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S Chaddock Esq
Consultant Archaeologist
Royal Gunpowder Mills
Powdermill Lane
Waltham Abbey
Essex EN9 1BN

Our ref: GW/AJP

21 July 1995

Dear Steve

**WALTHAM ABBEY RARDE NORTH SITE
PROPOSED WINDBREAK FENCING
REQUEST FOR SCHEDULED MONUMENT CONSENT**

Please find enclosed a specification for the proposed windbreak fencing along the Horsemill Stream.

As you know, English Nature is deeply concerned that felling of trees on the western bank will remove the existing windbreak and could result in severe damage to the RARDE site. Obviously, our first concern is for the SSSI (and part of a proposed SPA); and in particular for the heronry. It should be emphasised however that wind damage to the woodland could also seriously affect the archaeological interest of the SAM, both by impact of falling trees upon buildings and by disturbance of buried or surface features by overturning of rootplates.

I would therefore be grateful if you could add this windbreak fencing to your next SMC application.

Yours sincerely



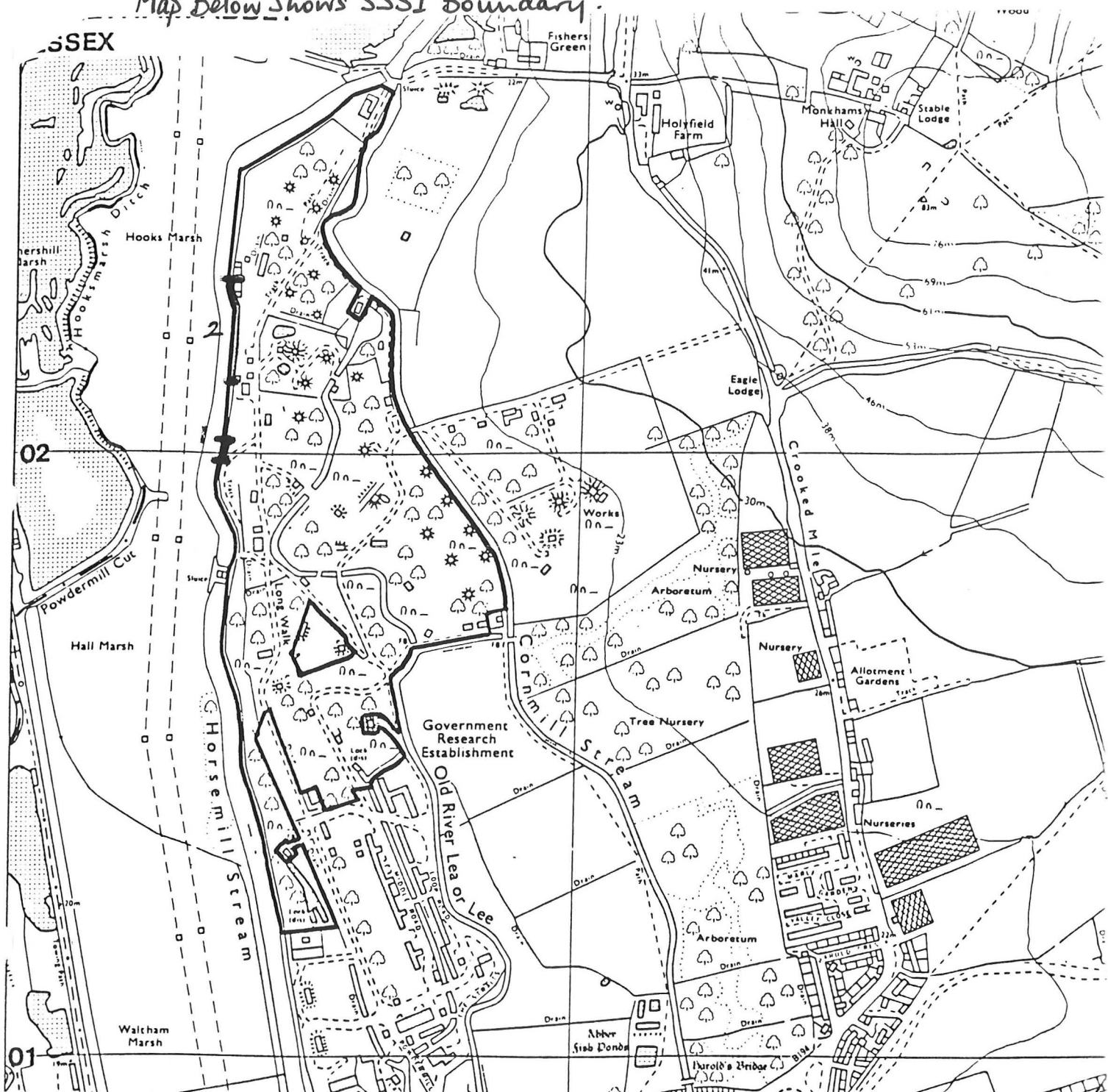
Gordon Wyatt
Conservation Officer
Colchester

