

***THE  
ROYAL GUNPOWDER FACTORY  
WALTHAM ABBEY***

***NEW HILL  
(AREA N)***

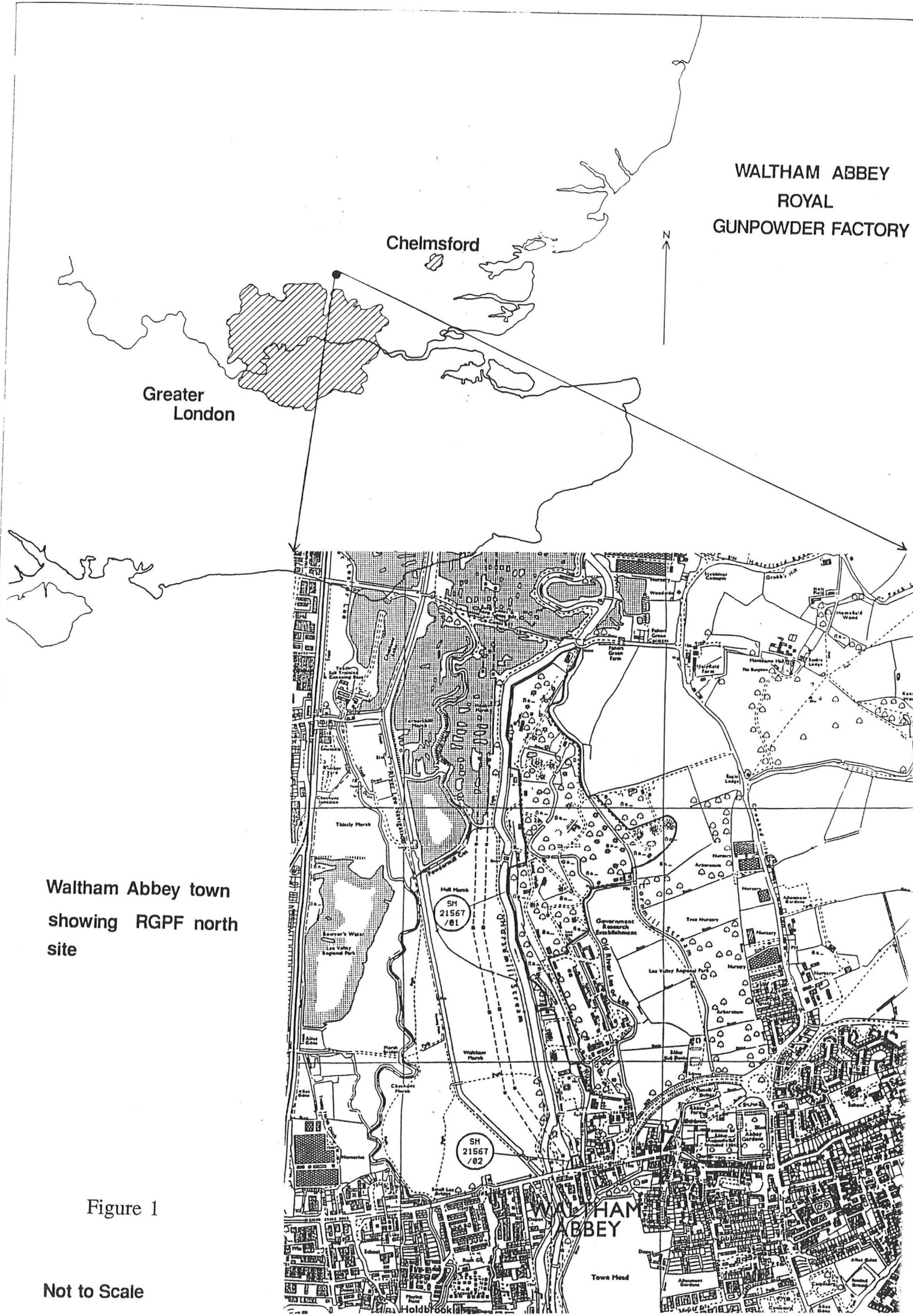
***ARCHAEOLOGICAL REPORT***

***JANUARY 1995***

***SUBMITTED BY ADAM FORD  
CONSULTANT ARCHAEOLOGIST TO  
MINISTRY OF DEFENCE***

Contents.

- Site location.
  
- Area location.
  
- Site history.
  
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- Recent Developments and Archaeology.
  
- References.
  
- Appendix A.



**WALTHAM ABBEY  
ROYAL  
GUNPOWDER FACTORY**

Chelmsford

Greater London



Waltham Abbey town  
showing RGPF north  
site

Figure 1

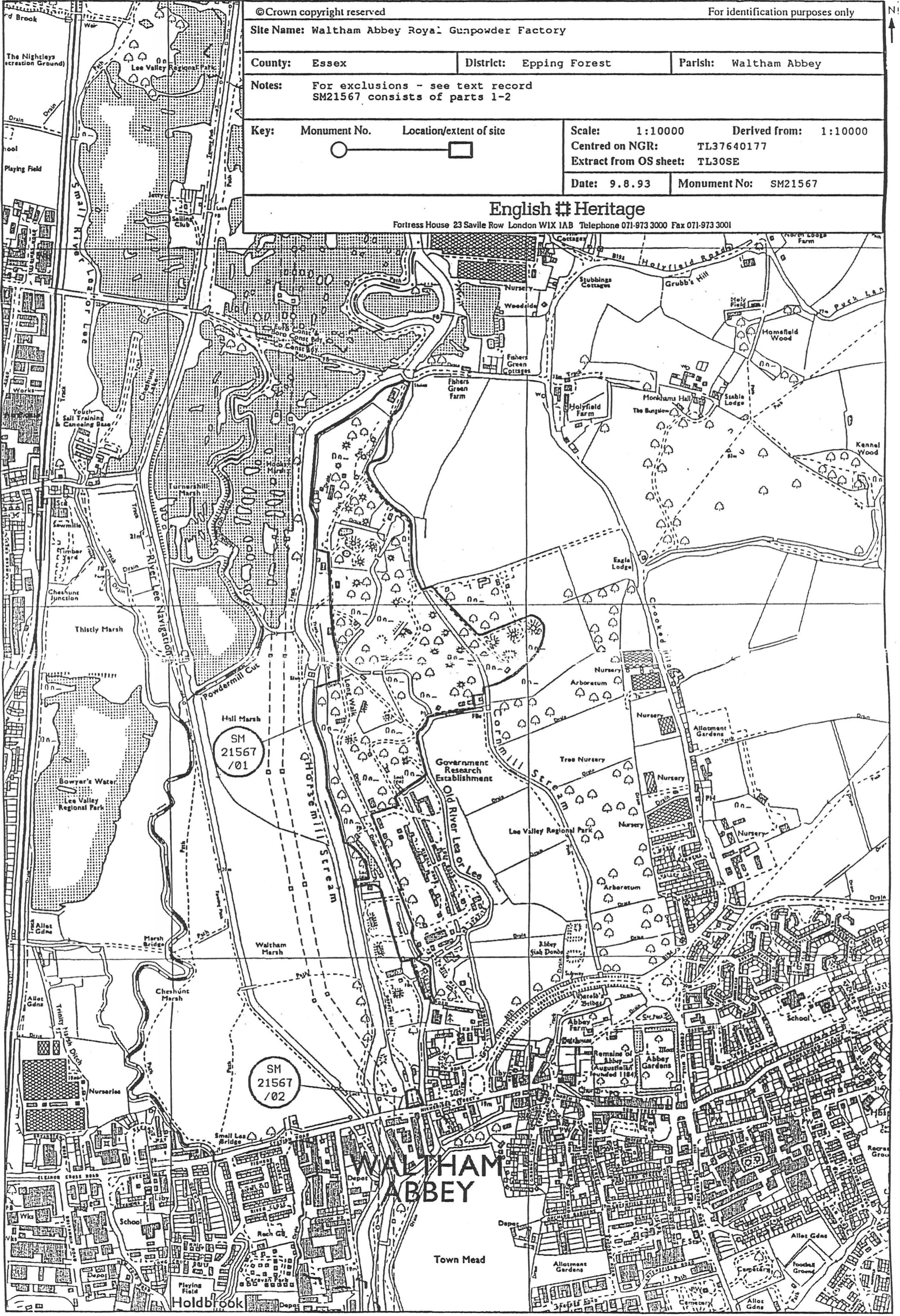
Not to Scale

WALTHAM ABBEY

Town Head

# Scheduling Proposal

Figure 2



© Crown copyright reserved		For identification purposes only	
Site Name: Waltham Abbey Royal Gunpowder Factory			
County: Essex	District: Epping Forest	Parish: Waltham Abbey	
Notes: For exclusions - see text record SM21567 consists of parts 1-2			
Key: Monument No.	Location/extent of site	Scale: 1:10000	Derived from: 1:10000
		Centred on NGR: TL37640177	
		Extract from OS sheet: TL30SE	
		Date: 9.8.93	Monument No: SM21567

## English Heritage

Fortress House 23 Savile Row London W1X 1AB Telephone 071-973 3000 Fax 071-973 3001

## SITE LOCATION

County	-	Essex
District	-	Epping Forest
Parish	-	Waltham Abbey

### National Grid Reference.

Waltham Abbey Royal Gunpowder Factory  
(North Site) (TL30SE) TL376 015

The Waltham Abbey Royal Gunpowder Factory, more recently known as the Ministry of Defence's Royal Armaments Research and Development Establishment (RARDE) is located immediately to the North of the historic Essex town of Waltham Abbey.

