

**Channel Tunnel Rail Link  
Union Railways (South) Ltd**

**Project Area 330**

**NORTHUMBERLAND BOTTOM ARMY CAMP  
ARC NBAC 98**

**STANDING BUILDING SURVEY  
INTERIM REPORT**

**Contract No. S/300/0052**

**MUSEUM OF LONDON**

**Museum of London Archaeology Service**

**September 1999**

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Prepared by:
Date:
Checked by:
Date:
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Position:
Date:

**Contract No. S/300/0052**

**Museum of London Archaeology Service  
87 Queen Victoria Street  
London EC4V 4AB**

**September 1999**

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## 1 INTRODUCTION

- 1.1 The Museum of London Archaeology Service (MoLAS) was commissioned by Union Railways (South) Ltd (URS) to undertake a detailed standing building survey at Northumberland Bottom Army Camp, Kent (site code ARC NBAC 98). The site is situated to the south of the A2 near Gravesend, to the west of the A227 (Figure 1). This survey formed part of an extensive programme of archaeological investigations carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL). The site is centred on URS grid point 43850 E 51150 N and NGR grid point TQ 638711. The area of the site was 7 hectares.
- 1.2 The work was undertaken in accordance with the Written Scheme of Investigation, prepared by URS, detailing the scope and methods of survey. The survey took place between September and October 1998.
- 1.3 The work was in advance of the clearance of the site to make way for a construction camp and the CTRL railway cutting. This document reports on the pre-demolition survey and does not include additional information gained during the Package 330 Watching Brief connected with the demolition of the buildings and construction compound ground works.

## 2 DESCRIPTION OF WORK

- 2.1 The primary research aim was to provide a written and drawn record of all World War Two (WWII) buildings suitable for National Monument Record archiving.
- 2.2 All of the structures which were safe to enter were recorded in accordance with Level 2 of *'Recording Historic Buildings A Descriptive Specification'* as provided by the Royal Commission on the Historic Monuments of England, 1996, Third Edition, based on the standards supplied by the Council of Europe.
- 2.3 A full inspection of the site was made and information on the buildings acquired from the owners/occupiers. All buildings or structural elements that could have dated from the military phase of the site were numbered and recorded. The military site plan provided by URS was annotated and amended where necessary.
- 2.4 For each structure a record sheet was completed. This included a measured sketch showing room layout and any surviving fixtures and fittings. Standing buildings and structures were given Structure numbers in a single sequence. The survey was purely visual; no panelling, floor boards *etc* were removed, but where they were missing the exposed frame structure or constructional details were recorded. Some structures were unsafe to enter and therefore a more limited record was made. David Burrige of the Defence of Britain Project and military historian Victor Smith were consulted and visited the site. Known non-military alterations were not recorded.
- 2.5 A photographic record comprising internal and external shots was made of the camp complex. These included both colour slide and black and white prints. Only limited documentary, photographic and cartographic research has been carried at this stage.

### 3 SITE DESCRIPTION AND CURRENT USE

- 3.1 The site comprised a WWII anti-aircraft gun battery and its associated domestic encampment. There were twenty-six single storey buildings on the site, some of which are of post war date (Figure 2). As well as the buildings there are a number of standing structures, partially buried structures, foundations and original roads and tracks surviving on the site. None of the buildings were listed.
- 3.2 Some of the buildings are still inhabited, others were derelict and unsafe to enter. The buildings were constructed mainly of wood with asbestos roofing and gutters, others are concrete/block structures and one steel framed. The buildings of the southern part of the camp have been converted into riding school stables, and some other buildings (stables and a barn) have been added. Several of the north-western buildings are currently occupied, this includes houses, kennels and a used car lot. The area of the best preserved gun emplacement was being used as a dung heap.