SPECIFICATION FOR PROPOSED WINDBREAK FENCING ALONG EAST BANK OF HORSEMILL STREAM, FORMER RARDE (NORTH SITE), WALTHAM ABBEY

Supply and erect a new windbreak fence above existing 2.4m high chainlink consisting of 80 x 80 RHS posts at 3m centres. New posts to extend above chainlink and clad with Tensar netting 2m above, line wires supporting mesh to be 7 ply galvanised wire. Total length of 250m in two runs, of 200m and 50m, located as shown on the attached map.

GW/AJP
21 July 1995

Map Below Shows SSSI Boundary.



PLS
CC - P. Mayell
- A. HENTH
- B. EDWARDS

Subject GENERAL NATURE ASPECTS

To Graham Vincent

- ME
- FILE

Alan - Can we go thro' there
When you have read them
GAV 14/11

Date 14th November 1994

From Bob Watts
Ref E5275/15/1/01

Graham,

Following our site inspection with Bob Stebbings I confirm the following:-

1) Long Walk.

- i) Remaining stretches of drain to be excavated to 600mm approximately, removing soft material only. Avoid tree roots. Keep this material separate. Likely to be uncontaminated, objective is to locate and remove any suspicious deposits.
- ii) Peg the position and sample the suspected asbestos at 6 No. locations for L.G.C. analysis.
- iii) Clean out culvert at Bridge 33.
- iv) Protect Ash tree adjacent Bridge 56, do not cut suckers. Access drain via banks and travel along drain base if firm enough.

2) Scrutiny Exercise.

- i) This short exercise produced some interesting finds. The method was approved by Bob Stebbings. Please investigate ordering hook/spikes of bronze or stainless steel non-spark for fixing to brush handles or similar (6 No.). Scrutiny of area North of Press House to commence at beginning of December.
- ii) Discovered tipping areas to be dealt with by removal as they arise. Isolated items to be collected, hand dig if buried. Finds to artifacts store.

3) Canal North of L136 Containing Barges.

- i) Lengths of preformed asbestos to be collected in canal to rear of L111.
- ii) Blocks to be removed whole if possible. Will be fired if necessary then reserved for habitat use by RSC if suitable.
- iii) R.O. to cut timber away to rear of L111 by Friday 18th November 1994. Do not disturb ferns.
- iv) Cut back willow on L109 mound and remove Sycamore. Clear mound.
- v) Scrape ditch bed lightly with small machine starting from each end. Preserve root plates. The intention is to check there are no deposits. If access problems, or more

Action
mc.

Trevor

convenient, carry out by hand. Stock pile arisings with the material.

vi) Clear culvert under Canal Aa and ditch to Long Walk.

4) Press House.

i) Carry out scrutiny.

ii) Cut 1st Willow to 4 - 5m length. Remove from river (starting from Bridge 9).

iii) Cut 2nd Willow, leave stump, remove from river.

iv) Cut 3rd and 4th Willow at bank and remove from river.

v) Hook out ring from river bed.

5) Burning Ground/Bridge 10.

i) Target date for replanting mid January 1995.

ii) Carry out metal detection.

iii) Inspection of this and other areas necessary before sampling.