The North Site stretches for nearly two kilometres from Highbridge Street north/south along the Lea Valley to Fishers Green in the north. The perimeter fence encompasses almost 75 hectares (190 acres). The factory is bounded on three sides by waterways; the Horsemill Stream to the north and west and by the Cornmill Stream and Old River Lea to the east.

The Lower Island and South Site will not be covered in this report.

The surface geology is mixed river gravels overlying London clay.

The topography of the site has changed considerably over the last 300 years. Originally the land, excluding the New Hill area, was water meadow. As the factory developed, so the area was partially drained by ditches and canals and traversed by raised causeways and the higher level water system. The nature of explosive process buildings, generally surrounded by earth blast mounds, has also

given the site a dynamic appearance. The woodland which covers just over half the site is a product of the manufacture of gunpowder. Alder, Willow and Black Dog Wood (Alder Buckthorn) plantations were set and coppiced creating an on site supply of wood for charcoal, one of the three ingredients of gunpowder.

Report Area Location.

National Grid Reference TL 37800 01900.

Area N or New Hill was the latest addition to the Waltham Abbey RGPF site.

The area is bounded to the north, east and south by the site security fencing and to the west by the Cornmill Stream.

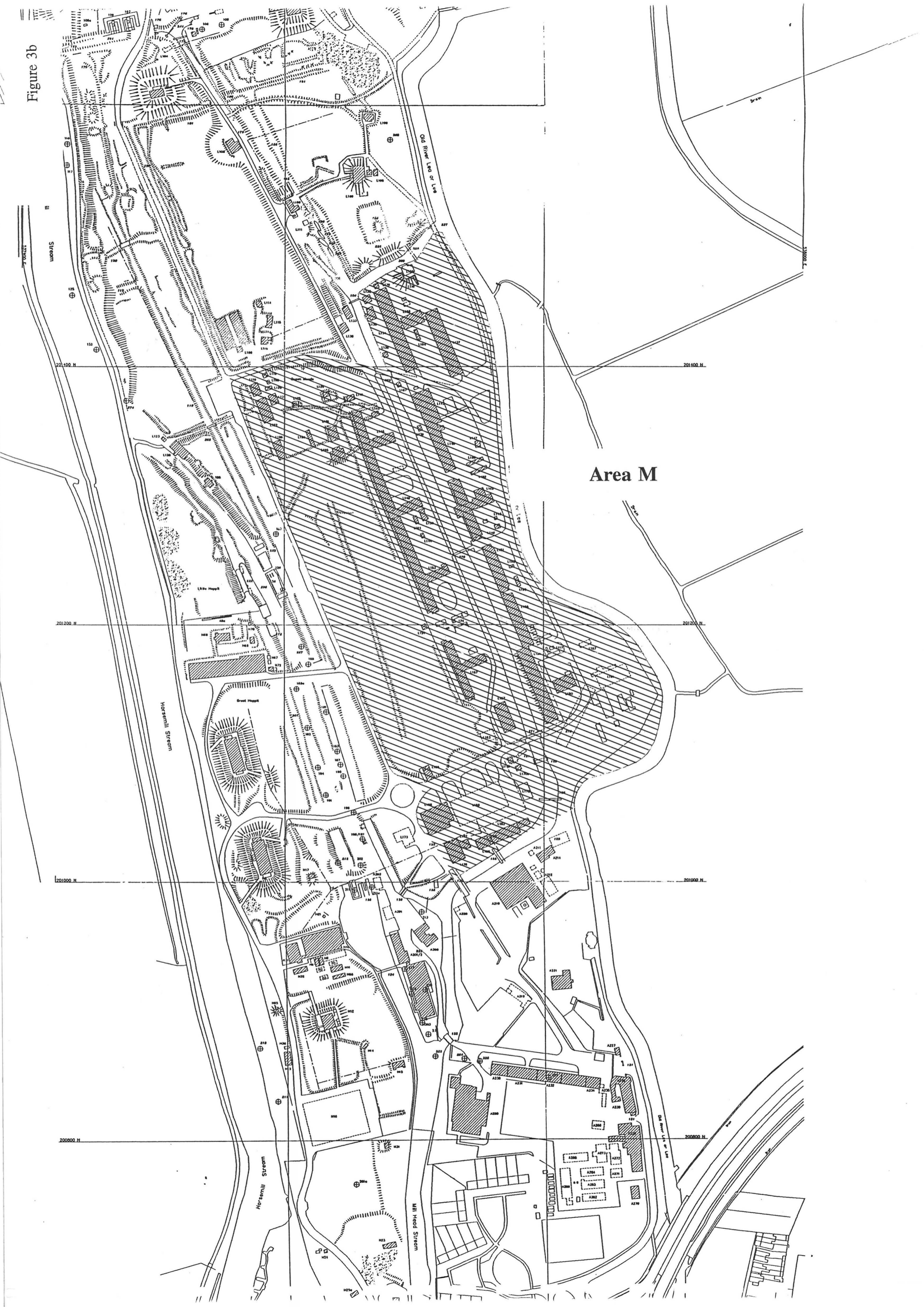
The only access to the main site is by Bridge 11 or by exiting via Crooked Mile to the east and driving south towards Waltham Abbey and through the main site gates. (Please see figures 3a and 3b).

Figure 3a





Figure 3b



## A BRIEF HISTORY OF THE ROYAL GUNPOWDER FACTORY,

### WALTHAM ABBEY 1665 - 1994.

The Royal Gunpowder Factory has been involved in the research and manufacture of explosives for over 300 years. Initially producing Gunpowder, the site then developed to manufacture chemical based explosives and propellants and finally experimental development of explosive materials after the Second World War.

The first documented references to gunpowder production on the site came from two sources. One is a contract between Ralph Hudson a sub-tenant of the Waltham Mills, and the government, for the supply of gunpowder. The other is the first recorded death in the parish caused by an explosion within a mill, both date to 1665.

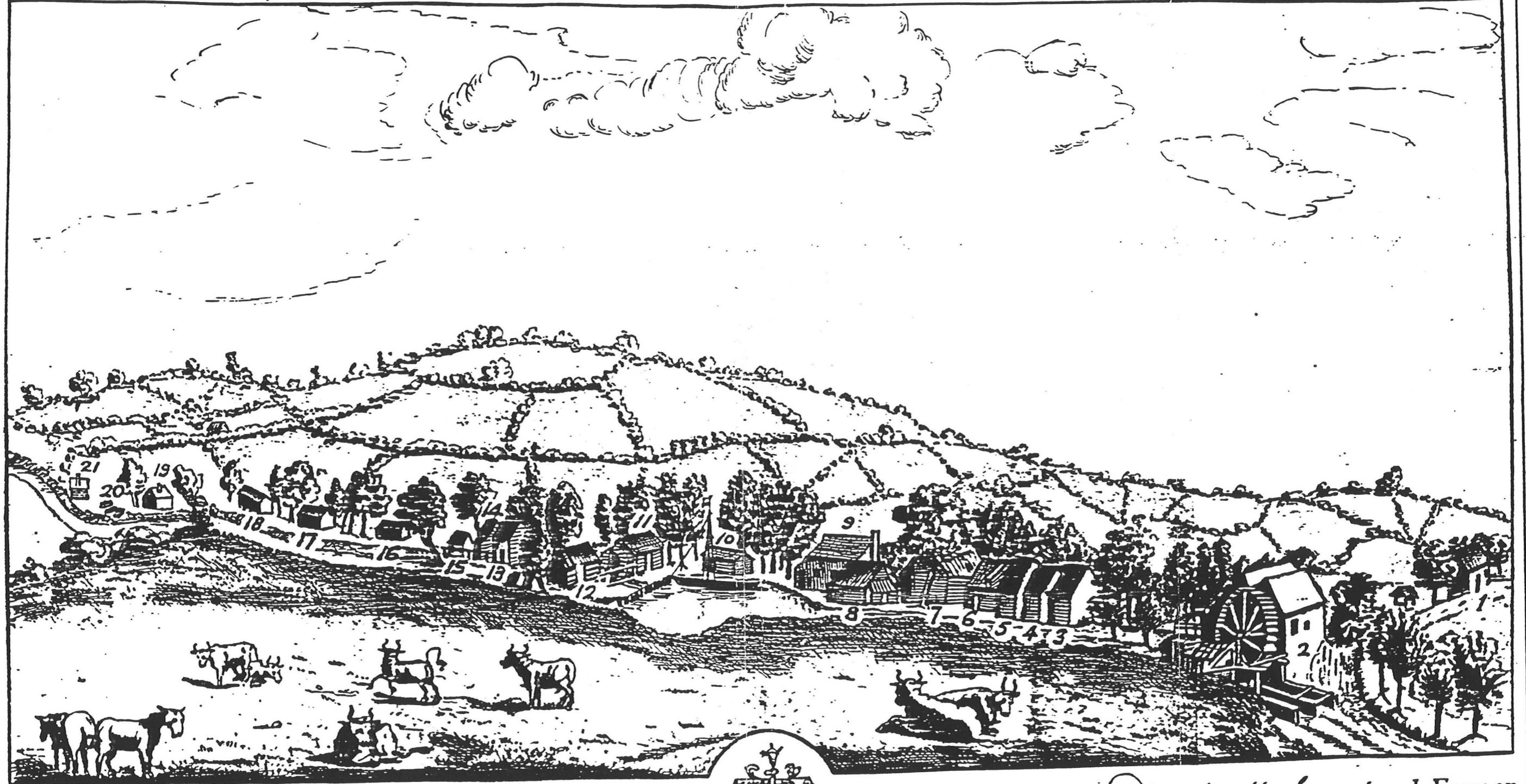
The early factory, based around a former fulling mill, probably situated to the south of the island site, quickly expanded to form the well established works depicted on the engraving by Farmer in 1735 (figure 4). The site continued to develop and became one of the principle suppliers of gunpowder to the Board of Ordnance. In the second half of the Eighteenth Century the Board became concerned about the quality, quantity and reliability of the black powder produced by these private firms. So much so that in 1759 the government purchased the Home Works at Faversham, the first Royal Gunpowder Factory. Later in 1787 they purchased the Waltham Abbey works. Almost immediately after, the demand for powder rose as a repercussion of the French Revolution and later the Napoleonic Wars. There was major expansion and investment including the development of the lower island site, a narrow strip of land to the south of the original site. In sharp contrast the first half of the Nineteenth Century, between 1820 and 1840 saw little new development.