### 4 HISTORICAL BACKGROUND

- 4.1 A history, full quantification, characterisation, and assessment of anti-aircraft artillery can be found in C.S. Dobinson 1996 *Twentieth Century Fortifications in England 1914-46* CBA

#### *Anti-Aircraft Gun Batteries*

- 4.2 Aerial bombardment is a purely 20th century phenomenon. Begun in the First World War against military targets it had developed by the Second World War into strategic bombing towards civilian and military targets. Artillery defence developed with it and by WWII Anti-Aircraft (AA) Artillery had developed into two types 1) big, heavy guns to engage high-flying strategic bombers and 2) light weapons for defence against lower-flying aircraft. Some 981 light artillery and 1238 heavy artillery (HAA) sites were established during WWII. In September 1938 London had 30 HAA sites and the Thames and Medway Gun Defended Area a further 24. The latter rose to 72 during 1940.
- 4.3 Rudimentary at first, these places eventually became substantial settlements, each housing many hundreds of men and women. The majority of Britain's AA Artillery sites of WWII were abandoned in 1946. Those that survived into post-war era were finally closed in 1955.

#### *Northumberland Bottom Army Camp*

- 4.4 In April 1938 the TS17 Northumberland Bottom was chosen as a suitable location for a four-gun 4.5 inch HAA battery. By 1942 the records show that the camp was fitted with four guns and a radar station. The manning increased from 312 (76 regimental and 236 Battery) in May 1942 to 747 in December 1943. Since the regimental staff of 169 consisted of male and female mixed personnel, some 'doubling up' may have occurred or even two separate camps might have been established; like many AA gun battery sites, no war time plan is known to exist. As the site does not appear to have been designated a 'Diver' (anti V1) battery it is possible that guns may have been withdrawn and re-deployed elsewhere in 1944.
- 4.5 In January 1946 the camp was declared 'Off-site' and unmanned in the course of the post-war 'Nucleus' programme, while guns and equipment were transferred to local Ordnance Depots. The site appears to have been used as a civil defence training camp after the war. An underground Royal Observer Corps observation post was established in the vicinity of the site in the Cold War but its location has not been established

## 5 RESULTS

### 5.1 General Description

5.1.1 The site (Figure 2) is made up of two distinct components; the operational part sometimes called the Gun Park and the Domestic Camp. The buildings are constructed mainly of wood with asbestos roofing and gutters, others are concrete/block structures and one steel framed. The site appears to cover approximately 7 hectares but may originally have been bigger.

### 5.2 Gun Park : The Gun Emplacements

#### *Structure 6 : HAA gun emplacement*

5.2.1 At the time of recording this emplacement was used as a dump for stable sweepings and was only partially exposed. Only about half of the emplacement side and none of the base was visible. The parapet was constructed of concrete sections.

5.2.2 Structure 6 appears to be a 1938 pattern octagonal emplacement with additional external shelters positioned either side of the south-western entrance. On the one exposed entrance the double steel gate was missing, as were all the steel doors to the six internal ammunition recesses. Three recesses were available for recording but no ammunition racks survived.

5.2.3 The external shelters were of different sizes:

- West: 2.57m x 1.70m externally with hinges for a single steel door and no visible internal fittings.
- South: 3.10m x 3.96m with hinges for double steel doors.

The mains fuse box and switches were the only internal features observed. An electric cable, protected in metal tubing, ran round the parapet to each ammunition recess.

5.2.4 On the parapet top a number of mountings for a square section tubular frame were recorded.

#### *Structure 8 : HAA gun emplacement*

5.2.5 Only the southern wall and an external shelter of this emplacement was exposed. The interior appeared to be partially destroyed and the remainder backfilled with rubble. The parapet and shelter were of concrete block construction and the hinges for a single steel door survived. This is one of two additional emplacements for guns of unknown type (marked on the 1963 OS map).

#### *Structure 29 : HAA gun emplacement*

5.2.6 Assumed to be similar to Structure 6 but only the top of the parapet showed above ground.

#### *Structure 30 : 40mm Bofors Gun Emplacement*

5.2.7 Located in the south-western corner of the Gun Park was a roughly square emplacement (7.00m x 7.00m) constructed from a single thickness concrete blocks. A number of protruding ammunition lockers were recorded. The centre of Structure 30 was partially backfilled with modern material.

