

**CAMBRIAN ARCHAEOLOGICAL PROJECTS LTD.**

# **Bilton Road, Rugby Bofors Gun Emplacement**

Archaeological Excavation



By  
***Neil Phillips BA (Hons)***



**CAP Report No. 344**

**ARCHAEOLOGICAL EXCAVATION**

**Bilton Road'  
Rugby**

**BY *Neil Phillips* BA(Hons.)**

Prepared for:  
**Mr. G. Wimpey  
West Midlands Ltd.**

**CAP Report No: 344**

**Project No: 610**

**Date: October 2004**



**Cambrian Archaeological Projects Ltd  
Waen Old Farmhouse  
Llidiartywaen  
Llanidloes  
Powys SY18 6JT**

**Telephone: 01686 413857 / Fax: 01686 411280  
e-mail: [cambarch@ukf.net](mailto:cambarch@ukf.net)**

## Contents

Contents	1
List of Figures	2
List of Plates	2
1 Introduction	3
2 Aims and Objectives	4
3 Excavation Methodology	4
4 Excavation Results	5
5 Structure	6
6 Discussion and interpretation	8
Archive Cover Sheet	9

## **List of Figures**

Figure 01	Site location map
Figure 02	Location of known and suspected Bofors gun emplacements around Rugby
Figure 03	Site plan (north end of development area)
Figure 04	1:50 plan and elevation of the Bofors Gun Emplacement

## **List of Plates**

Plate 01	Trench 1 East Wall
Plate 02	Bunker fill
Plate 03	Bunker and steps
Plate 04	Concrete platform
Plate 05	Foundation fill
Plate 06	Upturned platform lid
Plate 07	Modified north-west edge
Plate 08	Steps to bunker
Plate 09	Hole at top of steps
Plate 10	Side entry to steps (Long Lawford)
Plate 11	Bunker
Plate 12	Escape hatch (Long Lawford)
Plate 13	Lowered bunker ceiling (Long Lawford)
Plate 14	Outer ring of gun hold-fast
Plate 15	Outer ring of gun hold-fast
Plate 16	Inside of gun hold-fast
Plate 17	Gun hold-fast (Long Lawford)
Plate 18	Gulley for firing cable
Plate 19	West magazine wall
Plate 20	East magazine wall
Plate 21	Magazine rack base (Long Lawford)
Plate 22	Underside of magazine rack base (Long Lawford)
Plate 23	Wall setting for north end of west magazine
Plate 24	Wall setting for west end of north magazine
Plate 25	Wall setting for south end of east magazine
Plate 26	Magazine racks (Long Lawford)
Plate 27	Bottom shelf of Magazine rack (Long Lawford)
Plate 28	Firing room, front wall (Long Lawford)

### **Copyright Notice:**

Cambrian Archaeological Projects Ltd. retain copyright of this report under the Copyright, Designs and Patents Act, 1988, and have granted a licence for George Wimpey West Midlands Ltd to use and reproduce the material contained within.

The Ordnance Survey has granted Cambrian Archaeological Projects Ltd a Copyright Licence (No. AL 52163A0001) to reproduce map information; Copyright remains otherwise with the Ordnance Survey.



## ***Non Technical Summary***

*This interim report results from work undertaken by Cambrian Archaeological Projects Ltd (CAP) for George Wimpey West Midlands Ltd at Bilton Road, Rugby. The site had lain waste since its use for World War II defence until 1999 when it was levelled as part of the development of an adjacent football pitch. The investigation located and recorded a Bofors Gun Emplacement.*

### **1 Introduction**

#### ***Location and scope of work***

The development concerns the construction of residential homes on a site north of Bilton Road. The area concerned in this brief would be affected by five house plots and associated access.

Cambrian Archaeological Projects Ltd, was contacted by George Wimpey West Midlands after a planning condition had been imposed on the development. The condition had been placed so that the existence of any surviving archaeological remains of a Bofors Gun Emplacement at the site could be investigated.