This period of relative inactivity did not last, by the second half of the

- 1. A Horse Mill
- 2. The Corning and Glazing Engine
- 3. } Three Horse Mills
- 4. }
- 5. }
- 6. The Stables
- 7. The Coal Mill and Composition House

- 8. The Carpenters and Mill-wrights work house
- 9. The Clerks Counting house and the Watch house
- 10. The Loading house
- 11. } Two Stamping Mills
- 12. }
- 13. } Two Dumb Mills
- 14. }

- 15. The Charging house
- 16. The old Composition house
- 17. The Store house
- 18. The Dusting house
- 19. The Little Store
- 20. Three Sun Stoves, or drying Leads
- 21. The great Store



To John Walton Esq. Proprietor of these Mills this Plate is  humbly dedicated by his Obedient humble Servant J. Farmer.  
*Jas. Munds. Sculp.*

R. West. delin. 1735

GENERAL VIEW OF THE FACTORY IN 1735  
 (FROM FARMERS "HISTORY")

From Simmons W.H. 1963.

century the demand for cannon powders for larger guns and for moulded powders in greater quantities resulted in rapid changes and innovations.

It was also in the latter half of the Nineteenth Century that tentative production of the new chemical explosive, Guncotton, took place. Manufacture of the new liquid explosive Nitroglycerine soon followed and by the last decade of the Nineteenth Century, Cordite, a mixture of guncotton (Nitrocellulose) and nitroglycerine was in production. Cordite was such a successful explosive, it quickly became the main service propellant and by 1900 the majority of the old gunpowder buildings on site were converted to make cordite.

At the same time as the shift to chemical based explosives the works expanded south with the purchase of the Quinton Hill works in the 1880's now known as South Site.

Initially the South Site consisted of a guncotton factory but nitroglycerine and cordite production areas followed shortly afterward.

Back on the North Site an acid factory and nitroglycerine facility were built in 1890's. The wet guncotton was produced on the south site and barged up to the grand magazine where it was stored. Then it was moved down the site, north to south, from drying to mixing and pressing, finally resting at H12 the cordite reel magazine.

The First and Second World Wars naturally saw peaks in production and investment into the site. During the First World War the labour force rose to 5000 its greatest number, over half were women, working shifts to ensure continuous production.

A number of high explosive products were made at the RGPF even though the site was never a high explosive plant. Picric acid was produced in the 1870's and 1890's and later around 1910 tetryl (C.E or Composition Exploding) was produced. Between the Wars important research was carried out on the safe and efficient production of TNT and RDX.

The sites proximity to urban areas and the continent forced its closure as a production site in 1943 in favour of the new purpose built Ordnance sites in Scotland and the North West of England.

The site reopened in 1945 after the war as a government research establishment, initially set up to research into liquid fuels for rockets and other applications. A plant was also constructed to develop plastic propellants for use in rocket motors. Over the next 30 years research into propellants, plastic and rubber propellants, polymers, properties of high explosives and many other aspects of energetic and inert materials, took place on North and South Site.

By the 1960's Waltham Abbey was the sole government laboratory carrying out research on non nuclear explosives of every kind.

Many of the old cordite and gunpowder buildings were used as laboratories also some of the test beds were converted Nineteenth Century process buildings. A number of purpose built test beds were also constructed.

The site finally closed in June 1991 after 204 years of government service. Since 1992 a programme of decontamination and remediation has been carried out with the aim of putting the site to beneficial reuse in the public sector.

## BRIEF HISTORY OF NEW HILL NITROGLYCERINE FACTORY.

During the first half of 1940 two disastrous explosions occurred in Mixing Houses 46 and 63 in Area E. As well as killing a number of workers they caused widespread damage to other buildings over a large area including the Nitroglycerine (NG) plant E2. Although production was not stopped it was decided to build a second NG plant to act as a back up. The area now known as New Hill was purchased and the sites second NG factory was constructed in the late 1940 early 1941.

From information of former employees of the North Site it appears that although the plant was finished in early 1941 it never became operational due to technical problems.

The whole site closed in 1943 as mentioned in the previous section and when it reopened after the War as an experimental establishment the buildings in N Area were converted to laboratories and proof stands.

## RECENT DEVELOPMENT AND ARCHAEOLOGY.

As the general trend of the decontamination exercise is to work south to north, little work to date has been carried out within the New Hill area.

The decontamination of the main process buildings is a low priority as they never actually produced Nitroglycerine (NG) and proofing of explosives leaves no residual contamination.

The other structures to the north such as S5 and S10 which were converted to laboratories after the War have yet to be investigated in detail.

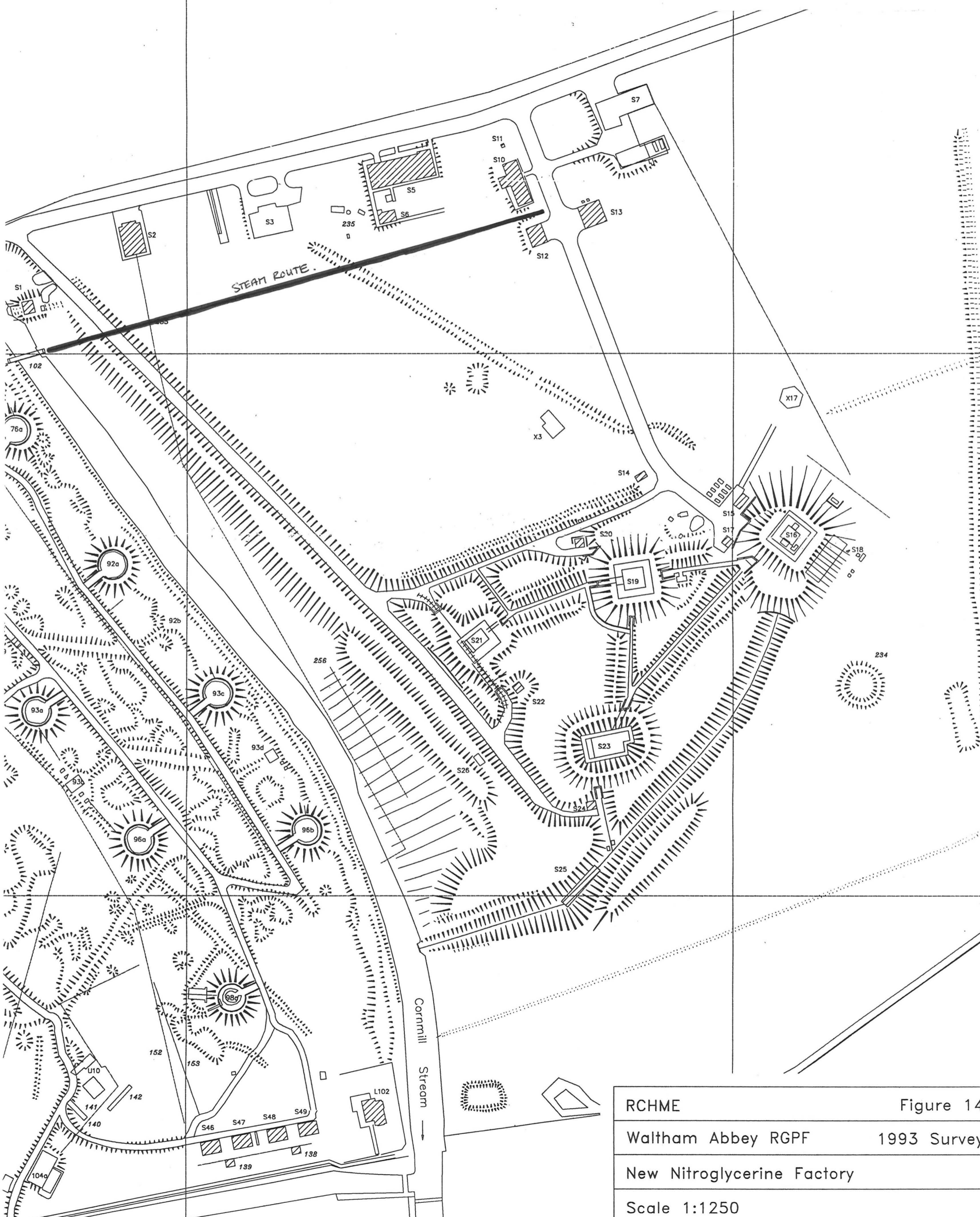
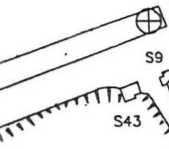
To the east of S7 clay has been extracted for use around the rest of the site. The ground works have been monitored periodically, but no archaeological features or artifacts have been uncovered.

