

WASC
2153

Material
donated
by Ron
Treadgold

19-06-2009

HERITAGE OPEN DAYS,
VISITS.



1940's Weekend

**Step back in time and experience life
in 1940's Britain!**

**Meet more than twenty costumed
characters from World War II! Watch
displays by the Royal Observer Corps!
See a special exhibition of period
firearms!**

**Saturday Sept 15th &
Sunday Sept 16th**

10am - 5pm

(Site open 10am-6pm, last entry 5pm)

**Royal Gunpowder Mills, Beaulieu Drive, Waltham
Abbey, Essex, EN9 1JY
Tel: 01992 70 73 70**

**Entry prices: Adults £5.90 Children £3.25 (under
5's free) Concessions £5.25
Family Ticket £17.00**

www.royalgunpowdermills.com



Please take care of yourselves and your belongings, help us look after this special site and enjoy your visit. For your safety

- ❖ Remember that you are entering a site of old industrial buildings and important wildlife areas.
- ❖ Keep to the main paths and boardwalks. Some areas may be rough and uneven.
- ❖ Observe all the signs on site.
- ❖ Do not climb any structures.
- ❖ Beware of vehicles and machinery.
- ❖ Ensure that children are supervised at all times.
- ❖ Take care near water. Contact with water can sometimes cause disease.
- ❖ Do not pick flowers, plants and berries.
- ❖ Do not create a fire risk. Smoking is not permitted in any buildings, or on the land train. Ensure all matches or cigarettes are extinguished properly.

We would also like to remind visitors not to leave valuables in parked vehicles.

TICKET

REG	16-09-2001(SUN)	17:46
C01	MC01	014275
		CF 1
1 ADULT		-5.90
50%		
-50%		-2.95
TL		-2.95
CASH		-5.00
CC		-2.05

Non-transferable. Valid for 2 consecutive days. Please keep your ticket with you throughout the visit.

VAT No GB 697 0791 81
Registered Charity No 1062968/0

Special Offer!

Use this ticket to obtain £1.00 off the standard entry price for up to 5 people. Valid up to one year from the date on this ticket.

Not valid with any other offer.

Further information – please contact
Royal Gunpowder Mills,
Powdermill Lane, Waltham Abbey,
Essex, EN9 1BN
Tel: 01992 707370

www.royalgunpowdermills.com

ROYAL GUNPOWDER MILLS

Waltham Abbey

WELCOME

Please refer to the map inside this leaflet to help you explore this fascinating place. Staff and volunteers will be pleased to provide further information or answer any questions.

The site closes at 6pm with the last admission at 5 o'clock. Please note: only guide dogs are permitted on site.

Photographs and videos can be taken for your own use, but the site can only be used for commercial photographs or films by prior application to the Director.

The Royal Gunpowder Mills is a charity, which relies on the support of many organisations and individuals. Many people on site are volunteers, who give their time freely. If you would like to help, please ask for further details on how to become a volunteer or to join the Friends Association.

Starting your visit

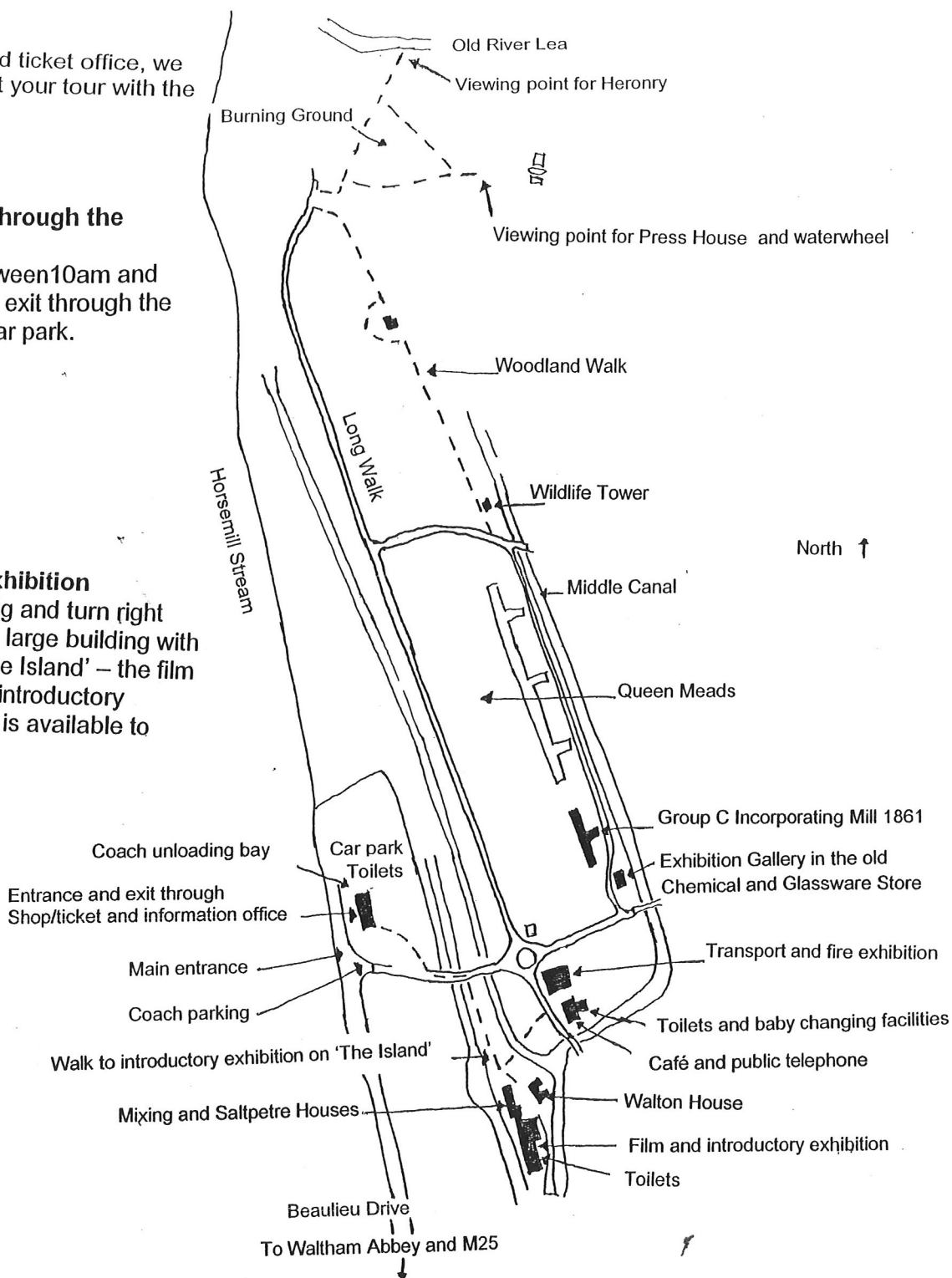
After leaving the shop and ticket office, we recommend that you start your tour with the film and exhibition.