The scope of the work was to include three trial trenches in an area specified by Edward Wilson (WCC) in order to locate the structure. Dependant on the findings of the trial trenching the work would proceed to excavation of the structure and its subsequent recording.

Edward Wilson (WCC) provided some notes and a plan showing the area requiring excavation and recording requirements prior to development.

The specification was prepared by Kevin Blockley, Director of Cambrian Archaeological Projects Ltd, against a brief (dated October 2004) and agreed with Edward Wilson (WCC).

The site is located at SP 4917 7478.

#### ***Geology and topography***

The site of the proposed development is located to the east of a football pitch which had been created in 1999 by levelling an area of rough ground. Excess fill from the levelling operations had been deposited on the site under investigation, creating a raised terrace on which it was possible to ascertain some ground features. At the time of the trial trenching in 2004 the ground was covered with grass.

The adjacent football field had not been used since its development as the site was prone to water logging.

The Bilton Road, Rugby site lies on the boundary of several different underlying geological strata. Rugby itself is situated on an area of Lower Jurassic Lias. Immediately to the north-west is an area of Permian and Triassic mudstone (British Geological Survey, 1979).

### ***Archaeological and historical background***

The site is located in a small area of ridge and furrow between Johnson Avenue and allotments north of Bilton Road (Armishaw, Defence of Britain Project 2000). Personal knowledge furnished by local inhabitants, however, would suggest that the undulating ground was fairly haphazard and so possibly not related to farming practice. The Bofors Gun Emplacement is listed as having been constructed in 1940 (Armishaw, Defence of Britain Project 2000).

The regional Sites and Monuments Record list the site as SMR number MWA8865. No other archaeological sites are documented in the proposed development area; however, the emplacement is one of a ring of eight such sites around Rugby (Fig 2). The eight Bofors sites and 11 Lewis gun sites (not shown) were built in a ring to defend the vulnerable railway junction and other important factories. Five of the sites have SMR numbers and the other three are proposed areas where the emplacements could have stood.

The archaeological interest in the project was the result of a reported sighting by a member of the public and the proposed development by George Wimpey West Midlands Ltd.

As an aid to interpreting the site an identical and more or less intact structure was visited. The better-preserved structure can be found at Long Lawford, Rugby, (Fig 2) SP 48721 75946.

## **2 Aims and Objectives**

### ***Excavation***

To record archaeological information which will otherwise be destroyed by the proposed scheme and prepare a report on the results.

## **3 Excavation Methodology**

### ***Scope of Fieldwork***

The proposed evaluation consisted of three machine-excavated trenches (Fig 2) that were 2 m in width and 0.5m deep. Trenches 1, & 2 were to be 30 m long and Trench 3 was to be 20 m in length. The trenches were to radiate from a common point; west, south-west and south. The location of the trenches was approximate and subject to adjustment on site as their purpose was simply to locate the structure of the gun emplacement. A mechanical excavator fitted with a toothless bucket removed the overburden under close archaeological supervision. All excavations were to be left open for monitoring by Edward Wilson (Warwickshire County Council).

Trench 1 (Fig 3) was excavated, diagonally across the site revealing a section of brick wall towards the north-east end (Plate 1). As a result of this find, Trench 2 was excavated across the north end of the site to locate the orientation and extent of the structure. Trial trench 3 was found to be superfluous to requirements and was therefore not undertaken.

Excavation Trench 4 was then centred to the area of the exposed wall, using it to outline the entire boundary. The excavation was undertaken with a mechanical excavator fitted with a toothless ditching blade and this was used, under close archaeological supervision, both to expose the structure and remove the overburden.

Site director Neil Phillips and project assistant Catherine Rees undertook the trial trenching under the overall direction of Kevin Blockley (MIFA). The trenches were not cleaned to evaluation standards as their only purpose was to locate the gun emplacement

All works were undertaken in accordance with both the IFA's *Standards and Guidance: for an archaeological desk-based assessment and archaeological evaluation* and current Health and Safety legislation.

### ***Finds***

No finds relating to the Bofors Gun or associated structures of the site were recovered.