In 1993 the ground below a steam route which travelled from Bridge RCHM102 to S12 (see figure 5) was excavated in an attempt to remove the asbestos contaminated soil. This exercise was experimental and was very destructive to the natural components on site. A broad swathe approximately 4m across and 0.5m deep was excavated through a young woodland, follow up sampling still revealed asbestos in the surrounding soil and in the base of the excavation.

This technique was not repeated. Apart from a scrape of a steam route to the south of S23 and the test pitting of the mounds, no other decontamination work has taken place within the area.

In early 1994 the security hut S9 and the breeze block pill box opposite S43 were demolished.

Figure 5



RCHME	Figure 14
Waltham Abbey RGPF	1993 Survey
New Nitroglycerine Factory	
Scale 1:1250	



References.

1994 Royal Commission on the Historical Monuments of England, Keele office. Synthesis report and component sheets of the 1993 RCHME Field Survey of Waltham Abbey Royal Gunpowder Factory.

1994 Carden and Godfrey, Condition Survey of Waltham Abbey RARDE (North Site).

**APPENDIX A.**

**ROYAL COMMISSION ON THE HISTORICAL  
MONUMENTS OF ENGLAND.**

**BUILDING COMPONENT SHEETS REFERRING TO  
NEW HILL (AREA N).**

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THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY			
NUMBER S1	OLD SERIES	RCHME NUMBER	N.G.R. TL 37742 02014
NAME/FUNCTION Pump House		START DATE 1941	END DATE
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION		DOCUMENTARY REFERENCES	
> 1940	WASC 900/91A	Plans;	
1954	A - B.34	S1	B02,B03 ; Plans and Elevations 1941
c1960	WASC 900/94 ; S1		
c1963	WASC 900/97 ; S1		
1972	WASC 900/102 ; S1	1972	ERDE List ; Pump House
1972	WASC 900/104 ; S1	1991	Mott McDonald survey ; Pump House
1976	WASC 900/113 ; S1	1992	RARDE List ; Pump House
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/N/5 From North East 206/N/6 Detail of pipes West of S1 from North	
RELATIONSHIPS WITH OTHER MONUMENTS			
ASSOCIATED WITH: New Hill Nitroglycerine factory			
CONDITION		Fair	
DESCRIPTION			
1)	CONSTRUCTIONAL MATERIAL Brick in English bond		
2)	ROOF MATERIALS AND STRUCTURE Flat concrete slab with felt covering		
3)	POWER SOURCE Steam and Electricity		
4)	DIMENSIONS i) L 4.64 ii) W 4.07 iii) HT 3.25		
5)	The building has a single door on the eastern wall. About 5m to the west of the building five pipes diameter 64mm dip into the Cornmill Stream. The pipes have flanged heads and formerly connected to a machine set on a concrete base within the pump house, the mounting bolts from which remain. To the East is a small concrete pit with pipe work.		

# THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S2	OLD SERIES 24/145	RCHME NUMBER	N.G.R. TL 37780 02044
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NAME/FUNCTION Electrical Sub Station	START DATE 1941	END DATE 198?
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NO PHOTOGRAPHY  
AVAILABLE

<p>CARTOGRAPHIC DEPICTION</p> <p>&gt; 1940    WASC 900/91A          1954    A - B.34          c1960    WASC 900/94 ; S2          c1963    WASC 900/97 ; S2          1972    WASC 900/102 ; S2          1972    WASC 900/104 ; S2          1976    WASC 900/113 ; S2</p>	<p>DOCUMENTARY REFERENCES</p> <p>Plans;          S2    B01,B02 ; General Plans 1941</p> <p>1972    ERDE List ; Electrical Sub Station          1991    Mott McDonald survey ; Electrical Sub Station          1992    RARDE List ; Electrical Sub Station          1992    FBRC Transformer House</p>
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<p>PHOTOGRAPHY HISTORIC</p>	<p>PHOTOGRAPHY RCHME</p> <p>1) 206/D/1 From North West          206/D/12 Interior Control room          206/D/13 Interior Control room</p> <p>2) BB92/26152 Interior of West room from South West          BB92/26153 Interior of East room from South East          BB92/26154 North East room from North West</p>
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RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH: New Hill Nitroglycerine Factory

CONDITION    Fair

DESCRIPTION

1)    CONSTRUCTIONAL MATERIAL  
       Brick

      ROOF MATERIALS AND STRUCTURE  
       Concrete

3)    POWER SOURCE  
       Electricity

4)    DIMENSIONS    i) L 11.85    ii) W 8.01    iii) HT 3.48

5)    The building is a single storey structure. To the north are two open bays screened by a brick wall within, each of these bays is a transformer. Each transformer has a makers plate that reads 'The British Thomso-Houston Co Ltd Rugby Manu 1941 250 KV'. The building was entered through two single doors on the west wall that gave access into two switch rooms. Both the switch rooms retain all their original equipment.

      Historic artefacts - switch rooms and transformers, salvage some/all the equipment, makers plates. Seal and mothball?

**THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY**

NUMBER S3	OLD SERIES 24/103	RCHME NUMBER	N.G.R. TL 37830 02050
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NAME/FUNCTION Store/Small Scale Trial House	START DATE 1941	END DATE 197? (demolished)
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NO PHOTOGRAPHY  
AVAILABLE

<p>CARTOGRAPHIC DEPICTION</p> <p>&gt; 1940 WASC 900/91A          1954 A - B.34          c1960 WASC 900/94 ; 24/103          c1963 WASC 900/97 ; S3          1972 WASC 900/102 ; S3          1972 WASC 900/104 ; S3          1976 WASC 900/113 ; S3</p>	<p>DOCUMENTARY REFERENCES</p> <p>Plans          S3 B01 - B07 ; Plan and Elevations 1941 to 1957</p> <p>1972 ERDE List ; Demolished Store          1991 Mott McDonald survey ; Small Scale Trials House          1992 RARDE List ; Demolished Store</p>
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PHOTOGRAPHY HISTORIC	PHOTOGRAPHY RCHME 1) 206/D/2 From North West
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RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH:

CONDITION Demolished

DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Brick
- 3) POWER SOURCE  
Electricity
- 4) DIMENSIONS i) L 14.6 ii) W 9.2
- 5) The building has been demolished a concrete slab remains, a former porch may be discerned on the north side.

**THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY**

NUMBER S5	OLD SERIES 24/129	RCHME NUMBER	N.G.R. TL 37880 02064
NAME/FUNCTION Charge Machinery Block Process Building		START DATE 1941 1958?	END DATE 1958? 198?

NO PHOTOGRAPHY  
AVAILABLE

<p>CARTOGRAPHIC DEPICTION</p> <p>&gt; 1940 WASC 900/91A 1954 A - B.34 c1960 WASC 900/94 ; 24/129 c1963 WASC 900/97 ; S5 1972 WASC 900/102 ; S5 1972 WASC 900/104 ; S5 1976 WASC 900/113 ; S5</p>	<p>DOCUMENTARY REFERENCES</p> <p>Plans; S5 B01 -B15 ; Plans and Elevations 1940 to 1959</p> <p>1972 ERDE List ; Charge Macinery Block 1991 Mott McDonald survey ; Charge Machining Block 1992 RARDE List ; Charge Machinery Block</p> <p>1992 FBRC ; Metal Store</p>
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PHOTOGRAPHY HISTORIC	PHOTOGRAPHY RCHME 1) 206/D/4 From North West
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RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH: S6

CONDITION Poor

DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Brick
- 2) ROOF MATERIALS AND STRUCTURE  
Concrete slab covered in felt
- 3) POWER SOURCE  
Steam, Electricity
- 4) DIMENSIONS i) L 23.88 ii) W 9.81 iii) HT 3.4
- 5) The building is a single storey structure. Two principal building phases were recognised. On the western and eastern elevations is a single door and a window. Along the northern wall a timber framed corridor covered by asbestos has been added. The single and double doors on this wall are protected by toe boards to delineate dirty and clean areas. the interior of the building appears most recently to have been used as workshops and laboratories. Uses include a Casting room, Pressing bay, Incorporator, 1 +2 Ball and Casting room and Drill room and associated switch rooms.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S6	OLD SERIES 24/137	RCHME NUMBER	N.G.R. TL 37872 02051
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NAME/FUNCTION Lavatories Magazine	START DATE 1941 195?	END DATE 198?
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NO PHOTOGRAPHY  
AVAILABLE

### CARTOGRAPHIC DEPICTION

> 1940 WASC 900/91A  
 1954 A - B.34  
 c1960 WASC 900/94 ; 24/137  
 c1963 WASC 900/97 ; S6  
 1972 WASC 900/102 ; S6  
 1972 WASC 900/104 ; S6  
 1976 WASC 900/113 ; S6

