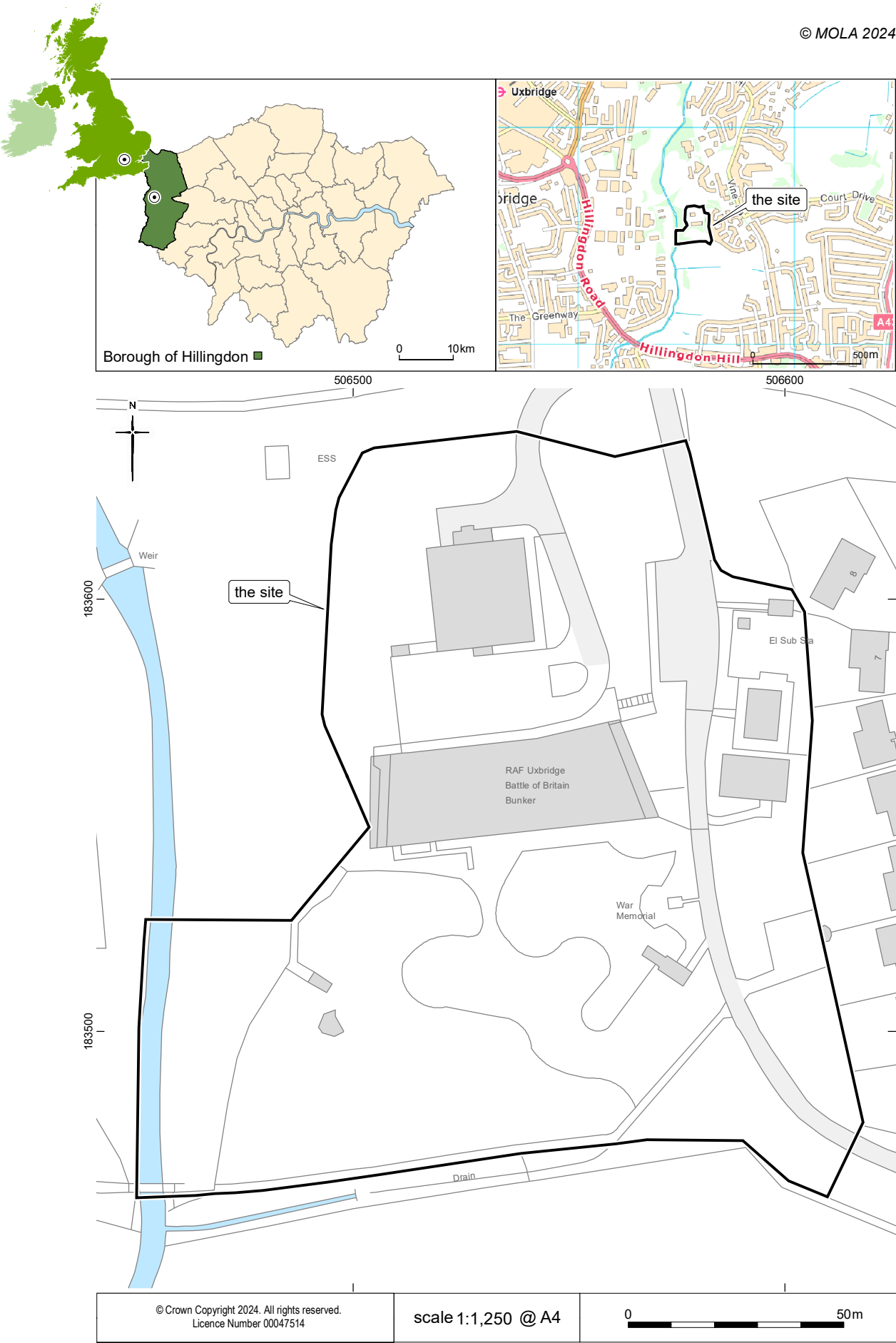


Fig 1 Site location

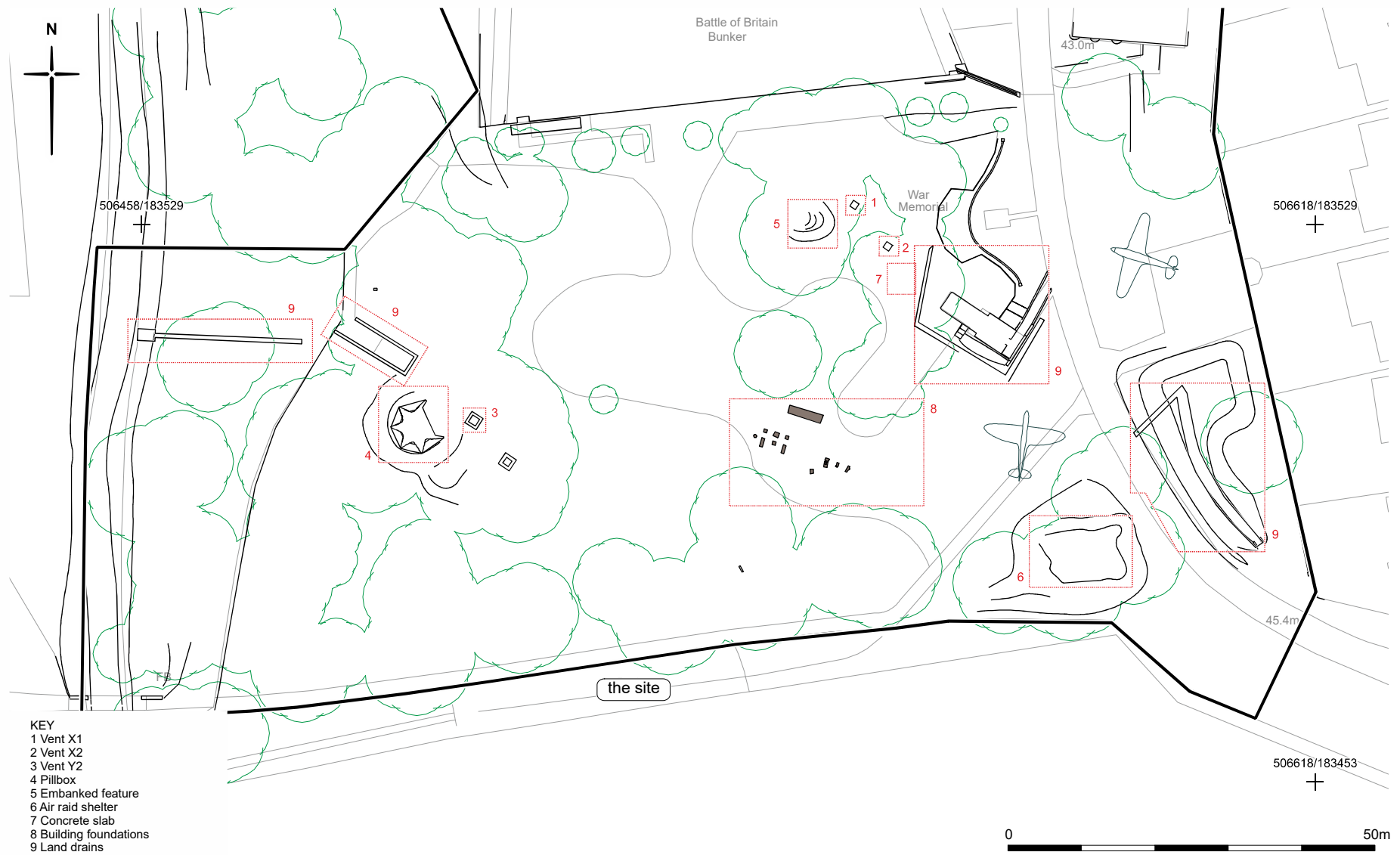


Fig 2 Areas of watching brief



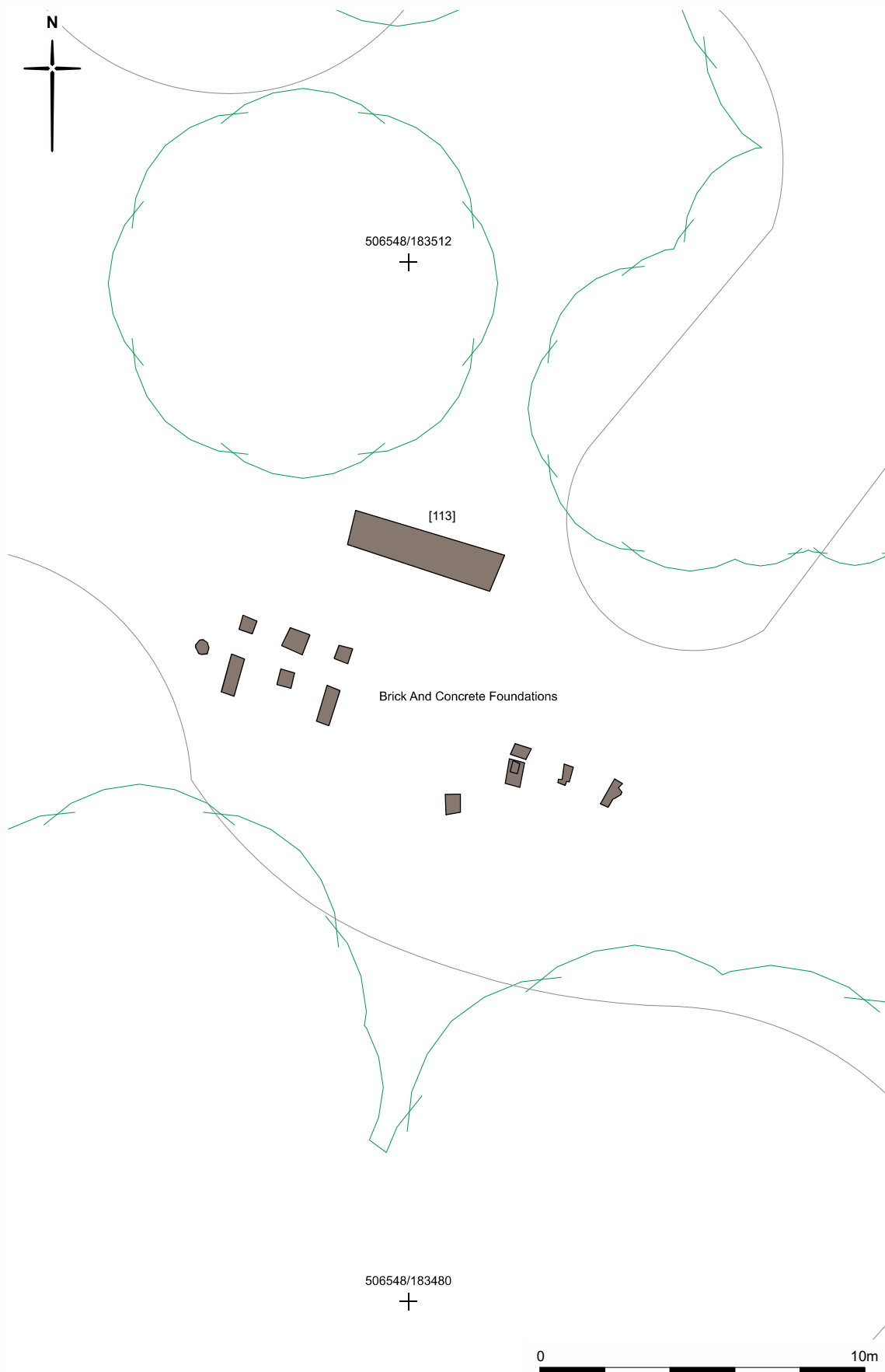


Fig 3 Building foundations

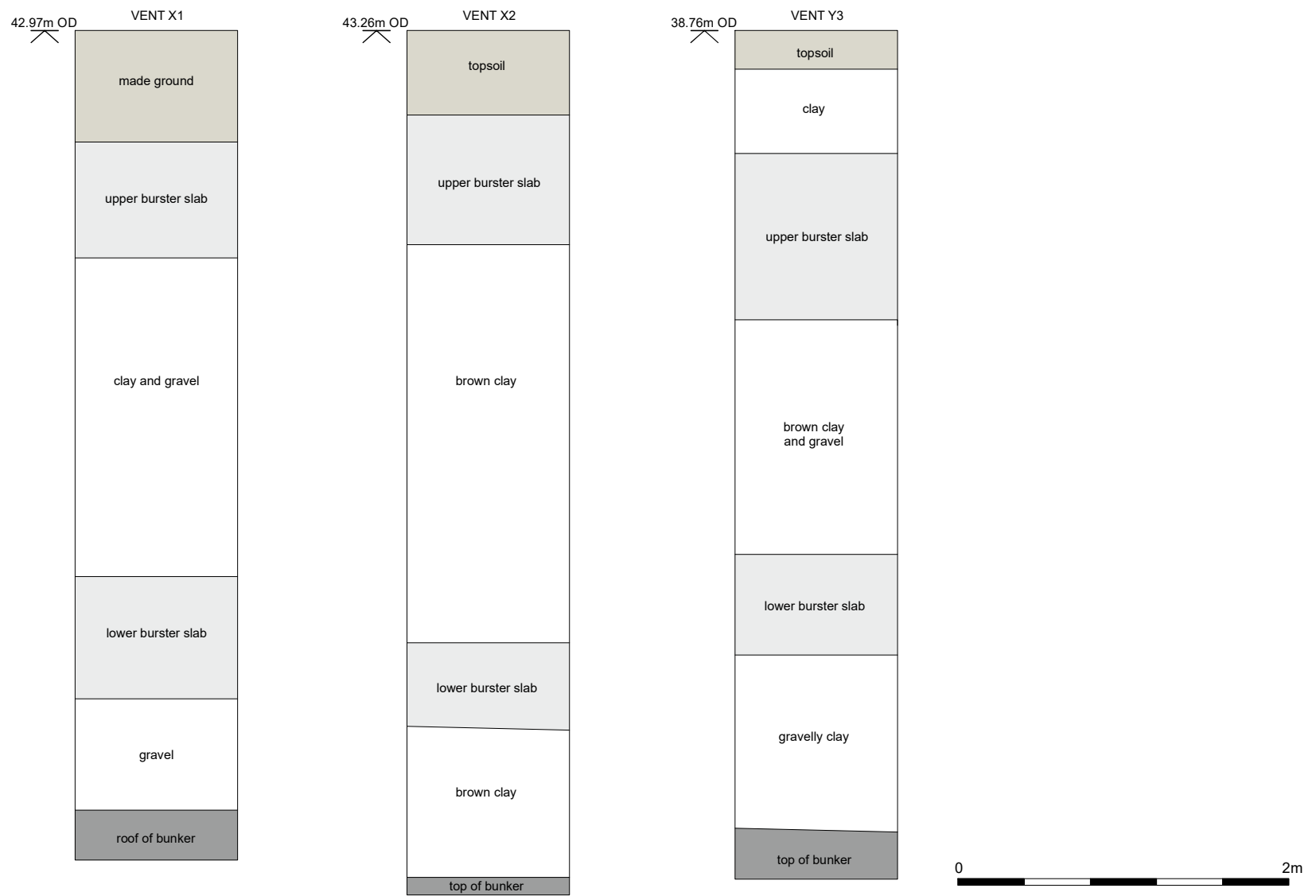


Fig 4 Sections of bunker construction

## 10 OASIS archaeological report form

OASIS ID (UID)	molas1-523684
Project Name	Watching Brief at Battle of Britain Bunker
Sitename	Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10
Sitecode	WRV23
Project Identifier(s)	WRV23
Activity type	Watching Brief
Planning Id	585/APP/2022/2663
Reason For Investigation	Planning: Post determination
Organisation Responsible for work	MOLA