## **4 Excavation Results**

### ***Soils and ground conditions***

Generally the site and weather conditions were mixed with persistent rain during the excavation. Some flooding occurred at the western, northern and eastern sides of the excavation, leaving the site very difficult to evaluate. The topsoil which had been brought in for levelling the area in 1999, comprised of, dark yellowish clay silt containing a large amount of natural flint. The topsoil lay over a subsoil of red silt clay. The ground remained wet throughout the evaluation.

### ***Distribution of deposits***

The top and sub soils were consistently present in both trenches although their thickness did vary slightly. The underlying geology in the northern half of the site comprised of a rich red silt clay. The underlying heavy grey clay, although suspected, was not reached.

### ***Descriptions***

#### ***Trial Trench 1 (Fig 3) (Plate 1 and 2)***

The trial trench was excavated revealing two lengths of brick wall with an offset corner, towards the north-east end of the trench (Plate 1). The walls extended north/south for approximately 2 m across the trial trench, at a depth of 0.5 m. To the west of the wall at the northern end was an area of greasy black fill with various bits of wire springs, glass and fabrics (Plate 2). This was felt to be consistent with modern dumping implying the possibility that the blackened area may be part of an internal room of the structure.

#### ***Trial Trench 2 (Fig 3)***

The second trial trench was excavated to the north of trench 1 in order to locate one of the northern corners of the structure. The initial depth of cut was set at 0.5 m but nothing was revealed. The east corner was excavated to a depth of 1 m but again no sign of any underlying structure was found.

#### ***Trial Trench 3 (Fig 3)***



The third trial trench was not needed because the direction of the wall uncovered in trench 1, and the associated fill to the west, indicated that the structure was unlikely to extend south for any great distance in that direction.

#### *Main Trench 4 (Fig 3) (Plate 3)*

The main excavation Trench 4, concentrated firstly on revealing the area of exposed wall in order to determine the size and orientation of the structure. Removal of soil along the north line of the wall resulted in the exposure of the sunken bunker and steps (Plate 3). The depth of the floor of the bunker and the logistics of the working space for the machine then dictated that the best approach would be to locate the southern edge of the structure first allowing it to be uncovered from south to north.

### **5 Structure**

#### *Description*

The structure consists of a concrete platform at the north-east corner of which is an attached, sunken bunker measuring 3.3 m east/west by 2.98 m north/south. Measurements are given from the outside of the bunker. The bunker is reached from the concrete platform by a series of steps. The east and west side of the platform have two low standing, double skin walls whilst the south side has no remains of any structure. The north of the platform has some features of brickwork and concrete. The centre of the platform has a circular ring of concrete, surrounding a sunken area. South east and west of the platform has a sunken drainage ditch.

#### *Concrete platform (Fig 4) (Plates 4, 5, 6, and 7).*

The concrete platform (Plate 4) measures 7.22 m east/west by 6.4 m north/south with an average thickness of 0.16 m. The foundation for the platform consists of a bed of yellow sand on to which was laid a single layer of house bricks (Plate 5). The concrete was then laid over the top of these and levelled in one section. The edge of the concrete platform has a rough edge with a rounded, upturned lip, (Plate 6) which would indicate that the platform was surrounded by earthen banks rather than any shuttering. There was also no evidence that any foundation trench existed beyond the limit of the existing platform.

The north-west corner of the platform is foreshortened 0.4 m for a distance of 0.9 m creating an internal cut-out (Plate 7). The westerly edge is also modified in this area, creating an additional section 1.3 m long by 0.2 m wide. The purpose of this feature is unknown.

To the north-east of the platform is an internal cut for a set of steps leading down to the attached bunker.

#### *Steps (Fig 4) (Plates 8 and 9).*

The steps are enclosed in an area of 2.01 m by 0.63 m and result in a drop of 1.02 m from the concrete gun platform to the concrete floor of the bunker (Plate 8). Each riser has a depth of 0.2 m except the third step from the bottom which has a fall of 0.22 m. The first two steps from the bottom have a top width of 0.2 m, the third step is 0.22 m, the fourth 0.13 m and the fifth 0.2 m.