### DOCUMENTARY REFERENCES

Plans;  
 S6 B01 - 29/1/41 ; Architectural Details of Units  
  
 1972 ERDE List ; Magazine  
 1991 Mott McDonald survey ; Magazine  
 1992 RARDE List ; Magazine

### PHOTOGRAPHY HISTORIC

PHOTOGRAPHY  
 RCHME  
 1) 206/D/3 From North West

### RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH: S5

CONDITION Fair

### DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Brick in English Bond
- 2) ROOF MATERIALS AND STRUCTURE  
Concrete slab at two heights
- 3) POWER SOURCE  
Steam and Electricity
- 4) DIMENSIONS i) L 5.1 ii) W 6.37 iii) HT 3.0
- 5) To the North a door in an outshot gives access into the magazine the dirty and clean areas delimited by a toaboard at the threshold. Inside are four open fronted lockers. The South elevation is blank and on the West are two doors. To the East are another two doors one of which is blocked. The building was formerly protected by a screen wall.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S7	OLD SERIES 24/101	RCHME NUMBER	N.G.R. TL 37960 02093
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NAME/FUNCTION Store ( Nitromethane Store)	START DATE 1941	END DATE
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NO PHOTOGRAPHY  
AVAILABLE

### CARTOGRAPHIC DEPICTION

> 1940	WASC 900/91A
1954	A - B.34
c1960	WASC 900/94 ; 24/101
c1963	WASC 900/97 ; S7
1972	WASC 900/102 ; S7
1972	WASC 900/104 ; S7
1976	WASC 900/113 ; S7

### DOCUMENTARY REFERENCES

Plans;	
S7	B01 - B05 ; Plans and Elevations 1940 to 1941
1972	ERDE List ; Demolished Store only Base Remains
1991	Mott McDonald survey ; Nitromethane Store
1992	RARDE List ; Demolished Store

### PHOTOGRAPHY HISTORIC

### PHOTOGRAPHY RCHME

1) 206/D/9 From North East

### RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH:

CONDITION      Demolished

### DESCRIPTION

- 1)      CONSTRUCTIONAL MATERIAL  
        Concrete
  
- 4)      DIMENSIONS i) L 21.3 ii) W 11.3
  
- 5)      The building has been demolished a concrete slab remains



## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER  
S9

OLD SERIES

RCHME NUMBER

N.G.R.  
TL 38096 02145

NAME/FUNCTION  
Police Gate House

START DATE  
1941

END DATE

NO PHOTOGRAPHY  
AVAILABLE

### CARTOGRAPHIC DEPICTION

> 1940 WASC 900/91A  
1954 A - B.34  
c1960 WASC 900/94  
c1963 WASC 900/97 ; S9  
1972 WASC 900/102 ; S9  
1972 WASC 900/104 ; S9  
1976 WASC 900/113 ; S9

### DOCUMENTARY REFERENCES

Plan;  
S9 B01 ; 16/8/1941 ; Temporary Police Hut  
  
1972 ERDE List ; Police Gate House  
1991 Mott McDonald survey ; New Hill Gate  
1992 RARDE List ; Police Gate House

PHOTOGRAPHY  
HISTORIC

PHOTOGRAPHY  
RCHME  
1) 206/D/10 From North West

### RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH: S42, S43

CONDITION Fair

### DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Asbestos sheet over wooden frame
- 2) ROOF MATERIALS AND STRUCTURE  
Wood with Felt covering
- 3) POWER SOURCE  
Electricity
- 4) DIMENSIONS i) L 3.9 ii) W 2.0
- 5) The North East and North West elevations have windows in the angles. To the West is a door and porch and to the South another window. The interior consists of two rooms.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S10	OLD SERIES 24/128	RCHME NUMBER	N.G.R. TL 37920 02064
NAME/FUNCTION Dark Room & Office Block		START DATE 1941	END DATE 198?
NO PHOTOGRAPHY AVAILABLE			
<b>CARTOGRAPHIC DEPICTION</b>  > 1940    WASC 900/91A 1954    A - B.34 c1960    WASC 900/94 ; 24/128 c1963    WASC 900/97 ; S10 1972    WASC 900/102 ; S10 1972    WASC 900/104 ; S10 1976    WASC 900/113 ; S10		<b>DOCUMENTARY REFERENCES</b>  Plans; S10    B01 - B03 ; Plans and Elevations 1940 to 1965  1972    ERDE List ; Dark Room and Office Block 1991    Mott McDonald survey ; Dark Room and Office Block  1992    RARDE List ; Dark Room and Office Block 1992    FBRC Laboratory	
<b>PHOTOGRAPHY HISTORIC</b>		<b>PHOTOGRAPHY RCHME</b> 1) 206/D/6 from North East	
<b>RELATIONSHIPS WITH OTHER MONUMENTS</b>  ASSOCIATED WITH:			
<b>CONDITION</b> Fair			
<b>DESCRIPTION</b> 1) <b>CONSTRUCTIONAL MATERIAL</b> Brick  2) <b>ROOF MATERIALS AND STRUCTURE</b> Flat concrete slab with felt covering  3) <b>POWER SOURCE</b> Electricity  4) <b>DIMENSIONS</b> i) L 16.45 ii) W 5.29 iii) HT 2.88  5)    The eastern elevation originally comprised a recessed central door flanked by two metal windows with tile sills. The northern elevation has a single window, the west side has two windows and an external toilet. A small extension has been added to the southern end of the building 3.93m in length. It is brick built in stretcher bond with a single door and window. Its most recent use has been as a locker and shower room. The recessed door on the eastern side gave access to a central lobby to the left was a laboratory area and to the right a darkroom. The room to the rear of the lobby was also a darkroom.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S11	OLD SERIES	RCHME NUMBER	N.G.R. 37916 02077
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NAME/FUNCTION Small Shed	START DATE 1941	END DATE 198?
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NO PHOTOGRAPHY  
AVAILABLE

<p><b>CARTOGRAPHIC DEPICTION</b></p> <p>&gt; 1940    WASC 900/91A          1954    A - B.34          c1960    WASC 900/94          c1963    WASC 900/97 ; S11          1972    WASC 900/102 ; S11          1972    WASC 900/104 ; S11          1976    WASC 900/113 ; S11</p>	<p><b>DOCUMENTARY REFERENCES</b></p> <p>Plan;          S11    Bo1 - 14/5/1940 ; Structural Details</p> <p>1972    ERDE List ; Small Shed          1991    Mott McDonald survey ; Transmitting                    Equipment          1992    RARDE List ; Small Shed</p>
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<p><b>PHOTOGRAPHY HISTORIC</b></p>	<p><b>PHOTOGRAPHY RCHME</b>          1) 206/D/5 From North West</p>
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**RELATIONSHIPS WITH OTHER MONUMENTS**

ASSOCIATED WITH:

**CONDITION**      Poor

**DESCRIPTION**

- 1)      **CONSTRUCTIONAL MATERIAL**  
       Hardboard over Timber Frame
  
- 2)      **ROOF MATERIALS AND STRUCTURE**  
       Flat Asbestos sheeting
  
- 3)      **POWER SOURCE**  
       Electricity
  
- 4)      **DIMENSIONS** i) L 1.25 ii) W 1.18 iii) HT 2.15
  
- 5)      small shed with a single door on the northern side, inside the shed is Radio Telephone equipment  
       Historic artefacts - Radio equipment

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S12	OLD SERIES 24/135	RCHME NUMBER	N.G.R. TL 37928 02044
NAME/FUNCTION Chemical Store		START DATE 1941	END DATE 198?
NO PHOTOGRAPHY AVAILABLE			
<b>CARTOGRAPHIC DEPICTION</b>  > 1940    WASC 900/91A 1954    A - B.34 c1960    WASC 900/94 ; 24/135 c1963    WASC 900/97 ; S12 1972    WASC 900/102 ; S12 1972    WASC 900/104 ; S12 1976    WASC 900/113 ; S12		<b>DOCUMENTARY REFERENCES</b>  Plans; S12    B01,B02 ; Plan and Elevations 1941  1972    ERDE List ; Chemical Store 1991    Mott McDonald survey ; Lab,Hose and Reel House and Store 1992    RARDE List ; Chemical Store 1992    FBRC Laboratory	
<b>PHOTOGRAPHY HISTORIC</b>		<b>PHOTOGRAPHY RCHME</b> 1) 206/D/7 From North East	
<b>RELATIONSHIPS WITH OTHER MONUMENTS</b>  ASSOCIATED WITH: S13			
<b>CONDITION</b> Good			
<b>DESCRIPTION</b> 1) <b>CONSTRUCTIONAL MATERIAL</b> Brick in English bond  2) <b>ROOF MATERIALS AND STRUCTURE</b> Flat concrete slab with felt covering  3) <b>POWER SOURCE</b> Steam and Electricity  4) <b>DIMENSIONS</b> i) L 7.18 ii) W 5.9 iii) HT 3.12  5)    To the east two sets of double doors give access into two bays. To the north a single door gives access into a rear room.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S13	OLD SERIES	RCHME NUMBER	N.G.R. TL 37947 02052
NAME/FUNCTION Store	START DATE 1940	END DATE 198?	
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 c1963     WASC 900/97 ; S13 1972      WASC 900/102 ; S13 1972      WASC 900/104 ; S13 1976      WASC 900/113 ; S13		DOCUMENTARY REFERENCES  Plans; S13      B01,B02 ; Plans and Elevations 1941  1972      ERDE List ; Store 1991      Mott McDonald survey ; Detonation 1992      RARDE List ; Store	
PHOTOGRAPHY HISTORIC  PRO Supply 5/863 August 1940 342 As built		PHOTOGRAPHY RCHME 1) 206/D/8 From North west	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S12			
CONDITION      Good			
DESCRIPTION 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Flat concrete slabs over two RSJ's  3)      POWER SOURCE Electricity  4)      DIMENSIONS    i) L 8.33    ii) W 5.2  5)      The West elevation has a single door and a double roll door. The interior has a crane with RSJ runners above a Parquet floor.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S14	OLD SERIES	RCHME NUMBER	N.G.R. TL 37969 01953
NAME/FUNCTION Solex Fuel Store		START DATE 1941	END DATE 198?
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  1976      WASC 900/113 ; S14		DOCUMENTARY REFERENCES  Plan; S14      B01 - 8/9/75 ; Rehab of S14 Providing Day Expence Mag.  1991      Mott McDonald survey ; Solex Fuel Store 1992      RARDE List ; Solex Fuel Store	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/9 From South	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S16?			
CONDITION      Fair			
DESCRIPTION 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Flat concrete slab  4)      DIMENSIONS    i) L 4.1    ii) W 2.31    iii) HT 2.2  5)      The entrance to the building is from the South. The interior has two cubicles to the East and a Urinal. One of the doors has a sign which reads 'corrosive Acids'.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S15	OLD SERIES	RCHME NUMBER	N.G.R. TL 38002 01947
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NAME/FUNCTION Plenum Heater House Control Room & Firing Point (S16)	START DATE 1941	END DATE 198?
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NO PHOTOGRAPHY  
AVAILABLE