6) Steam Mains.

i) Cut trees fallen across steam main routes.

ii) Revised details of treatment to steam mains appear at Appendix A. Keep clear of semi-collapsed bridge.

iii) Terram placement and backfilling can be carried out by Bray ^{OR MORRIS} labour with precautionary masks and personal monitoring.

7) i) Depression South of L189 to be cleared of vegetation to RSC line and trial trenches to be excavated to determine the type of fill and remove semi-buried drums.

ii) Hand excavated sludge from around and in barges may be deposited in this area.

iii) Other sludge to dewatering area at Queens Mead.

Regards

BOB WATTS.

Alan & Bob
see GGV

Copy:- Bob Stebbings

01/1/03

52/1/01

APPENDIX A

REVISED TREATMENT METHOD TO ROUTES OF ASBESTOS CLAD STEAM MAINS.

- 1) Where denoted by RSC that no tree roots exist in the area to be treated, excavation and backfilling to be carried out as drawing SK10/4A using a machine excavator except that granular material will be used not top soil for backfilling on membrane.
- 2) Where tree roots exist along routes of asbestos clad steam mains RSC to denote with flags those areas which can be machine excavated and treated as 1) which exceed approximately 10m long and those areas requiring hand excavation.
- 3) Hand excavation to be carried out as follows:-
 - i) Surface rake/scrape 2m width to remove surface deposits of asbestos, bag and remove arisings.
 - ii) Deposit 50mm thickness of granular material, no Terram.
 - iii) Mounds are to be raked, excavated and treated as 1) excluding the Terram membrane.
 - iv) A lightweight Kubota machine will be trialed on this work to minimise surface disturbance.
 - v) Previously excavated routes will be raked such as to define excavation line and backfilled with granular material as 1).

Metal Detect

a division of WS Atkins Consultants Limited

Mr.R. Watts
c/o Royal Ordnance (South Site)
Sewardstone Road
Your ref Waltham Abbey
Our ref Essex EN9 1AY
Tel: 0992 651611
Date Fax: 0992 651611

Woodcote Grove
Ashley Road
Epsom
Surrey KT18 5BW England
Telephone (0372) 726140
Telex 266701 (Atkins G)
Fax (0372) 740055

Ext no

Dr.R.Stebbing
Robert Stebbings Consultancy
74 Alexandra Road
Peterborough
Cambridgeshire
PE1 3DG