Cut into the south-east corner of the fourth step from the bottom, is a rectangular hole 0.24 m by 0.24 m by 0.24 m of unknown purpose (Plate 9).



The steps are shuttered concrete construction with the entrance from the west, as a wall for the magazine used to stand across the south edge, as can be seen in the example from the nearby site at Long Lawford, Rugby (Plate 10).

*Bunker* (Fig 4) (Plates 10, 11, 12 and 13)

The bunker is a solid brick construction measuring, externally 2.98 m north/south by 3.5 m east/west. The internal measurements are 2.82 m by 2.3 m (Plates 11). The bunker has a concrete floor the depth of which is 1.02 m beneath the concrete gun platform. The highest section of remaining wall was to the east at a height of 1.2 m above the bunker floor.

Comparison of the site at Long Lawford, shows that the bunker would have stood at least 2 m above the surface of the gun platform and would have had a concrete roof. The internal structure would have had an opening, possibly an escape hatch, to the north, (Plate 12) and a lowered ceiling at about 1.5 m, to the west (Plate 13) carried. The lowered ceiling would have been carried on a steel lintel about 1.5 m above the floor and serves as the base for the firing room which is unfortunately missing from both structures.

*Gun hold-fast* (Fig 4) (Plates 14, 15, 16, 17 and 18).

The gun hold-fast remains consist of three sections of concrete ring with an outer diameter of 2.7 m and an internal diameter of 1.7 m (Plates 14 and 15). The concrete ring itself therefore has a width of 0.5 m. The ring stands above the concrete base to a height of 0.26 m. Inside the ring the concrete platform has been dropped by a depth of 0.5 m leaving a rough surface (Plate 16) which would suggest that an internal structure has been removed.

The form of the missing structure can be seen at the Long Lawford site (Plate 17). Missing from the Bilton Road site is the upper ring of concrete which encloses a rectangular block of concrete which is surmounted by a metal plate connected by a series of long metal bolts.

Outside the ring at Bilton Road is an almost complete surround of damaged concrete varying around the 0.2 m width, which may have resulted from use of the gun.

To the north of the circular ring is a linear gulley cut into the concrete, 0.1 m wide and 0.15 m deep (Plate 18). The gulley runs from the concrete ring and under the north magazine rack to the building that would have stood to the west of the bunker. The gulley used to house the firing cable for the gun which was operated remotely from the missing building.

*Magazines* (Fig 4) (Plates 18 - 26).

Three magazines were located on the concrete platform: north, east and west. The remains of the north platform have been reduced to a raised concrete platform which can be seen, running across the picture (Plate 18). Part of the brick wall can also be seen as well as drainage channels formed by concrete extensions between the bricks. Parts of the east and west outer walls survive as lengths of double skin wall; the single skin standing on the inside (Plates 19 and 20). On both the west and east walls drainage channels can be seen as gaps between the bricks.

By comparison with the long Lawford site it is possible to interpret the inner wall as a shelf on which stood a raised concrete platform for holding the ammunition. Plate 21 shows part of the raised platform in place whilst plate 22 shows the underside of the same platform. Plate 22 also

shows that the height of the platform above the concrete base, at four bricks; the left hand corner of the photograph shows the top of one of the drainage holes left between the lower course of bricks, which can be still be seen in the east and west walls at Bilton Road.

Each of the magazines would have had side walls but none of these remain at Bilton Road although it is possible to detect traces of the brickwork on the concrete floor. Plate 23 shows the position of the northern extreme of the west wall, Plate 24 the west extreme of the north wall and Plate 25 the southern extreme of the east wall.

Again the best way to interpret the magazine racks can be gleaned from the Long Lawford site where they exist in a good state of preservation (Plate 26). Plate 27 shows the construction of the concrete shelf; exposed are some steel wires which may have suspended the shelf above the floor so as to remove vibrations caused by the gun.