### 5.3 Gun Park : Associated Buildings

#### *Structure 2 : NAAFI institute*

- 5.3.1 Structure 2 consisted of a timber framed hut on brick pillars and dwarf walls. There was a plank and felt double gabled roof with walls of external shiplap cladding pierced by metal frame windows. Structure 2 was made from two standard 29.25m x 3.65m units built together. The eastern unit was divided into two rooms by a corridor. The western unit was in much poorer condition but found to contain toilets (both male and female), a boiler room and a number of other small rooms, some of which had concrete floors.

#### *Structure 3*

- 5.3.2 Post-war building on a possible war time concrete foundation. The original building appears to have been a latrine.

#### *Structure 11*

- 5.3.3 Timber frame building measuring 18.28m x 3.65m, with shiplap cladding, built on brick pillars and dwarf walls and covered by a corrugated iron gabled roof. Structure 11 has been converted to stables so no original windows, doors or internal walls survive.

#### *Structure 12*

- 5.3.4 Timber frame building measuring 21.94m x 4.57m, with shiplap cladding, built on brick pillars and dwarf walls and covered with a corrugated iron gabled roof. During conversion to a stable the east wall has been moved back a metre and any internal walls removed. The original wooden windows survive on the west side as do the vent and door in the north gable wall.

#### *Structure 13*

- 5.3.5 Brick and concrete structure with steel shuttered doors and windows. There was an associated external shelter or recess.

#### *Structure 14 : Guard House*

- 5.3.6 Timber frame building measuring 3.65m x 5.48m. The Guard House was divided into seven rooms of which two and the corridor appear to retain original panelling (consisting of vertical tongue and groove planking to dado rail). The veranda is a post-war addition and there has been some alteration to the window on the south elevation.

### 5.4 Gun Park : Associated Structures

#### *Structure 1 : Sentry post?*

- 5.4.1 Small raised platform with access steps. Its position adjacent to the secondary access road and extensive view of the approaches to the north-east would make it a logical position for a sentry post.

#### *Structure 4*

- 5.4.2 Double concrete block construction with flat concrete roof with no overhang. The northern side was originally open and no evidence of door hinges or shutter survives. The building measures 2.74m x 4.57m internally and has a number of cable ducts built through the walls.

#### *Structure 5*

- 5.4.3 Roofless double concrete block construction measuring 5.46m x 7.62m internally with a raised floor and ramped access. To either side of the entrance are second, possibly blast, walls.

Structure 5 was partially obscured by large dump of stable sweeping so that none of the base was visible.

*Structure 9*

5.4.4 Same as Structure 5 but completely concealed by a modern barn structure.

*Structure 10*

5.4.5 Same as Structure 4 even to the form of its conversion to a stable.

*Structure 36 : Fence*

5.4.6 This section of the southern perimeter fence may be original. Made up of flat and angled iron, with a curved top piece, notched to hold the strands of barbed wire.

*Structure 37 : The sewage works*

5.4.7 Although outside the study area these structures were noted as they were built to service the camp. They consist of a small pump house, filtration and settling beds.

## 5.5 Domestic Camp

*Structure 15 Water supply*

5.5.1 Small square concrete walkway with flat roof containing machine pit below.

*Structures 16-20 : Three barrack blocks and a shower block, connected by a covered walkway.*

5.5.2 Each barrack block measured 21.94m x 5.48m and was of timber frame construction placed on brick pillars. Walls were of external shiplap cladding with wooden window frames. The roof was of corrugated asbestos. The blocks consisted of an entrance hall and small 2.74m x 2.74m room at one end, with the remainder of the space forming a single large room. There was evidence of tar paper lining and some small blocks set in the floor appeared to be bed blocks. A central heating pipe survived in some of the rooms.