### CARTOGRAPHIC DEPICTION

> 1940	WASC 900/91A
1954	A - B.34
c1960	WASC 900/94 ; S15
c1963	WASC 900/97 ; S15
1972	WASC 900/102 ; S15
1972	WASC 900/104 ; S15
1976	WASC 900/113 ; S15

### DOCUMENTARY REFERENCES

Plans;	
S15	B01 - B03 ; Plans and Elevations 1940 to 1969
1972	ERDE List ; Control Room and Firing Point S16
1991	Mott McDonald survey ; Control Room
1992	RARDE List ; Control Room and Firing Point S16
1992	FBRC Control room for S16

### PHOTOGRAPHY HISTORIC

PHOTOGRAPHY  
RCHME  
1) 206/B/6 From North

### RELATIONSHIPS WITH OTHER MONUMENTS

ASSOCIATED WITH: S16

CONDITION      Fair

### DESCRIPTION

- 1)      CONSTRUCTIONAL MATERIAL  
        Brick in English bond
  
- 2)      ROOF MATERIALS AND STRUCTURE  
        Concrete slab with felt covering
  
- 3)      POWER SOURCE  
        Electricity
  
- 4)      DIMENSIONS    i) L 5.37    ii) W 2.93    iii) HT 2.8
  
- 5)      The building is single storied with a double door on the north wall. The internal switch gear has been removed.

**THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY**

NUMBER S16	OLD SERIES 24/105	RCHME NUMBER	N.G.R. TL 38020 01934
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NAME/FUNCTION Nitrating House Firing Point No 1	START DATE 1940 195?	END DATE 1945 198?
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NO PHOTOGRAPHY  
AVAILABLE

**CARTOGRAPHIC DEPICTION**

> 1940 WASC 900/91A  
 1954 A - B.34  
 c1960 WASC 900/94 ; 24/105  
 c1963 WASC 900/97 ; S16  
 1972 WASC 900/102 ; S16  
 1972 WASC 900/104 ; S16  
 1976 WASC 900/113 ; S16

**DOCUMENTARY REFERENCES**

Plans;  
 S16 B01 - B24 ; Plans and Elevations 1940 to 1975  
 1972 ERDE List ; Firing Point No.1  
 1991 Mott McDonald survey ; Firing Point No.1  
 1992 RARDE List ; Firing Point No.1  
 1992 FBRC Firing Chamber

**PHOTOGRAPHY  
HISTORIC**

PRO Supply 5/863 August 1940 331, 332, 33, 335, 336  
 Photographs of construction

**PHOTOGRAPHY  
RCHME**

- 1) 206/B/7 Entrance from North  
 206/B/17 Process Earthenware  
 206/B/18 Tower on East side with Earthenware bases  
 206/B/19 Tower on East side with Earthenware bases
- 2) BB92/26135 Detail of Earthenware fragment  
 BB92/26136 Nitrator view from East  
 BB92/26148 Interior  
 BB92/26351 S16 Drawing S.16.B.12 Details of Support to Fume pipe 4.Mar.1941 (MOD Chessington)  
 BB92/26368 S16 Drawing S16.B.18 Pipework General Arrangement (MOD Chessington)

**RELATIONSHIPS WITH OTHER MONUMENTS**

ASSOCIATED WITH: S14?, S15, S19, S23 consists of: S18

CONDITION Fair



DESCRIPTION

1) CONSTRUCTIONAL MATERIAL  
Brick Earthwork

2) ROOF MATERIALS AND STRUCTURE  
Concrete formerly attached to bolts around the top

3) POWER SOURCE  
Electricity

4) DIMENSIONS i)INT L 10.0 ii)INT W 9.8

5) S16 was originally constructed as nitrating house during the second world war. It is however believed that it was never used for this purpose. The structure was subsequently converted to firing point.

The interior of the structure was protected by slightly battered concrete walls surrounded by an earthen traverse. It was entered from the north through a curving tunnel. To the south a straight exit tunnel formerly enclosed channels to S19 The Washing House, S23 the Wash Water Settling House and S25 The Flume House. On the southern side of the mound a raised concrete platform S18 formerly supported a timber framed building and tanks.

Subsequent to its conversion to a firing point a gantry 4.65m by 4.63m and 2.85m in height has been constructed. The straight tunnel to west has been partly blocked by breeze blocks and a breeze block structure built at the end. Around the top, of the firing point has been fenced protecting a walkway with timber decking. On the east side of the mound are two brick pillars supporting a concrete slab covered in asphalt. This platform formerly supported two pottery towers, the bases adhering to the platform are 1m in diameter. At the base of this structure is a pile of broken process earthenware.

Historic artefacts - Fume Piipe earthenware at base of east side.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S17	OLD SERIES	RCHME NUMBER	N.G.R. TL 37998 01932
NAME/FUNCTION Expense Magazine Control Room	START DATE 1941 194?	END DATE 195? 198?	
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 c1963     WASC 900/97 ; S17 1972      WASC 900/102 ; S17 1972      WASC 900/104 ; S17 1976      WASC 900/113 ; S17		DOCUMENTARY REFERENCES  1972      ERDE List ; Expense Magazine 1991      Mott McDonald survey ; Expense Magazine 1992      RARDE List ; Expense Magazine 1992      FBRC Control room for S16	
PHOTOGRAPHY HISTORIC	PHOTOGRAPHY RCHME 1) 206/B/8 From North West		
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S16			
CONDITION      Fair			
DESCRIPTION 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Flat concrete slab  3)      POWER SOURCE Electricity  4)      DIMENSIONS i) L 3.17 ii) W 3.15 iii) HT 2.80  5)      The magazine was entered through a single door on the southwest side. The building has largely been stripped, a high shelf and some coat hooks remain on the west side.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S18	OLD SERIES	RCHME NUMBER	N.G.R. TL 38040 01923
NAME/FUNCTION Part of Nitrator S16 Compressor Room		START DATE 1940 1950	END DATE 195? 198?
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954     A - B.34 c1960    WASC 900/94 c1963    WASC 900/97 ; S18 1972     WASC 900/102 ; S18 1972     WASC 900/104 ; S18 1976     WASC 900/113 ; S18		DOCUMENTARY REFERENCES  Plans; S18     B01 - B07 ; Plan and Elevations 1940 to 1941  1972     ERDE List ; Remains of shed 1991     Mott McDonald survey 1992     RARDE List ; Remains of shed 1992     FBRC Compressor Room	
PHOTOGRAPHY HISTORIC  PRO Supply 5/863 August 1940 342		PHOTOGRAPHY RCHME 1) 206/B/15 From South 206/B/16 From South East 2) BB92/26369 S18 Drawing S18.B.02 Pipework General Arrangement 20.May.1940 (MOD Chessington)	
RELATIONSHIPS WITH OTHER MONUMENTS  PART OF: S16			
CONDITION     Fair			
DESCRIPTION 1)     CONSTRUCTIONAL MATERIAL Concrete  3)     POWER SOURCE Electricity  4)     DIMENSIONS i) L 17.29 ii) W 6.05  5)     All that remains of S18 is a raised concrete platform on the southern side of the nitrator S16. On top of the platform were two buildings set on a low concrete sills to which the timber frame was bolted. The walls were covered by asbestos sheets secured by copper nails. The whole of the platform appears to have once been covered. The original plans of the building show tanks placed on the platform ,to serve the nitrator. A photograph in PRO Supply 5/863 shows a timber building on top of the platform painted in camouflage paint.			

THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY			
NUMBER S19	OLD SERIES 24/107	RCHME NUMBER	N.G.R. TL 37964 01918
NAME/FUNCTION Washing House Firing Point No 2	START DATE 1941 195?	END DATE 1945 198?	
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940 WASC 900/91A 1954 A - B.34 c1960 WASC 900/94 ; 24/107 c1963 WASC 900/97 ; S19 1972 WASC 900/102 ; S19 1972 WASC 900/104 ; S19 1976 WASC 900/113 ; S19		DOCUMENTARY REFERENCES  Plans S19 B01 - B34 ; Plans and Elevations 1940 to 1982  1972 ERDE List ; Firing Point No.2 1991 Mott McDonald survey ; Firing Point No.2 (All.5) 1992 RARDE List ; Firing Point No.2 1992 Explosives Magazine	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/14 From top of S16 206/T/27 Looking to the South 2) BB92/26134 Nitroglycerine gutter support from South west BB92/26137 Wash house from North East BB92/26138 Wash house from North East BB92/26139 Washgutter support stanchions from North West BB92/26149 Interior from South West BB92/26348 S19 Drawing S.19.B.27 Detail of Nitroglycerine Gutter 30.Jan.1940 (MOD Chessington) BB92/26371 S19 Drawing S19.B.25 Plenum Heating arrangement or Washing House 7.Jan.1941 (MOD Chessington)	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S16, S21, S23			
CONDITION	Fair		

DESCRIPTION

1) CONSTRUCTIONAL MATERIAL  
Concrete and Earthwork

2) ROOF MATERIALS AND STRUCTURE  
Part concrete slab

3) POWER SOURCE  
Electricity

4) DIMENSIONS i) L 12.1 ii) W 12.65

5) The structure was originally built as a washing house for the nitrator S16. It is believed that the plant was never used for the production of nitroglycerine. The washing house was situated in the centre of a square earthen mound surrounded by slightly battered concrete walls. The building was entered from the north west through a curving tunnel. The wash house would have been served through a straight tunnel from S16 the nitroglycerine gutters carried on concrete stanchions between the buildings. From the wash house the contaminated water would have been channelled through a straight tunnel to the south to the wash water settling house. The nitroglycerine through a tunnel to the west to the Mixing house S21.

The structure has subsequently been converted into a firing point. This has involved the insertion of a massive armoured steel structure into the centre of the mound. The roof of the firing point covered in about 0.30m of soil. From the original northwestern entrance to the mound and the former westerly nitroglycerine tunnel access may be gained to an observation room around three sides of the chamber. Armoured glass panels allow experiments within the chamber to be observed. The tunnel on the eastern side of the mound has been blocked at its inner end where there is a pipe 0.28m in diameter containing wires. Entry into the firing point is through the former wash water tunnel from the south.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S20	OLD SERIES	RCHME NUMBER	N.G.R. TL 37945 01929
NAME/FUNCTION Plenum Heater House Control Room for S19		START DATE 1941 195?	END DATE 1945 1992
NO PHOTOGRAPHY AVAILABLE			

<p>CARTOGRAPHIC DEPICTION</p> <p>&gt; 1940    WASC 900/91A          1954    A - B.34          c1960    WASC 900/94          c1963    WASC 900/97 ; S20          1972    WASC 900/102 ; S20          1972    WASC 900/104 ; S20          1976    WASC 900/113 ; S20</p>	<p>DOCUMENTARY REFERENCES</p> <p>1972    ERDE List ; Control Room for S19          1991    Mott McDonald survey ; Control Room for S19                    (All.5)          1992    RARDE List ; Control Room for S19</p>
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<p>PHOTOGRAPHY HISTORIC</p>	<p>PHOTOGRAPHY RCHME 1) 206/B/11 From West with entrance to S19</p>
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<p>RELATIONSHIPS WITH OTHER MONUMENTS</p> <p>ASSOCIATED WITH: S19</p>
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<p>CONDITION    Fair</p>
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<p>DESCRIPTION</p> <ol style="list-style-type: none"> <li>1)    CONSTRUCTIONAL MATERIAL       Brick English Bond</li>   <li>2)    ROOF MATERIALS AND STRUCTURE       Flat Concrete slab</li>   <li>3)    POWER SOURCE       Electricity</li>   <li>4)    DIMENSIONS i) L 3.15 ii) W 3.14    iii) HT 2.6</li>   <li>5)    The building is a single storey structure with a single door on the west side. Inside the building is a wash basin and fuse boxes. on the southern external wall are switch boxes for S19 and S20.</li> </ol>
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THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY			
NUMBER S21	OLD SERIES 24/110	RCHME NUMBER	N.G.R. TL 37906 01896
NAME/FUNCTION Mixing House Large Magazine	START DATE 1941 195?	END DATE 1945 1992	
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940 WASC 900/91A 1954 A - B.34 c1960 WASC 900/94 c1963 WASC 900/97 ; 24/110 1972 WASC 900/102 ; S21 1972 WASC 900/104 ; S21 1976 WASC 900/113 ; S21		DOCUMENTARY REFERENCES  Plans; S21 B01 - B12 ; Plans and Elevations 1940 to 1985  1972 ERDE List ; Large Magazine (derelict) 1991 Mott McDonald survey ; Proof Stand (All.5) 1992 RARDE List ; Large Magazine (derelict)	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/12 Nitroglycerine gully support leading from S19 206/B/13 Nitroglycerine gully stanchions leading to S21 from S19 206/B/23 Entrance from South 206/B/28 Railway rom North East 206/B/29 Entrance tunnel from South West 206/B/30 Porch, rails & Firing point from South 2) BB92/26150 Interior showing wooden rails BB92/26151 Interior & Nitroglycerine gully from South BB92/26379 S21 Drawing S21.B.09 Plenum Heating arrangements 10.Jan.1941 (MOD Chessington)	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S19			
CONDITION	Fair		

DESCRIPTION

1) CONSTRUCTIONAL MATERIAL  
Brick and Earthwork

3) POWER SOURCE  
Electricity

4) DIMENSIONS i) L 12.6 ii) W 10.0 iii) HT 3.5

5) S21 was originally constructed during the second world war as a Mixing house as part of the New Hill Nitroglycerine Factory. It is believed that the factory was never operational. The building was sited in the centre of a square earthen traverse revetted by gently battered concrete walls. It was intended that the nitroglycerine would have been run along a gutter from the washing house S19 to the mixing house. The concrete stanchions to support the gutter survive along the footpath between S19 and S21. The nitroglycerine would have then entered the mixing house along a straight concrete tunnel through the traverse and into the mixing house. A section of the wooden support shelf remains insitu along the south side of the tunnel, the shelf was constructed with copper screws and was covered by a canvas strip. The mixing house (demolished) was a timber framed structure, 8m x 5m, with a loading porch on the west side. The frame was bolted to a low sill wall, the floor was asphalt. The building was originally served by the narrow gauge railway system through straight tunnels from the north and south. The rails remain insitu within the northern tunnel. As the rails approach the entrance porch to the building the metal rails give way to teak rails.

Part of this structure has subsequently been adapted as a firing point by the blocking of the northern tunnel at either end.

Historic artefacts - wooden nitroglycerine gutter support in the eastern tunnel



## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S22	OLD SERIES	RCHME NUMBER	N.G.R. TL 37921 01874
NAME/FUNCTION Plenum Heater House Control Room		START DATE 1941 195?	END DATE 1945 1992
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 c1963     WASC 900/97 ; S22 1972      WASC 900/102 ; S22 1972      WASC 900/104 ; S22 1976      WASC 900/113 ; S22		DOCUMENTARY REFERENCES  1972      ERDE List ; Control Room 1991      Mott McDonald survey (All.5) 1992      RARDE List ; Control Room	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/22 From South	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S21			
CONDITION      Fair			
DESCRIPTION 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Flat Concrete slab  3)      POWER SOURCE Electricity  4)      DIMENSIONS i) L 3.16 ii) W 3.14 iii) HT 2.6  5)      The building is a single storey structure with a single door on the south side. To the west is a slit window and to the north wooden louvre vent. The interior has three small concrete bases and some switch gear and steam pipe valve.			

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S23	OLD SERIES 24/108	RCHME NUMBER	N.G.R. TL 37954 01857
NAME/FUNCTION Wash Water Settling House Large Nitration Plant		START DATE 1941 195?	END DATE 1945 1992
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 ; 24/108 c1963     WASC 900/97 ; S23 1972      WASC 900/102 ; S23 1972      WASC 900/104 ; S23 1976      WASC 900/113 ; S23		DOCUMENTARY REFERENCES  Plans; S23      B01 - B08 ; Plans and Elevations 1940 to 1941  1972      ERDE List ; Large Nitration Plant 1991      Mott McDonald survey (All.5) 1992      RARDE List ; Large Nitration Plant	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/20 Entrance tunnel from South 206/B/21 Interior & exit tunnel from North 206/B/25 From South showing Earthenware gully	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S16, S19, S24, S25			
CONDITION Fair			

DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Concrete and Earthwork
- 2) ROOF MATERIALS AND STRUCTURE  
Timber with felt covering
- 3) POWER SOURCE  
Electricity
- 4) DIMENSIONS i) L 19.0 ii) W 10.4
- 5) This structure was built as a wash water settling house as part of the the New Hill Nitroglycerine factory laid out during the second world war. It is believed that the factory was never operational.