*Missing structure (Plate 27).*

The structure of the firing room which would have been located to the north of the platform, adjacent and above the bunker has been lost, however, the Long Lawford site has provided evidence for the existence of such a structure in Plate 13. Further evidence can be seen in Plate 28 which shows the front wall which stands on the edge of the gun emplacement platform.

## **6 Discussion and interpretation**

### ***Reliability of field investigation***

The excavation was hampered by modern development as the site was levelled in 1999. Most of the standing walls had been removed. Further problems were encountered with water logging and the amount of dumping within the bunker.

The overall findings of the excavation were consistent with the expected archaeological knowledge of the area. The gun emplacement was found and its remaining structure recorded.

### **Significance**

The excavation revealed the precise whereabouts of the Bofors Gun and provided a window of opportunity to survey the surviving structure.

### **Acknowledgements**

Thanks to; Kevin Blockley (CAP) for his advice and help and advice during the compilation of this report and Edward Wilson (WCC) for his help and advice on site.

## ARCHIVE COVER SHEET

Site Name:	Bilton Road, Rugby
Site Code:	BRR/04/EXC
PRN:	N/A
NPRN :	N/A
SAM:	WMA8865
Other Ref No:	CAP Project 610
NGR:	SP49177478
Site Type:	World War II Bofors Gun emplacement
Project Type:	Evaluation and excavation
Project Officer:	Neill Phillips
Project Dates:	October 2004
Categories Present:	N/A
Location of Original Archive:	Warwickshire SMR
Location of duplicate Archives:	CAP Office
Number of Finds Boxes:	N/A
Location of Finds:	N/A
Museum Reference:	N/A
Copyright:	CAPLtd
Restrictions to access:	None