1st November 1994


Our Ref: E5275/15/1/01

Dear Bob,

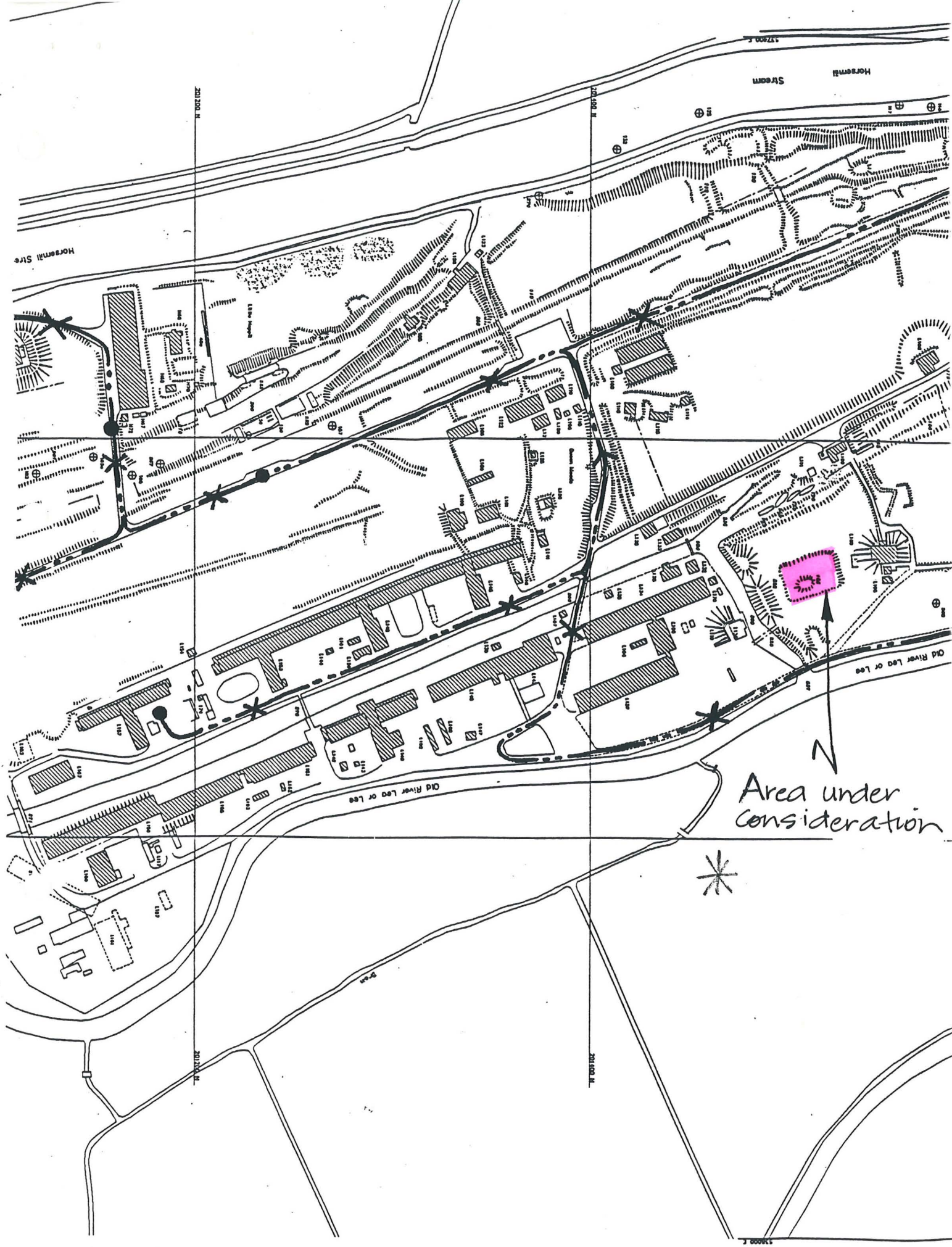
WALTHAM ABBEY RARDE NORTH SITE
SLUDGE DEWATERING.

- 1) A process is underway at the moment involving clearance of sludge from around the 5 No. barges to the rear of L111. It is required to dewater the sludge which will be either pumped or excavated. I propose to use the depression to the South of L189.
- 2) The depression contains some Sycamore and young trees and is encircled by more mature Alders. There is evidence of burial of drums within the depression. This area is one identified for excavation. Would you consider the proposal (which involves removing the trees in the area prior to the excavation) when you attend site on Friday 11th November 1994. I have not had any indication from the EHO when or if he will be available for a meeting.

Yours sincerely,



R.E.WATTS.



Area under consideration



WS Atkins

memorandum

Subject

SSSI

To Graham Vincent.

Potentially Damaging
Operations.

Date

2/3/94.

From

Bobwärts.

Ref

ES275.

Graham, herewith a copy of the latest
English Nature consent. I think it
encompasses all the current and
anticipated activities. Please let me
know if you have any questions.

Bobwärts.

Copy - Adam Ford.

Subject

Japanese
Knotweed

To Graham Vincent.

From Bob Watts

Date

31/1/94.

Ref

E5275

Graham, I have had discussions with Bob Stebbings and Gordon Wyatt regarding the invasive Japanese knotweed. The following is agreed -

- 1) Bob Stebbings to visit site 17/2/94 to remove Butterbur and mark area of Japanese knotweed.
- 2) Material excavated from the marked area is to be loaded into polythene lined skips for subsequent sampling as Asbestos contaminated soil. Holes in the polythene are to be repaired. On explosive clearance the material is to be disposed of as special waste and buried to a minimum depth of 3 metres.
- 3) The machine used to excavate this area is to be power washed when the area marked is removed to skips, and the arisings bagged and disposed of as special waste.
- 4) Excavation of the canal to the rear of L109. Areas will be identified by Bob Stebbings for preservation.
- 5) I attach a copy of Gordon Wyatt's letter on the subject.
- 6) It will not be possible to commence canal excavation at this location until these matters are completed.
- 7) Adam Ford has received an EN consent for work on the Barges ~ Bob Watts
copy AFord
B. Stebbings
G Wyatt

Subject **REHABILITATION OF AREAS
IN THE SSSI REQUIRING SMC
APPLICATION.**

To **Steve Chaddock**

Date 21st December 1994

From **Bob Watts**
Ref E5275/23/1/02

Steve,

Herewith Bob Stebbings' explanation of rehabilitation works in the SSSI. He will send a marked up plan tomorrow including the area around the Press House.