The building lay in the centre of a rectangular earthen traverse within a concrete lined cellar 1.6m in depth. The building was timber framed covered by flat asbestos sheets bolted to low concrete sill walls. It measured 16.4m x 7.5m. At ground level on the eastern side are the footing of a small lobby area. Within the well of the building are two circular concrete bases covered by asphalt, diameters 5m and 0.88m each with a height of 0.7m. The Wash Water Settling tank originally sitting on the larger of the two bases (see drwg .S23 BO6 28-12-40). It was intended that the water used in the washing of nitroglycerine would be channelled into the building through a tunnel on the north side. Two rows of concrete stanchions link it to S16 and S19 originally intended to carry a wooden gutter. After the settling process the water was discharged along a tunnel to the south in direction of the Flume house S25. In the base of this tunnel is a open white earthen ware drain. It is unclear whether or not this drain was originally open or whether it had a metal pipe within it packed around with clay.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S24	OLD SERIES	RCHME NUMBER	N.G.R. TL 37950 01833
NAME/FUNCTION Plenum Heater House Small Brick Building		START DATE 1941 195?	END DATE 1945 198?
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 1976      WASC 900/113 ; S24		DOCUMENTARY REFERENCES  Plan; S24      B01 - 10/6/41 ; Plenum Heater House  1972     ERDE List ; Small Brick Building 1991     Mott McDonald survey (All.5) 1992     RARDE List ; Small Brick Building	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/24 From South	
RELATIONSHIPS WITH OTHER MONUMENTS  ASSOCIATED WITH: S23			
CONDITION      Fair			
DESCRIPTION 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Flat Concrete slab  3)      POWER SOURCE Electricity  4)      DIMENSIONS i) L 3.46 ii) W 3.16 iii) HT 2.55  5)      The building is a single storey structure with a single door on the south side. On the west side at ground level is a wooden louvre vent. On the north side there is a slit opening. The interior has three small concrete bases and a fuse box along with steam pipes.			

**THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY**

NUMBER S25	OLD SERIES	RCHME NUMBER	N.G.R. TL 37944 01804
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NAME/FUNCTION Flume Unit House Charge Assembly	START DATE 1941 195?	END DATE 1945 198?
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NO PHOTOGRAPHY  
AVAILABLE

**CARTOGRAPHIC DEPICTION**

> 1940 WASC 900/91A  
 1954 A - B.34  
 c1960 WASC 900/94  
 c1963 WASC 900/97 ; S25  
 1972 WASC 900/102 ; S25  
 1972 WASC 900/104 ; S25  
 1976 WASC 900/113 ; S25

**DOCUMENTARY REFERENCES**

Plans;  
 S25 B01,B02 ; Plans and Elevations 1941  
 1972 ERDE List ; Charge Assembly  
 1991 Mott McDonald survey ; Charge Assembly  
 (All.5)  
 1992 RARDE List ; Charge Assembly

**PHOTOGRAPHY  
HISTORIC**

**PHOTOGRAPHY  
RCHME**

- 1) 206/B/26 From East  
 206/B/27 From South East  
 206/T/24 Interior from East  
 206/T/25 Earthernware trough to West  
 206/T/26 Earthernware trough to West
- 2) BB92/26140 Flume house from North East  
 BB92/26155 Earthernware gullies leading to S25  
 BB92/26156 Interior flume house from North

**RELATIONSHIPS WITH OTHER MONUMENTS**

ASSOCIATED WITH: S16, S23

CONDITION Fair

DESCRIPTION

- 1) CONSTRUCTIONAL MATERIAL  
Asbestos and Concrete walls
- 2) ROOF MATERIALS AND STRUCTURE  
Asbestos
- 3) POWER SOURCE  
Electricity
- 4) DIMENSIONS i) L 17.88 ii) W 3.06 iii) HT 2.95
- 5) The building is a single storey with a gabled roof, the north and south elevations each have four small windows. Traces of wavy camouflage paint remain on the exterior of the building. The building was entered through two single doors on the east side giving access into a lobby or changing area. A further door then gave access into a long narrow room with a path along the northern side of the building leading to a single door to the south. In the centre of this room is a channel 1.15m in width and 0.10m in depth. To either side of this channel were seven pairs of leg settings 0.35m x 0.35m. At the western end the channel was drained by a metal pipe into a concrete tank. Over the tank was a metal extractor hood served by a fan attached to the north wall. From the tank the water drained southwards into an open earthenware drain and then into Cornmill Stream. A metal pipe packed around remains insitu for part of the length of this drain perhaps indicating the other earthenware drains originally also contained metal pipes.

## THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S26	OLD SERIES	RCHME NUMBER	N.G.R. TL 37909 01847
NAME/FUNCTION Toilet Block		START DATE 1941	END DATE
NO PHOTOGRAPHY AVAILABLE			
<b>CARTOGRAPHIC DEPICTION</b>  > 1940    WASC 900/91A 1954      A - B.34 c1960     WASC 900/94 c1963     WASC 900/97 ; S26 1972      WASC 900/102 ; S26 1972      WASC 900/104 ; S26 1976      WASC 900/113 ; S26		<b>DOCUMENTARY REFERENCES</b>  1972      ERDE List ; Toilet Block 1991      Mott McDonald survey (All.5) 1992      RARDE List ; Toilet Block	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME	
<b>RELATIONSHIPS WITH OTHER MONUMENTS</b>  ASSOCIATED WITH:			
CONDITION      Poor			
<b>DESCRIPTION</b> 1)      CONSTRUCTIONAL MATERIAL Brick in English Bond  2)      ROOF MATERIALS AND STRUCTURE Concrete slab  4)      DIMENSIONS i) L 4.1 ii) W 2.3 iii) HT 2.2  5)      Closet with two cubicles to the north with buckets in situ roofed by slab. The south end is open with a urinal, it was entered from the east.			

## ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY

NUMBER S42	OLD SERIES	RCHME NUMBER	N.G.R. TL 38090 02155
NAME/FUNCTION Sentry Box		START DATE 1941	END DATE
NO PHOTOGRAPHY AVAILABLE			
<b>CARTOGRAPHIC DEPICTION</b>  > 1940    WASC 900/91A 1954     A - B.34 c1960    WASC 900/94 c1963    WASC 900/97 ; S42 1972     WASC 900/102 ; S42 1972     WASC 900/104 ; S42 1976     WASC 900/113 ; S42		<b>DOCUMENTARY REFERENCES</b>  1972     ERDE List ; Sentry Post 1991     Mott McDonald survey (All.5) 1992     RARDE List ; Sentry Post	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME	
<b>RELATIONSHIPS WITH OTHER MONUMENTS</b>  ASSOCIATED WITH: S9, S43			
CONDITION     Demolished			
<b>DESCRIPTION</b>  5) No field remains			



**THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY**

NUMBER S43	OLD SERIES	RCHME NUMBER	N.G.R. TL 38087 02142
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NAME/FUNCTION Concrete block bunker	START DATE 1941	END DATE
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NO PHOTOGRAPHY  
AVAILABLE

**CARTOGRAPHIC DEPICTION**

> 1940 WASC 900/91A  
 1954 A - B.34  
 c1960 WASC 900/94  
 c1963 WASC 900/97 ; S43  
 1972 WASC 900/102 ; S43  
 1972 WASC 900/104 ; S43  
 1976 WASC 900/113 ; S43

**DOCUMENTARY REFERENCES**

1972 ERDE List ; Concrete Block Bunker  
 1991 Mott McDonald survey (All.5)  
 1992 RARDE List ; Concrete Block Bunker

**PHOTOGRAPHY  
HISTORIC**

**PHOTOGRAPHY  
RCHME**  
 1) 206/D/11 15 Feb 1993 From South West

**RELATIONSHIPS WITH OTHER MONUMENTS**

ASSOCIATED WITH: S9, S42

**CONDITION** Fair

**DESCRIPTION**

- 1) CONSTRUCTIONAL MATERIAL  
Breeze block and Timber
- 2) ROOF MATERIALS AND STRUCTURE  
Concrete
- 4) DIMENSIONS i) L 2.99 ii) W 2.3 iii) HT 2.0
- 5) The sentry post has a single entrance on the south east angle. There are observation slits on all sides formed from breeze blocks laid on their side.

THE ROYAL GUNPOWDER FACTORY - WALTHAM ABBEY			
NUMBER X3	OLD SERIES S51	RCHME NUMBER	N.G.R. TL 37935 01977
NAME/FUNCTION Sand Bagged Bunker		START DATE 1941?	END DATE
NO PHOTOGRAPHY AVAILABLE			
CARTOGRAPHIC DEPICTION		DOCUMENTARY REFERENCES	
		1972 ERDE List ; Bunker (sand bagged) 1992 RARDE List ; Bunker (sand bagged)	
PHOTOGRAPHY HISTORIC		PHOTOGRAPHY RCHME 1) 206/B/31 From South West 206/B/32 From South West	
RELATIONSHIPS WITH OTHER MONUMENTS			
ASSOCIATED WITH:			
CONDITION Fair			
DESCRIPTION			
1) CONSTRUCTIONAL MATERIAL Concrete filled sandbags			
4) DIMENSIONS i) L 8.3 ii) W 2.31 iii) HT 2.2			
5) The feature is rectangular and is constructed from concrete filled sandbags to create battered walls. There was an entrance on the north side protected by a blast screen wall. This has been filled with further concrete filled sandbags. A straight joint is visible in the wall. The interior of the feature is sand filled. A drawing (S51 BO1 1.8.73) shows scaffolding supporting a platform on top of the sand bag mound.			