Visitor entrance/exit is through the shop/ticket office

This is normally open between 10am and 5.30pm. If closed, please exit through the pedestrian gate into the car park.

Film and Introductory Exhibition

Leave the entrance building and turn right along the boardwalk to the large building with the automatic doors on 'The Island' – the film theatre is upstairs and the introductory exhibition downstairs. A lift is available to reach the first floor.



Café

This is normally open between 11am and 4pm, serving light lunches, drinks, cakes, snacks, ice cream etc.

There are also picnic tables on site.

Site of Special Scientific Interest

The northern area of the site is important for its wildlife and has been designated a Site of Special Scientific Interest. A limited tractor-trailer tour is available into this area, but as we need to minimise the disturbance to the wildlife, we may not be able to accommodate all visitors on these tours. (No tours will run during certain weekend events). We trust that the consecutive two-day ticket will enable you to make the most of your visit. Please check for the availability of these tours.

In the case of an emergency

contact a member of staff immediately

- ❖ to report any incident
- ❖ if you suspect or see a fire
- ❖ if first aid is required (please note we are only allowed to offer limited help).

If a siren sounds, leave the site as calmly as possible through the main entrance or as directed by staff.

Andy Mansfield



13 Horrocks Close, Ware,
Hertfordshire SG12 0QL.
Tel / Fax: 01920 486466
Mobile: 0976 237050
e-mail: andymansfield@compuserve.com

Mr Ron Treadgold
9 Mark Avenue
Chingford
London
E4 7NR

September 14, 1998

Dear Mr Treadgold

The Waltham Abbey Royal Gunpowder Mills Heritage Open Days

I would like to take this opportunity to thank you for the significant contribution you made to the success of this weekend. It was a tremendous success with over 850 people being guided around the site. The vast majority of our visitors have said on the questionnaire that they found the tour very interesting, and I know that all of us had favorable comments about the weekend from the people that we met.

The weekend could not have run as smoothly as it did without your hard work and I would like to add my personal thanks to those of The Waltham Abbey Royal Gunpowder Mills. At the end of the weekend, we had managed to ensure that our visitors went away, having experienced something special, which they will remember for a long while. - Thank you.

Sincerely,

Andy Mansfield
Heritage Day Organiser

cc Mr R Saunders; Mr D Spinks

Waltham Abbey Royal Gunpowder Mills Historic Site

SAFETY INSTRUCTIONS RULES FOR VISITORS AND CONTRACTORS' STAFF.

You must comply with the Rules below, failure to do so may lead to your removal from the Site.

RULES

1. Radio transmitters (including CB Radio), and Radio telephones, must not be brought into the site without permission of the Site Manager or his Deputy.
2. Observe road traffic and other signs (You must not pass any barrier or Red Flag)
3. Do not remove barriers and temporary fences.
4. Smoking is forbidden except in designated areas which are clearly indicated.
5. Do not light fires.
6. Keep access, paths and roadways clear.
7. Observe the maximum speed limit of 20 miles per hour
8. Keep to roads and pathways.
9. Alcohol is forbidden on site food and drink may only be consumed in the areas designated.
10. The following materials are not to be taken into the site without written permission
 - Smoking materials
 - Firearms
 - Ammunition and explosives
 - Matches, lighters and other sources of ignition
 - Battery operated equipment, including Radios (fixed car radios are excluded)
 - Portable electrical equipment
 - Domestic pets. Dogs or animals of any kind.
11. Hard hats to be worn at all times (except for attendance at meetings in A203). Please liaise with the site manager or his deputy at time of arrival. He will advise on areas where access will be permitted.