Regards

BOB WATTS.



WALTHAM ABBEY, FORMER RARDE

TREE PLANTING IN SSSI

1 Background

As a result of the necessary decontamination work, a large number of trees have been removed. In some areas this tree loss has caused a problem of actual and potential wind throw of remaining trees.

There has been a presumption in taking out sycamore, partly because it is an alien species to Britain and also, because there is no history of the species being used in any of the manufacturing processes which historically has taken place on site.

2 Requirement

There is a need to replant trees in order to establish a multi-aged structure in the woodland and to provide sheltered support for the existing large trees. Also, one of the principal reasons for the SSSI designation, was the presence of the largest heronry in Essex. These birds preferentially nest in the largest mature alders. (Other tree species on site do not have a branch structure conducive to holding the bulky heron nests.)

3 Tree species

Research into the archives, show three species of tree were grown Alder, *Alnus glutinosa*, Willow, *Salix sp.* and Alder buckthorn, *Frangula alnus* (formerly known as 'dogwood'). Willow remains as a frequent species across the site, mostly of old pollards, but alder occurs in most areas, sometimes as the dominant tree species.

4 Replanting

Seed collected from the SSSI has been germinated and pot grown, consequently, there are now approximately 3250 trees awaiting planting at the end of their first year. Some have reached one metre in height. No other tree species has been specially grown for replanting, but some of the locally rare Butterbur, rescued from near Building L108, also awaits replanting in appropriate places.

5 Aim

5.1 Alder trees - pot grown

In the areas which have been designated as decontaminated and ready for planting, trees will be planted at a random rate of about 2 metres apart.

No planting will occur closer to any built structure than 5 meters; and no closer than 3 metres to soil banks, canal paths or other earthworks.

Apart from the long-term aim of creating the opportunity of replacing the locally dominant sycamore, it is expected the traditional coppice regime will be re-established in some areas to be planted.

5.2 Willow

Although none have been pot-grown, the intention is to cut young growth from existing trees and plant one metre long stems, 300mm deep, pushed into the ground. These to be planted also, at about 2 metre intervals.

6 Tree protection

Deer, and to a much lesser extent, rabbits, have prevented re-growth of seedling tree species. Therefore, protection will be required for some of the trees by providing staked tubes to approximately one quarter of the replanting, including both alder and willow.

7 Tree management

No weeding or other management is intended in the first year's establishment phase. Thinning may be necessary in the longer term, as well as coppicing in some areas, but that will be subject to future decisions on the detailed use of the area.



please copy to
C Coggan and
M. Edgar.

G.V., A.P. 15/1/01
52/1/01.

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London Team

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R Watts Esq
C/o Royal Ordnance (South Site)
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Our ref: GW/AJP/14 WCY

17 October 1994

Dear Bob

**WALTHAM ABBEY SITE OF SPECIAL SCIENTIFIC INTEREST
EXCAVATION AND CAPPING OF CANAL BANKS AND ROUTES OF STEAM MAINS**

As you are already aware, English Nature is concerned by the proposed treatment of the above areas, as described in your letters of 6 September and 3 October and discussed at our meeting on 23 September 1994. Although the proposals were modified as a result of the meeting we still consider them to be potentially very damaging to the SSSI. You agreed to delay starting most of this work until after our next meeting on 19 October in order to give us an opportunity to consider the matter further; and for which we are extremely grateful.

I have spoken to Dr Derek Patch of the Forestry Authority's Arboricultural Information Service at Alice Holt, who confirmed my suspicion that the proposed works would result in the death of most of the trees affected and would also effectively prevent any future natural regeneration by inhibiting root development.