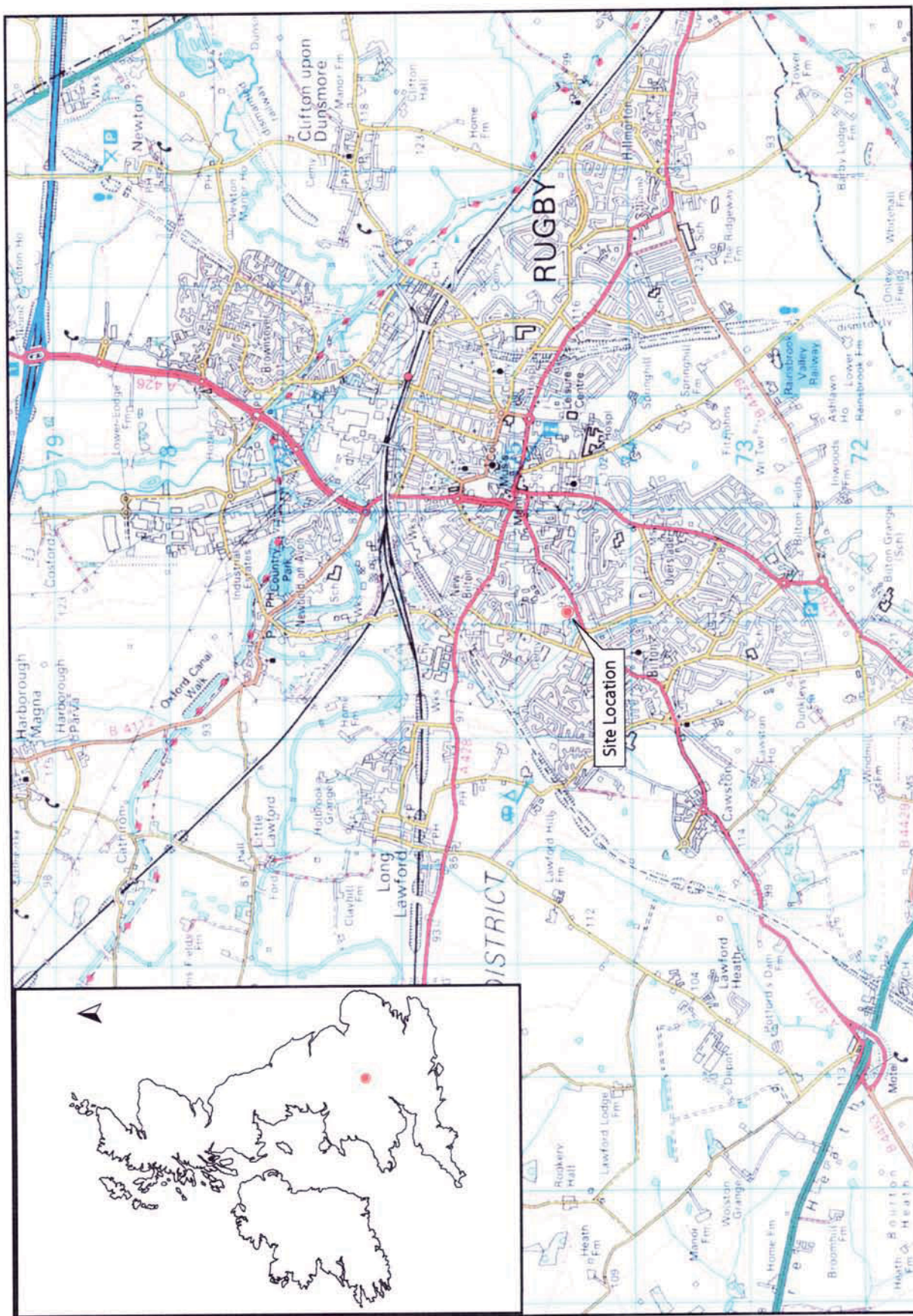


Fig 01: Location Map