5.5.3 The shower hut measured 25.60m x 7.31m and was of timber framed construction built on a concrete base. The internal walls and some of the fittings survived. A through corridor led to a urinal, a possible bathroom, the main wash room/drying room and two other rooms of unknown function. The main wash room contained ten toilet cubicles, three rows of sinks and eight shower cubicles. The southern end of the building contained the boiler room.

5.5.4 A covered walkway connected the barrack blocks with the shower hut and provided an exit to the canteen. It survived in an extremely derelict state but appeared to be of timber frame construction on brick piers with flat roof.

*Structure 21 : Air raid shelter?*

5.5.5 A small section of buried brick vault was thought most likely to be part of an air raid shelter.

*Structure 22 : Kitchen and Canteen*

5.5.6 Structure 22 had been extensively altered with nearly all internal walls and features removed. The southern section was constructed of two 5.48m units built together, braced on central pillars. Structure 22 formed the mess hall, link building with toilets. The northern section contained the boiler room. There was no evidence to place the location of the kitchen. The function of the eastern block is unknown.

*Structure 23*

- 5.5.7 Structure 23 was partly demolished and had been extensively converted. The building was of timber frame construction on brick pillars and dwarf walls. Structure 23 was made from two 7.31m units built together. Wooden window frames with external shiplap cladding and a corrugated asbestos sheet roof were noted.

*Structure 24 : Cinema lecture theatre*

- 5.5.8 Structure 24 was a timber frame construction measuring 4.57m x 25.60m, built on brick pillars and dwarf walls. There was a central entrance which divided into an entrance hall, toilets, two large rooms and one smaller room. A metal flue suggests location of a boiler in the smaller room.

*Structure 25 : Workshop*

- 5.5.9 Structure 25 was metal framed and measured 21.94m x 10.97m (consisting of six bays of 3.65m with a 3.65m wall height). There was a corrugated iron cladding and asbestos sheet gable roof. No evidence for any internal divisions survived. The north wall may originally have been open but now has cladding to a height of 2.43m, with a double sliding door in a central position. Both gable walls have six metal framed windows and there are a two rows of sky lights in each side of the roof.

*Structure 26*

- 5.5.10 Timber frame construction measuring 10.97m x 21.94m on brick pillars and dwarf walls. Made from two 5.48m units built together with a central entrance. There are wooden windows and Structure 26 is divided into an entrance hall, central corridor, toilets, kitchen? and seven other rooms of varying size. Chimney flues suggest stoves in three rooms. There is a mixture of concrete and wooden floors and brick, timber and block internal walls.

*Structure 27: Guard hut and kennels*

- 5.5.11 Brick and concrete structure consisting of guard room and two kennels with yards. Partially converted to a garage.

*Structure 28*

- 5.5.12 Originally thought to be a converted military building but no structural evidence was found to support this.

*Structures 31 to 33*

- 5.5.13 Foundations and concrete steps suggesting location of three other buildings.



## 6 CONCLUSIONS

- 6.1 The military structures and buildings recorded form only part of the total number of military structures known to have existed. The 1963 OS map shows seven emplacements with associated paths and magazines. Three of these emplacements remain to be recorded in the field. Furthermore the command centre, the most diagnostic feature of the Gun Park, also remains unlocated and there is a noticeable absence of air raid shelters. Levels information suggests that some of these structures may survive in a buried state. Evidence of other features, like the radar, may have been too slight to survive.
- 6.2 Many of the internal layouts of the buildings were recovered and in one case a large amount of the original fixtures survived. However, the function of many of the buildings was not discernible from the surviving structural evidence.
- 6.3 It was, however, clear that the Camp was built in several phases with later additions in both the Domestic Camp and Gun Park. The dating of the constructional phases and the association with technical and manning changes requires further documentary research.
- 6.4 Gun battery sites were frequently protected by earthworks as, in the event of invasion, they would have been expected to form a defensive position. Structure 34 is the only evidence on site for a trench but this is probably of post-war date. Archaeological excavation to both the north and east (ARC WNB 98) of the Army Camp site has also failed to locate any weapons pits, communication trenches or pill boxes.