I have also spoken to the following persons and bodies about acceptable levels of residual asbestos:

1. Asbestos Unit, Technology & Health Sciences Division, HSE, Bootle, Merseyside
2. Mr Brunswick, HSE Asbestos Inspector, Chelmsford
3. Maxwell Edgar, Environmental Health Dept, EFDC
4. Colin Coggan, Clayton Environmental (consultants to EFDC).

All of these sources said effectively the same thing: that although asbestos is extremely dangerous when inhaled, asbestos in contact with soil is relatively harmless because the dampness inhibits the release of fibres into the air. This would seem to be supported by the results of the air monitoring on site, where it is my understanding that no significant positive results have

yet been recorded, despite the ongoing works and consequent disturbance of asbestos.

They were agreed that, in view of the likely damage to the SSSI and Scheduled Ancient Monument, the proposed works were not necessary. Instead they advised that a simple walk-over search and manual pick up of all visible asbestos would suffice. Any residual or buried asbestos would not present a danger provided that a good vegetation cover was maintained. This would have the dual effects of largely preventing the soil surface from drying out and of reducing wind velocities over that surface, so that in the event that any exposed asbestos did begin to dry out, it would be less likely to become airborne. They further recommended that access to the SSSI should be by controlled groups of visitors only in order to remove any risk of anyone digging up asbestos. This accords with our own desire for access to be controlled in order to reduce disturbance to wildlife.

We therefore urge you to consider the adoption of the above strategy in place of the more damaging remediation scheme currently being proposed.

I look forward to being able to discuss this matter further on Wednesday, 19 October, and, hopefully, to resolve this thorny problem once and for all.

Yours sincerely



Gordon Wyatt
Assistant Conservation Officer
Colchester

Cc Dr R Stebbings, RSC
Ms D Priddy, English Heritage

GV. AF.

15/1/01
P.2
52/1/01



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R Watts Esq
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Essex EN9 1AY

Our ref: GW/AJP/14 WCY

28 October 1994

Dear Bob

**WALTHAM ABBEY SITE OF SPECIAL SCIENTIFIC INTEREST
TREATMENT OF STEAM MAIN ROUTES, CANAL BANKS AND POND BANKS
CONSENT UNDER THE WILDLIFE AND COUNTRYSIDE ACT 1981**

Thank you for the minutes of your meeting with Bob Stebbings on 21 October 1994, which he has sent for my comments.

These modified proposals appear to adequately address our previous concerns. English Nature therefore consents to the carrying out of these operations as detailed in the agreed minutes of the meeting of 21 October 1994 and in sketches SK10/1A and SK10/2A (both as amended on 21 October 1994) and sketch SK10/4 of 3 October 1994.

Yours sincerely

Gordon Wyatt
Assistant Conservation Officer
Colchester



ENGLISH
NATURE

G.V., A.F. 15/1/01
52/1/01.

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London Team**

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Essex EN9 1AY

Our ref: GW/AJP/14 WCY

17 October 1994

Dear Bob

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EXCAVATION AND CAPPING OF CANAL BANKS AND ROUTES OF STEAM MAINS**

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Yours sincerely



Gordon Wyatt
Assistant Conservation Officer
Colchester

Cc Dr R Stebbings, RSC
Ms D Priddy, English Heritage



DRAFT PROPOSALS - DISCUSSION PAPER

WALTHAM ABBEY - TREE CARE

1. ROOTS

Tree roots are vital for two primary functions:-

- i. anchorage; and
- ii. absorption of nutrients and water (this process involves free access to oxygen).

While anchorage is provided by all roots, both surface and deep, feeding roots are close to the surface where nutrients are concentrated and where oxygen is readily available.

Damage to roots can take several forms and can lead to the death of trees. Firstly, removal of surface "feeding" roots reduces the ability of trees to absorb water and nutrients and can lead to wilting, chlorosis and increase susceptibility to disease. Secondly, the broken ends of roots are a source of infection by wood rotting fungi and other harmful organisms. Thirdly, damaged roots can lead to an increased chance of windthrow.