Project Dates	30-Aug-2023 - 26-Feb-2024
Location	<p>Battle of Britain Bunker, Wren Avenue, Uxbridge, UB10</p> <p>NGR : TQ 06573 83515</p> <p>LL : 51.54048298591538, -0.464683228861089</p> <p>12 Fig : 506573,183515</p>
Administrative Areas	<p>Country : England</p> <p>County/Local Authority : Hillingdon</p> <p>Local Authority District : Hillingdon</p> <p>Parish : Hillingdon, unparished area</p>
Project Methodology	<p>Remedial works associated with the Grade 1 Listed No 11 Group Operations Room (Battle of Britain Bunker) at former RAF Uxbridge were monitored. These included installation of new land drains, the repair of three concrete air vents, removal of undergrowth and trees and new landscaping to improve drainage.</p>
Project Results	<p>Natural where seen was London Clay at c 40.0m OD.</p> <p>A series of concrete and brick pads are probably evidence of the early 20th century military buildings built of wood and known to predate the building of the bunker. Aspects relating to the construction of the Operations Room in 1938 such as the two concrete burster layers were recorded when the air vents were exposed down to the top of the bunker roof which was 4.40m below ground level. A slightly later brick pillbox was recorded when it was unblocked and repaired. Two concrete slabs, one built over the bunker, could be bases possibly for storage tanks.</p> <p>Several trenches for new land drains were monitored but no archaeological features were found. The presence of several post-war rifle cartridges recovered from the topsoil shows the area was occasionally used for training exercises.</p>
Keywords	<p>Bunker - 20TH CENTURY - FISH Thesaurus of Monument Types</p> <p>Pillbox - 20TH CENTURY - FISH Thesaurus of Monument Types</p>
Funder	Other local authority London Borough of Hillingdon

HER	Greater London HER - unRev - STANDARD
Person Responsible for work	Jim McKeon
HER Identifiers	
Archives	Physical Archive, Digital Archive - to be deposited with Museum of London;