12. Fishing is prohibited.

- You are going to visit a former explosives development and manufacturing site. It is potentially hazardous from residual explosives and also from disused buildings and structures. You must obey the conditions and rules which are intended to protect you and others from coming to harm during your visit.
- The entire site beyond the security control is a "Hazardous Area". The real hazards are:
 - Unstable structures:
 - Falling debris from roofs
 - Unstable fabric
 - Possible collapse
 - Un-remediated structures - Buildings which have had limited remedial work carried out.
 - Areas of limited residual contamination - Although these areas are capped/contained, disturbance must be avoided.
 - Trees liable to sudden fall - particularly willows and those now unprotected from the wind.
 - Unguarded edges of deep water
 - Vertical drops with insufficient guarding.
 - Chambers pits and the like with temporary covers
 - Uneven and potholed ground.
- Nothing may be removed from Site without the authority of the site manager.
- The Site Manager reserves the right to require vehicles, packages, bags, etc. to be inspected by the Security Guards.
- No obstruction of Fire Escape routes or/Emergency exit doors is permitted including obstruction by the parking of vehicles.
- In the event of an incident which requires a report to any authority e.g. Police, insurance company, HSE etc. a copy of the report shall also be submitted to the Site Manager or his deputy.
- Drivers shall comply with all traffic regulations in force on the Site. Drivers shall hold a current licence covering the type of vehicle being used and be insured for the same. No caravans or accommodation vehicles are permitted to stay on Site at any time except by prior arrangement with the Site Office.
- Contractors are responsible for the clearance and removal from Site of their own waste in accordance with current legislation. No rubbish or refuse is to be left on the Site (including within or outside any building) except in appropriate containers and then only pending its correct removal from Site.



Mr Ron Treadgold
9 Mark Avenue
Chingford
London
E4 7NR

August 28, 1998

Dear Mr Treadgold:

WALTHAM ABBEY ROYAL GUNPOWDER MILLS - HERITAGE OPEN DAYS

Thank you again for your help over this weekend. As promised, here is Steve Chaddock's Notes for Tour Guides and map of the route that will be used. I have also enclosed Steve's Short History of the Waltham Abbey Royal Gunpowder Mills.

I was going to prepare information on the visitor attraction, but the last section of Steve's Brief History will give you all the information you require.

I have also enclosed a receptionist/exhibition roster. The final enclosure is the latest Security document which the Security company have asked me to pass on.

The only other points to bear in mind when talking generally to the members of your tour party are:

The Friends of the Waltham Abbey Royal Gunpowder Mills Society is actively recruiting members and there is a small exhibition in the Admin block where visitors can find out more information and join the Society.

We are also compiling a list of volunteers who can assist with the site - again, the Friends stand in the Admin block will have more details.

Visitors can take photographs and video for personal use.

Please enter the site at the security gate at the end of Powdermill Lane - I have arranged Car Parking for all guides and other people working over the weekend. Your name will be at the gate and the Security guard will show you where the allocated car parking spaces are.

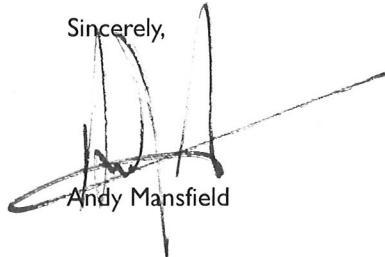
When you report to reception at your appointed time, you will be given details of which route you will take and any other pertinent information.

Once again thank you for offering your support - you will be pleased to know that we are fully booked for the weekend, with a very long waiting list, and this event will surely launch the Waltham Abbey

AUGUST 28, 1998

Royal Gunpowder Mills to the local community in a big way. If you have any queries about the above or any aspects of the Open Days - please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'AM', with a long horizontal stroke extending to the right.

Andy Mansfield

Andy Mansfield



2 . 9 . 9 8
13 Horrocks Close, Ware,
Hertfordshire SG12 0QL.
Tel / Fax: 01920 486466
Mobile: 0976 237050
e-mail: andymansfield@compuserve.com

Mr Ron Treadgold
9 Mark Avenue
Chingford
London
E4 7NR

September 1, 1998

Dear Mr Treadgold:

WALTHAM ABBEY ROYAL GUNPOWDER MILLS - HERITAGE OPEN DAYS

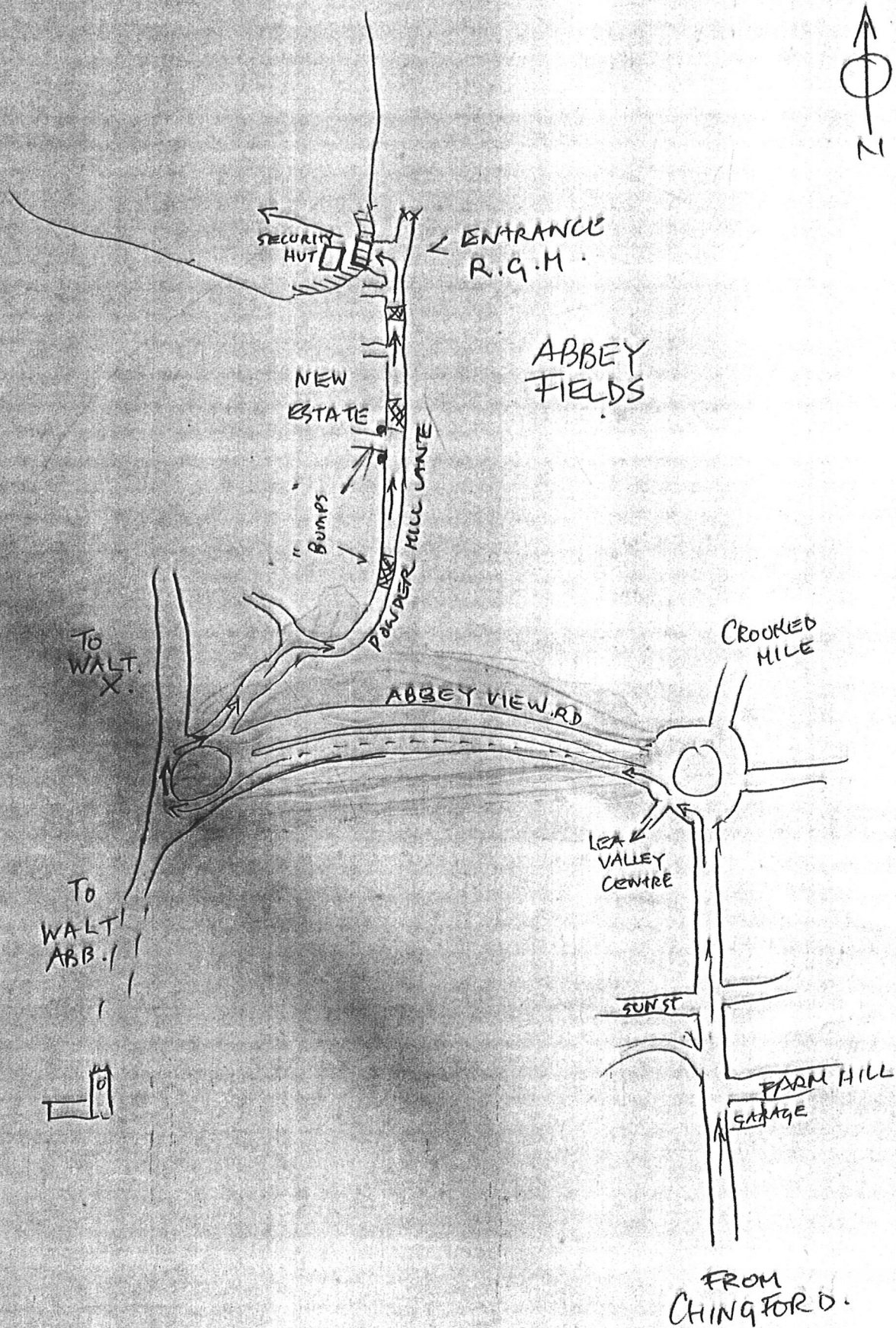
Thank you for volunteering to work on the reception or exhibition stand at the above event. Please find attached the rosta as it stand at present. I have arranged car parking for the people working on the day - please enter the site through the security gate at the end of Powdermill Lane (The normal entrance). The Security Guard will show you where to park your car. Please then come to the Administration block where you will see the Reception Desk. Full details of your duties will be given to you on the day.

Once again, many thanks for your help.