2. DECONTAMINATION

Decontamination, involving scraping rubbish away from trees, will have removed some of the feeding roots and deeper excavations eg. clearing canals, additionally will have removed anchorage. Therefore, it is most important to avoid any further action which could exacerbate the trees ability to recover. For many trees along the canal banks which have lost one side of their anchorage roots, a period of five years or more (depending on the size of tree etc) could be expected for the tree to regain adequate roots.

Actions to be avoided are:

- i. further mechanical damage to roots;
- ii. prevention of further reduction in the remaining roots ability to find nutrients and absorb water.

3. REMEDIATION

In the present context of the need to "lock in" residual contamination, particularly asbestos fibres, any "blanket" must contain:

- i. nutrients; and
- ii. provide a free draining "open" texture to allow oxygen unimpeded access to roots.

A "blanket" of impervious material must not be provided near trees.

The principal needs are to specify materials which fulfil the criteria specified in 1.3 (i) and (ii). Essentially, material such as "hoggin" should not be used but "as-raised" gravels, pea shingle etc as well as river loams (such that you have on site) could all be considered appropriate.

The final requirement concerns the depth of cover to be provided over remaining roots.

It is generally considered that the principal root plate covers an area which approximately reflects the span of the canopy. In, some dense forest grown circumstances, the canopy will not be as large as the intertwined roots from adjacent trees such as those growing like a large "hedge" along canal sides.

Over the root plate (or what remains) it is vital:

- i. to not exceed a finished soil profile which exceeds the pre-decontamination level; and
- ii. to err on the cautious side of not providing a fill depth which would prevent rapid tree root recovery.

4. RECIPE

In practical terms, where soil has been removed down to the clay, a 100mm soil layer should be provided over "Terran" to provide a nutrient rich source to aid root growth, overlain by gravels and preferably thinly covered with another 50mm soil. The maximum depth of materials should not exceed 225mm over any part of the root plates.



ENGLISH
NATURE

15/1/01 + RSC, GV, AF
Raughton, 18/1/01.

**Essex, Hertfordshire and
London Team**

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R Watts Esq
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Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Your ref: E5275/15/1/011
Our ref: GW/AJP/14 WCY

26 August 1994

Dear Bob

**WALTHAM ABBEY SSSI
KERB RE-ALIGNMENT TO BRIDGE 10 APPROACH
CONSENT UNDER THE WILDLIFE AND COUNTRYSIDE ACT 1981 (SECTION
28(6))**

Thank you for your letter and enclosures of 10 August 1994 regarding the above.

English Nature hereby consents to the carrying out of the proposed works as described on drawing 699/10. (The other proposed works to bridges 7, 8, 10, 11, 18 and 55 are already covered by our consents of 13 May and 24 June 1994.)

Yours sincerely

Gordon Wyatt
Assistant Conservation Officer
Colchester

copy to AF & GV.
File 15/1/01

The Robert Stebbings Consultancy Limited

Species
Ecologists
and Habitat
Assessors

74 Alexandra Road
Peterborough
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England PE1 3DG
Telephone: 0733 340318
FAX: 0733 897018
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FACSIMILE

ATTENTION OF: Mr Bob Watts

FAX NO: 0992 651611

ADDRESS: WS/Atkins, c/o Royal Ordnance

FROM: Dr Robert E Stebbings

DATE : 18 April 1994 Time: 10.15 am

NUMBER OF PAGES INCLUDING THIS PAGE: 2

MESSAGE:

Dear Bob

WALTHAM ABBEY

Hope you had a good holiday. No doubt the spring flowers were at their peak.

1. I had my meeting with prince Consultants (Richard James and Bernadette Higgins) last Wednesday. The outcome seemed to be they were surprised (!) that many of the ideas I suggested for access and interpretation were more or less exactly what they would like to work towards (finance permitting) and that wildlife issues were not likely to impinge significantly on what they consider as practical in the near future with projected visitor numbers.
2. Grey Wagtail - note herewith.
3. Heron and Kingfisher reports to follow by post.

4. **Building 27**

I examined this structure from the scaffolding and removed all plants of no importance in and around the areas of the ferns - the species of concern.