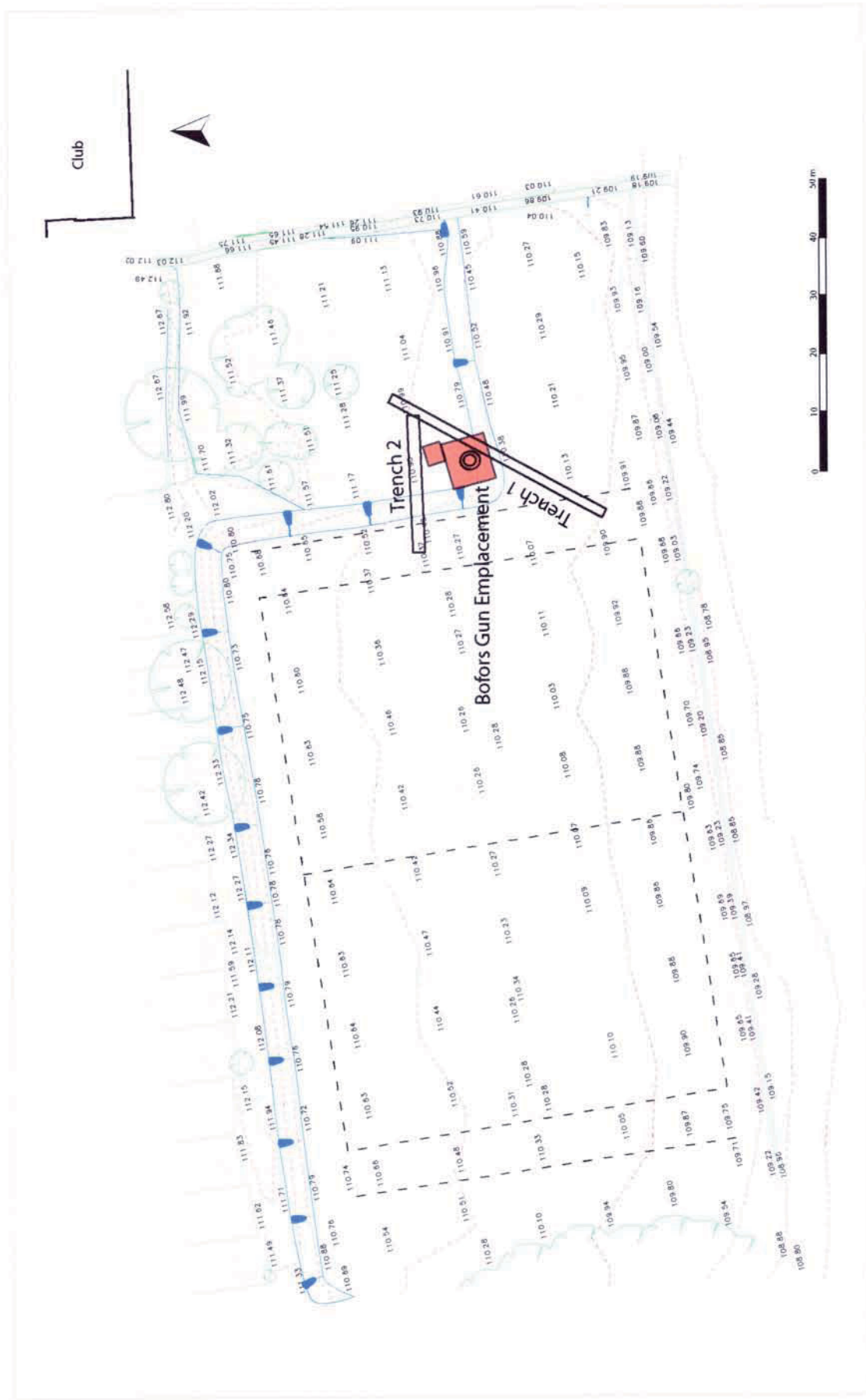
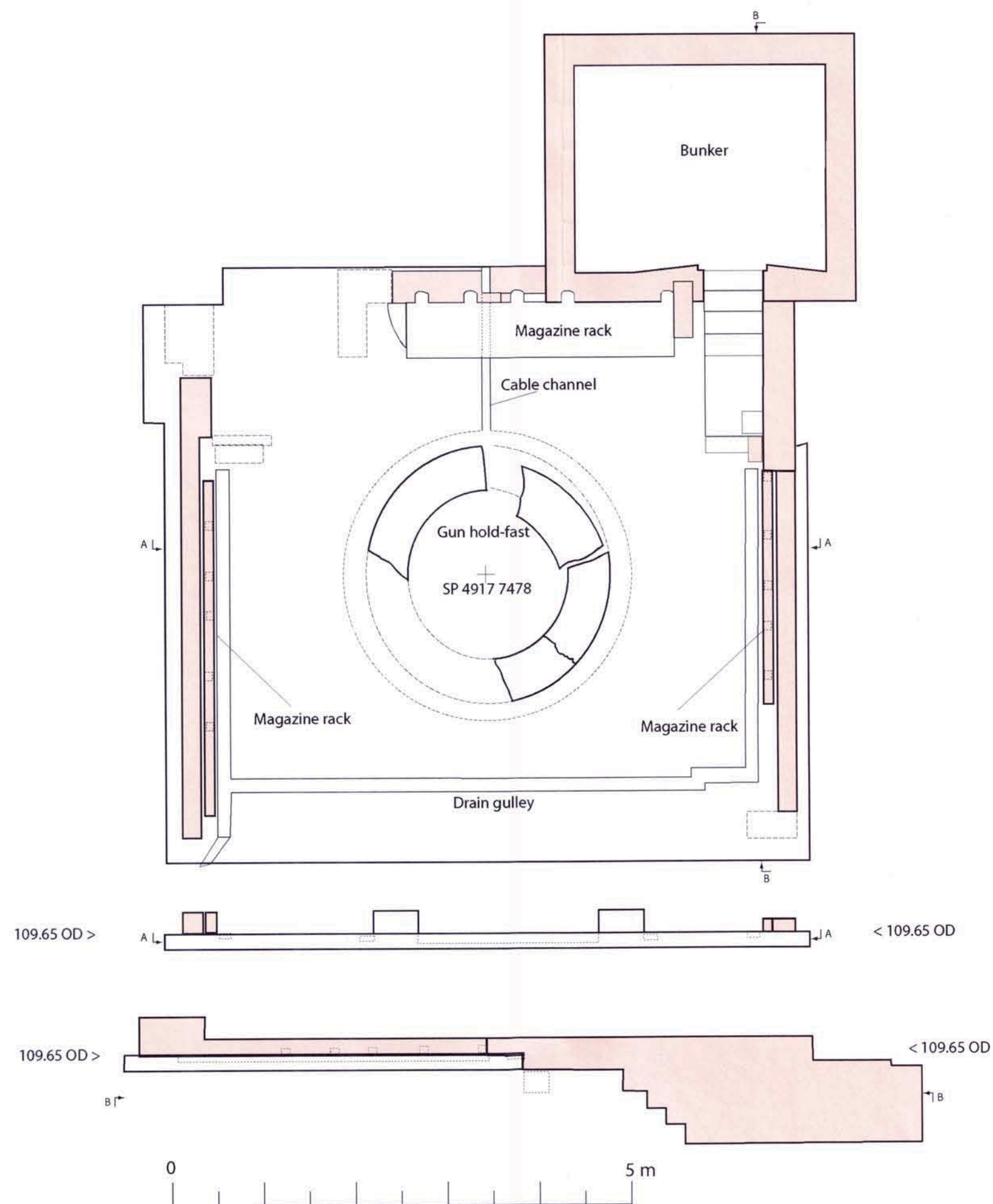