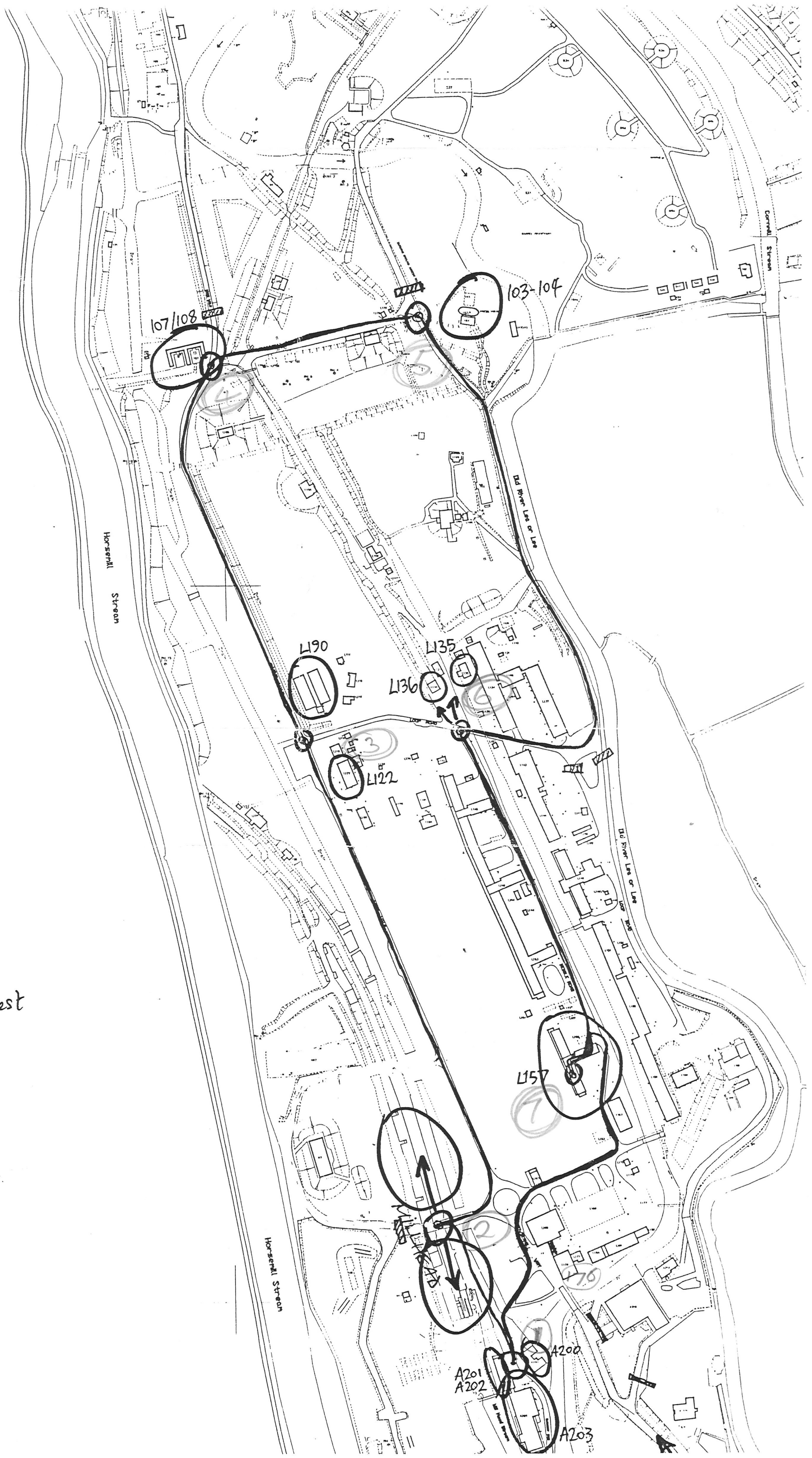
Sincerely,



Andy Mansfield



⊙ - Pause Point
○ - Building of Interest



SITE RULES FOR CONTRACTORS WALTHAM PARK REMEDIATION PROJECT

1. YOU MUST ENTER AND LEAVE THE SITE BY THE AUTHORISED GATE
2. BEWARE OF WEIGHT RESTRICTIONS ON BRIDGES
3. BEWARE OF PLANT AND MACHINERY MOVEMENTS
4. DO NOT PASS 'NO ENTRY' SIGNS
5. DO NOT REMOVE BARRIERS OR FENCING, WHETHER TEMPORARY OR PERMANENT
6. BEWARE OF UNGUARDED EDGES OF PONDS/STREAMS AND RIVERS
7. **FIRE HAZARD** - SMOKING IS RESTRICTED ON THE SITE - SEEK ADVICE
8. DO NOT LIGHT FIRES
9. DO NOT USE FLAME EMITTING EQUIPMENT WITHOUT SITE MANAGER'S PERMIT
10. KEEP TO PATHS AND ROADWAYS
11. DO NOT OBSTRUCT PATHS AND ROADWAYS
12. OBSERVE THE SPEED LIMIT OF 10mph
13. REMOVE YOUR WASTE - DO NOT LITTER THE SITE
14. IN THE EVENT OF AN EMERGENCY OBEY THE REQUESTS OF THE SITE MANAGER
15. DO NOT EXCAVATE IN ANY AREA WITHOUT THE PRIOR CONSENT OF THE SITE MANAGER
16. PLEASE REPORT ANY SAFETY HAZARDS OBSERVED TO THE SITE MANAGER
17. CONTRACTORS HAVE A DUTY TO OBSERVE ALL STATUTORY HEALTH AND SAFETY REGULATIONS WHILST ON THIS SITE
18. DO NOT ENTER ANY BUILDINGS WITHOUT FIRST CONFIRMING IT IS SAFE TO DO SO, DO NOT CARRY OUT WORK ON A BUILDING WITHOUT FIRST OBTAINING THE SITE MANAGER'S **PERMIT TO WORK** FOR THAT BUILDING
19. DO NOT REMOVE ITEMS FROM THIS SITE WITHOUT THE PRIOR WRITTEN CONSENT OF THE SITE MANAGER
20. WEAR A SAFETY HELMET AT ALL TIMES, AND ALL OTHER PERSONAL PROTECTIVE EQUIPMENT AS DIRECTED BY YOUR WORK INSTRUCTIONS
21. NON COMPLIANCE WITH ANY OF THESE RULES WILL RESULT IN THE OFFENDER BEING ESCORTED OFF THE SITE, AND RE-ADMITTANCE REFUSED
22. PLEASE GO ABOUT YOUR BUSINESS SAFELY
23. **EMPLOYERS HAVE A DUTY TO ENSURE SAFE SYSTEMS OF WORK ARE IN PLACE FOR THEIR EMPLOYEES**
24. **IF IN ANY DOUBT - ASK FOR INFORMATION OR ADVICE**

DECLARATION

I confirm, I have read and understand these rules and will conduct myself on this site in a safe manner and in accordance with these rules.