**APPENDIX 1 - ARCHIVE INDEX**

<b>ITEM</b>	<b>NUMBER OF ITEMS</b>	<b>NUMBER OF FRAGMENTS</b>	<b>CONDITION (No. of items)</b> (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Contexts records	36		
A1 plans	1		D
A4 plans			
A1 sections			
A4 sections			
Small finds (boxes)			
Films (monochrome) S=slide; PR=print	4PR		
Films (Colour) S=slide; PR=print	2S		
Flint (boxes)			
Pottery (boxes)			
Fired clay (boxes)			
CBM (boxes)			
Stone (boxes)			
Metalwork (boxes)			
Glass (boxes)			
Slag (boxes)			
Human Bone (boxes)			
Animal Bone (boxes)			
Soil Samples (No.)			
Soil Samples (bags/tubs)			
Soil Samples (Monolith/kubina tin)			

## **APPENDIX 2 - INTERIM SUMMARY REPORT**

The Museum of London Archaeology Service (MoLAS) was commissioned by Union Railways (South) Limited (URS) to undertake a detailed standing building survey at Northumberland Bottom Army Camp, Kent (site code ARC NBAC 98). This work formed part of an extensive programme of archaeological investigations carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL). The site is centred on URS grid point 43850 E 51150 N and NGR grid point TQ 638711. The area of the site was 7 hectares.

The site comprised a second World War anti-aircraft gun battery and its associated domestic encampment. There were twenty-six single storey buildings on the site, some of which are of post war date. As well as the buildings there are a number of standing structures, partially buried structures, foundations and original roads and tracks surviving on the site. None of the buildings were listed.

The military structures and buildings recorded form only part of the total number of military structures known to have existed. Many structures remain unlocated but levels information suggests that some of these may survive in a buried state. Evidence of other features, like the radar, may have been too slight to survive.

Many of the internal layouts of the buildings were recovered and in one case a large amount of the original fixtures survived. However, the function of many of the buildings was not discernible from the surviving structural evidence.

**APPENDIX 3: KENT SMR RECORD SHEET**

<b>Site Name:</b> Northumberland Bottom Army Camp, Kent			
<b>Site code:</b> ARC NBAC 98			
<b>Summary:</b> Standing building survey of the Second World War structures at Northumberland Bottom, Kent, commissioned by Union Railways (South) Limited			
<b>District:</b> Gravesham		<b>Parish:</b> Cobham CP	
<b>Period(s):</b>  1. <b>Modern</b> - Second World War 1930 - 1950			
<b>NGR (to centre):</b>		100 km ref: TQ	
<b>NGR Easting</b> 6380		<b>NGR Northing</b> 7110	
<b>Type of Recording:</b>	<b>Evaluation</b>	<del><b>Watching-Brief</b></del>	<del><b>Field-Walking</b></del>
<b>(Delete)</b>	<b>Excavation</b>	<del><b>Geophysical Survey</b></del>	<b>Measured Survey</b>
<b>Date of Recording: (From)</b> September 1998		<b>(To)</b> October 1998	
<b>Unit Undertaking Recording:</b>  Museum of London Archaeology Service, Walker House, 87 Queen Victoria Street, London EC4V 4AB			
<b>Summary of Field Results:</b>  Buildings, gun emplacements and other structures were recorded.			
<b>Location of Archive/Finds:</b>		MoLAS temporarily	
<b>Bibliography:</b> URL 1994 <i>Channel Tunnel Rail Link, assessment of historic and cultural effects, final report</i> (Oxford Archaeological Unit), vol 1,  URS 1999 <i>Northumberland Bottom Army Camp (ARC NBAC 98) Interim report</i> , Museum of London Archaeology Service			
<b>Summary Compiler:</b> Julian Ayre			<b>Date:</b> 23 July 1999