Fig 03: Site plan (north end of development area)





- Bricked areas
- Concrete
- Surface traces of vanished features
- Internal features

<b>Job Title:</b>	Bilton Road, Rugby
<b>Drawing Title:</b>	Bofors Gun
<b>Date:</b>	27 - 10 - 2004
<b>Drawn By:</b>	Neil Phillips
<b>Scale:</b>	1:50
<b>Figure 04:</b>	



Plate 01: Trench 1 East Wall



Plate 02: Bunker fill



Plate 03: Bunker and steps



Plate 04: Concrete platform





Plate 05: Foundation fill



Plate 06: Upturned platform lip



Plate 07: Modified north-west edge



Plate 08: Steps to bunker



Plate 10: Side entry to steps (Long Lawford)



Plate 09: Hole at top of steps



Plate 11: Bunker



Plate 12: Escape hatch (Long Lawford)





Plate 14: Outer ring of gun hold-fast



Plate 13: Lowered bunker ceiling (Long Lawford)



Plate 16: Inside of gun hold-fast



Plate 15: Outer ring of gun hold-fast



Plate 17: Gun hold-fast (Long Lawford)



Plate 18: Gulley for firing cable

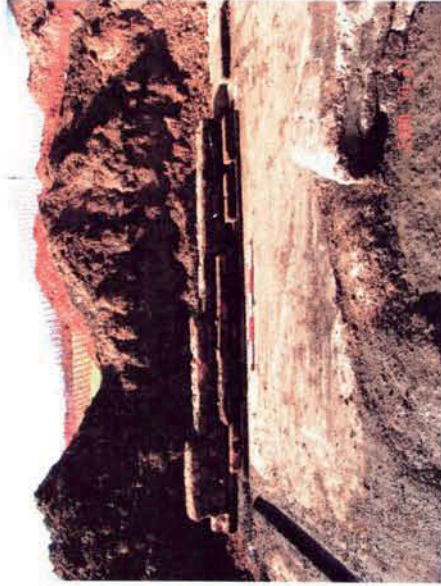


Plate 19: West magazine wall



Plate 20: East magazine wall





Plate 21: Magazine rack base (Long Lawford)



Plate 22: Underside of magazine rack base (Long Lawford)



Plate 23: Wall setting for north end of west magazine



Plate 24: Wall setting for west end of north magazine



Plate 25: Wall setting for south end of east magazine



Plate 26: Magazine racks (Long Lawford)



Plate 27: Bottom shelf of Magazine rack (Long Lawford)



Plate 28: Firing room, front wall (Long Lawford)





Cambrian Archaeological Projects Ltd  
Old Chapel  
Llanidloes  
Montgomeryshire  
SY18 6JR

Telephone: 01686 413857  
e-mail: [kevin@cambarch.co.uk](mailto:kevin@cambarch.co.uk)