print name here: R. TREAGOLD

Company: WATV

signed: R. Treagold

date: 15.4.98

A SIGNED COPY OF THESE RULES WILL BE KEPT ON FILE BY THE SITE MANAGER



R.G.P.F. MAIN LAB. @ 1942 SOMEWHERE IN HERTFORDSHIRE

ERIC SPELNER	KENNY POWIS	CYRIL POWY	JIM (JECK) JEACOCKE	PEGGY JEACOCKE	
JOYCE SPELLER	HARRY BURR		JACK (SQUEAK) SEAWARD	ALEC (BISH) CHURCH	
	PAT BARGE	NORMAN (OSSIE) BLAY	CYRIL (BORIS) BARNETT	JACK (KILLER) HILLING	
BETTY DIXON		RON (PERCY) TREADGOLD		NORMAN (KEM) KEMBER	

Andy Mansfield

13 Horrocks Close, Ware,
Hertfordshire SG12 0QL.
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Mobile: 0976 237050
e-mail: andymansfield@compuserve.com

Mr Ron Treadgold
9 Mark Avenue
Chingford
London
E4 7NR

12 August 1998

Dear Mr Treadgold

REF:WALTHAM ABBEY ROYAL GUNPOWDER MILLS HERITAGE OPEN DAYS

Thank you for volunteering to act as a guide on the 12th and 13th September. Attached is a schedule of tours, showing the times that you will be required. Steve Chaddock the site archeologist is compiling a Tour Guide instruction sheet, detailing the route (and for those who need it a short guide on what to say!!!!). This will be with you prior to the weekend. I will prepare the party line on what should be said about the Phase One development of the site - this will be with you by the weekend as well.

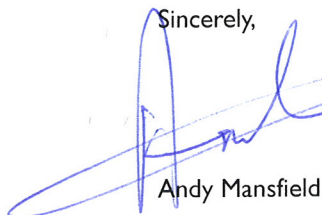
Catering will be provided for all guides on the day. Each guide will lead a party of a approx. of 20 people, with two guides allocated to each tour time. The last tour of the day (at 3.30 pm) is an overflow tour to accommodate any problem bookings I have identified. I have allocated you a tour time as follows:

1.30 pm Sunday 13th September

All tours will start and finish at the Administration building at a specified Tour Guide Point and should take no more than an hour. If you could be present on site at least 15 minutes prior to your tour and report in to the reception desk on arrival I would be grateful.

Some of the volunteers have been assigned to man the reception desk, to meet visitors and direct them to the appropriate tour guides - I require a number of extra volunteers for this important role, and if you could offer any more time I would be grateful. Norman Paul also requires help on manning the 'Friends' stand during the weekend. I have enclosed a reply slip covering all of the above and I would be very grateful if you could return it to me in the sae provided.

Sincerely,



Andy Mansfield

Reply OK for 1.30
odd job Sat 2-4
and be around after
2.30 Sunday?

Tour Guidance Notes for Waltham Abbey Royal Gunpowder Mills Heritage Open Days on 12th & 13th September 1998

Dear Tour Guide,

I have been asked by the WARGM Company to write some notes for the people who will be taking part in the guided tours as part of the Heritage Open Day programme. I am more than well aware that some of the guides who will be taking groups around the site over the weekend are distinguished by their extensive knowledge of the site. I would like to state that these notes are merely a necessarily compact set of suggestions and I do not imagine that those people who know more about one part of the site's history or another should stop themselves from imparting this knowledge to the tour party in question.

To those people who do not know the site's history as well, I hope that the notes, reference table (to follow), brief history and site plan prove useful.

The notes are written as if a tour party were leaving from the A203 building and progressing northwards up the western side of the site, crossing from west to east at the burning ground and returning down the eastern side of the site to L157 and back to A203. It may be that you are asked to carry out a tour in the opposite direction to this; starting at L157 and heading north up the eastern side to start; so this may be useful to bear in mind.

Tour by Pause Points

Pause Point 1

On leaving the A203 building and before leaving the Island site there is an opportunity to point out the oldest standing buildings remaining on the site. A201 and A202 are gunpowder process buildings and part of A200 is the original government office block, dating from the state purchase of the mills in 1787. The crest on A200 may belong to the Walton family but they had already left the site by the time the first crest was erected, you can see an earlier, larger fixing behind the present crest. The southern part of A200 (RHS as you look at it) is roughly level, the northern extension was constructed over an old water course and has subsided badly. As it is difficult to tell which side is falling which way, this is a good question to pose to the members of your group. A203 lecture theatre may be built on top of the earliest known structure on the site, a Fulling mill that can be seen on a map dating to 1590.

Pause Point 2

Making your way northwards up to the east-west route that meets the roundabout, you walk over the wheel pit of a water powered mill and have the opportunity to look at the two stone edgerunner millstones that may have been powered by the missing waterwheel. The decontamination of the site involved clearing out all of the silted-up canals and along this area of Millhead, we found numerous fragments of millstones that had been thrown into the canal when the mills were dismantled. Millhead is the oldest part of the site. It is an artificially high channel that brings water from the northern end of the site to the sluices beside the Island site. Using sluice boards the level can be managed and a 'head' of water can be maintained to power the waterwheels that

were set across the two islands on either side of the Millhead stream. On either side of these islands were drainage leats that allowed the waste water to run off. The different levels of water on the site were used by small barges that moved raw materials and finished product around the site and transferred from one level to another via a system of canal locks.

Pause Point 3

Making your way northwards along the Long Walk, on your left you will see the remains of the other water powered machines and their traverses, on the right is Queens Mead, an open area whose planned use is open air events and the siting of marquees once the site is open. At the north end of Queens Mead you will come to the Laboratory building [L122] and the Climatic Test Cubicles [L190]. These are more modern relics, which demonstrate how activities on the site continued up to 1991. Although it resembles a mock tudor mansion, the L122 laboratory was used for small scale experiments of all sorts and the different pipes and gas supplies on the exterior are a clue to its internal workings. To the north of the Loop road is L190; freezers and ovens in small bays subjected small amounts of propellant and explosive to the climatic conditions expected in the theatre of war. Armaments hung from the underside of a jet fighter will be hot when stationary in the desert sun but a rapid fall in temperature will be recorded once the jet takes off and gains altitude. Once cooked or frozen, they were put through sensitivity or other test to assess their suitability for use. These testing facilities are only a small part of the full range that was available to the scientists working here.

Pause Point 4

Progressing further northwards the traverses of 107 and 108 loom into view. These blast walls were originally wrapped around two small wooden buildings where gunpowder was pressed into cleverly designed shapes so that it could be used in the very large gunpowder cannon manufactured in the 1880s. The mass construction, using boards and pouring in each level, is an early and innovative use of concrete, which became more popular almost 100 years afterwards. In front of the traverses there is a dry canal from which barges used to serve the presses.

Pause Point 5

Turning into the Burning Ground, make your way along the line of the dry canal across to [103] Gunpowder Press No.2 on the opposite side. The three structures worked together to provide hydraulic power to the press while ensuring the safety of the workers. The canal that traverses the burning ground powered the waterwheel on the southern side. The wheel generated hydraulic power in a pump that was inside the building. This building also provided shelter for the press workers. The massive structure in the middle is a traverse, providing the pump building with protection from the dangerous gunpowder press on the other side. Although the wooden structure around the press has disappeared, the press itself is made of sterner stuff and can be seen to the left of the traverse. The hydraulic power was transferred to the press from the pump house through a narrow gauge pipe.

Pause Point 6

Turning southwards, make your way down the road and around to the road bridge from which you will be able to look northwards to the L136 Remote Accumulator Tower and L135 Cordite Tray Magazine. The L136 Tower is part of a wider hydraulic power network, remote towers were needed within the network to take up the 'travel' encountered when the machines at the business end were in use. L135 is one of many small storage buildings provided with a loading porch fronting onto the canal. Cordite was manufactured, notably during WWI, from a mixture of nitroglycerine and nitrocellulose (guncotton). After incorporation it was extruded in the presence of a solvent into cord-like strands (hence the name cordite) and these were laid on trays which were stored in magazines such as L135.

Pause Point 7 Turning sharp left and making your way alongside the ranges of gunpowder incorporating mills on the RHS and cordite incorporating buildings on the LHS across the canal, you will end up at L157. Enter through the boiler house door facing you and lead the group up the steps and into the central Engine House. Here was located a 70hp Beam engine that took steam power from the pair of Lancashire boilers which used to stand in the boiler house behind. The beam engine powered two huge shafts, which passed underneath six bays in all, three to the north and three to the south. The shaft and engine were expensive and so were protected by the huge iron undercroft and thick bay walls in case of an accidental explosion. Take the group out of the Engine house and around to the left, where a bay is left open for visitors to peer into the undercroft and examine the shaft and bevel gearing. Power was transferred to the pair of steel edgerunners housed in each bay by means of a friction clutch, which was operated from a distance. All of this explanation refers to the period 1861-1890s. The building was remodeled in the 1890s to take on a new life as a cordite incorporating mill. Cordite incorporation was carried out in machines based on the dough mixing machines used by the baking trade. A belt taking power off a revolving shaft overhead powered these; the bricked-up bearing boxes for the shaft are still visible in the gable ends of the bay division walls. Subsequent to the site closing as a factory in 1943 the building was again reworked in order to continue life as a research laboratory. It is around this date that the mezzanine in the Engine House and the glazed western front looking over Queens Mead were constructed. File back out of L157 the way you came in. Turn right and make your way back to the A203 building via the small footbridge.

See you on the day.

Yours sincerely Steve Chaddock

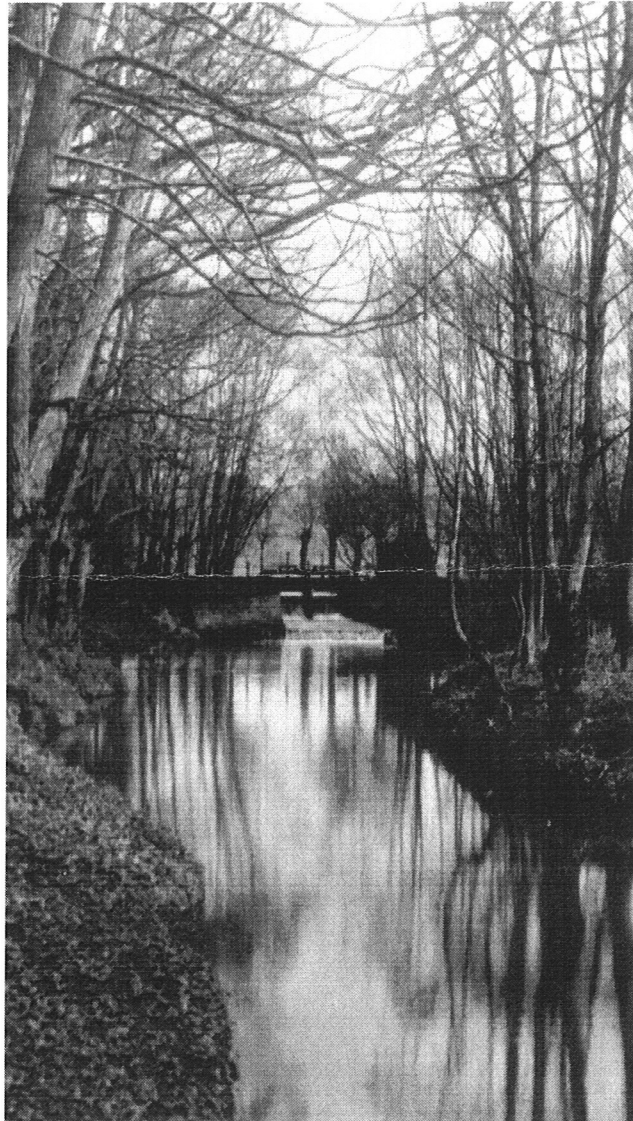
A BRIEF
HISTORY OF
THE ROYAL
GUNPOWDER FACTORY,
WALTHAM ABBEY
1665~1998



Steven EB Chaddock

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 come 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 references 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. 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 Faverhsam, 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 1802 and 1840, saw little new development. This period of relative inactivity did not last, and by the second half of the 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 (cellulose nitrate) 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 produce cordite. Initially the South Site consisted of a guncotton factory but nitroglycerine and cordite production areas followed shortly afterwards. Back on the North Site an acid factory and nitroglycerine facility were built in the 1890s. 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 building H12 the cordite reel magazine.

The First and Second World Wars naturally produced 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 Royal Gunpowder Factory even though the site was never a high explosive plant.

Picric acid was produced in the 1870s and 1890s 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 site's 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 northwest 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, properties of high explosives and many other

aspects of energetic and inert materials took place on North and South Site. By the 1960s Waltham Abbey was the sole government laboratory carrying out research on non-nuclear



explosives of every kind.

Many of the old cordite and gunpowder laboratory buildings were used as laboratories; also some of the test beds were converted from 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.



Between 1992 and 1996 a programme of decontamination and remediation was carried out with the aim of putting the site to beneficial reuse in the public sector. The decontamination process removed the collected silts from disused canals which resulted in the discovery of many explosives related artefacts such as millstones and barges.

The newly formed Waltham Abbey Trust Steering Committee, whose membership was drawn from local, regional and national organisations, commissioned the preparation of a feasibility study and business plan. This was followed by an application to the National Heritage Lottery Fund. In October 1996 the National Heritage Lottery fund offered the project up to £6.5 million for the preservation and interpretation of the site. In addition the WARGM Charitable Foundation is managing a c.£5 million endowment from the MoD. WARGM CF have a lease and management agreement with another charity, WARGM Co. Ltd., whose purpose is to develop and operate the site

as a visitor attraction, and in particular to undertake the Stage I works which are part funded by the HLF grant offer.

Stage I will focus on the whole history of the site, and will include the development of the Island Complex as an interpretative centre, as well as trails to other interpreted buildings associated with the manufacture of explosives and propellants. A series of guided walks through the closed off parts of the site will also be available to

the visitor. Specific works include turning A200, Walton's House, back into offices, developing H7 into an entrance and ticketing building, transforming L176 into a restaurant and L157 into an interpreted display area. The main exhibition and audio visual interpretation area is planned in A203 where there will also be educational facilities. Incremental development of the site is planned over the next few decades with the eventual aim of repairing and reusing the multi-level canal system and reinstating the narrow gauge railway as different methods of visitor transport.

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To become a 'Friend of the Gunpowder Mills'.

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**For Further
Information:**

Time	Reception	Reception	Exhibition
10am -12 noon Saturday 12 th September	Mr D Spinks Mr D Mansell	Mr D Manners Dr J Vernon	Mr R Wallace/ Ms K Eyre
12 noon - 2 pm Saturday 12 th September	Dr J Wright	Dr J Burgess	Mr A Mansfield/Mrs F Burgess
2 pm - 4 pm Saturday 12 th September	Dr J Wright?	Mr Rex Charlesworth	Mr A Mansfield/Mrs F Burgess?
10am -12 noon Sunday 13th September	Mr P Honey	Dr J Burgess	Ms L Woods/ Andy Mansfield
12 noon - 2 pm Sunday 13th September	Dr H Edwards	Mr B Clements	Ms L Woods/ Andy Mansfield
2 pm - 4 pm Sunday 13th September	Mr R Treadgold (2.30)	Mr Rex Charlesworth	Ms L Woods/ Andy Mansfield