- a. There were no plants of significance on the roof.
- b. The ferns were all on the brickwork from the top-most row of bricks downwards. The plants of importance were on the south, west and north sides. There was no plant on the north-east, east, or south-east of value - ie. within the area encompassed by the ivy. All that should be removed. (Interesting that the only remaining rainwater gutter is amongst the dense ivy!).
- c. The cement 'waterproofing' on the roof is mostly broken up and lifted and no-doubt will be replaced. Most materials used on the roof, whether just new cement or waterproofing agents (eg. bitumastic etc), will cause problems for the ferns. Also, if any herbicide was to be used to kill roots it will need to be done very carefully.

Conclusion - If the ferns are not to be significantly harmed care will be needed in the re-roofing phase. In due course it would be helpful to know what work is planned so that safeguards can be considered.

5. **Tree protection - clearance of canal from Hoppit Pool - Hoppit Road**

Adam asked my advice concerning the stability of trees on the east side of the cleared canal. In my opinion, because only two largish roots (c. 100mm) had been severed, the remaining trees were likely to remain stable. I advise against any further tree removal (quite a few large trees have gone already in that area) and exposure over the H- area has significantly increased the potential for wind throw further east across the site. The remaining ash trees are reasonably light-headed and hopefully they will resist winds successfully.

However, it would be helpful if the canal could be back filled at the earliest opportunity so that ground water around the roots is improved. This is particularly important at this time when trees have large demands for water. New root growth needs to be encouraged as quickly as possible so the full advantage of this years growing season is realised.

Best wishes.



WALTHAM ABBEY SSSI

GREY WAGTAIL NESTING - NEW SLUICE, NEWTON'S POOL

On my recent visit to Waltham Abbey (13 April 1994), the sluice was carefully approached to determine whether the birds were actually nesting. Tony Bell on his earlier visit (7 April) saw a pair of birds feeding around the Pool, but no bird on the nest, which he considered was incomplete. He could not inspect the nest closely through lack of a ladder.

I found a grey wagtail sitting tightly on her nest - ie. was not frightened away by my careful but close presence around the sluice railing. Although the bird rotated within the nest it did not leave, within the period of approximately 11.45 - 15.00 hrs when several bouts of observations were made. No other bird was noted.

Conclusion

Between 7-13 April laying of the clutch was completed (usually 4-6 eggs) and therefore hatching could be expected by 24 April and fledglings should leave the nest by 7 May.

Therefore it could be safe to paint the railings on Monday 9 May.

Note: This species is known to have two and even three broods in one year, so that painting should not be delayed for more than a day or two after the 9 May. If a delay was necessary, the nest site would need re-checking before work started.

Copied to AF, BS & GV. 31/1/94.




East Region Colchester Office

Nature Conservancy Council for England

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R E Watts Esq
W S Atkins Environmental
C/o Royal Ordnance plc
Sewardstone Road
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Essex EN9 1AY

Our ref: GW/AJP/14 WCY

28 January 1994

Dear Bob

**WALTHAM ABBEY SSSI
DECONTAMINATION OF FORMER CANALS RUNNING PAST L108 AND L109**

Please find enclosed a consent for the removal and subsequent reintroduction of Butterbur (Petasites hybridus) as discussed on 21 January 1994. I have also issued a consent to Adam for the excavation of the four barges in the canals.

The wall and canal bank at the rear of L109 supports a flourishing colony of Hartstongue Fern (Phyllitis scolopendrium) and it would be much appreciated if at least some of this could be retained.

Please note that there is a patch of Japanese Knotweed (Reynoutria japonica) between L108 and L109. This alien species is both persistent and invasive; and it is now an offence to introduce it to the wild. Arisings from this area should therefore be landfilled to a **minimum depth of 3 metres** in order to ensure that it does not continue to grow.

Yours sincerely



Gordon Wyatt
Assistant Conservation Officer



R E Watts Esq
W S Atkins Environmental
c/o Royal Ordnance plc
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Our ref: GW/AJP/14 WCY

28 January 1994

Dear Bob

**WALTHAM ABBEY SITE OF SPECIAL SCIENTIFIC INTEREST
DIGGING UP, REMOVAL FROM SITE, AND SUBSEQUENT REINTRODUCTION OF
BUTTERBUR (Petasites hybridus)
CONSENT UNDER THE WILDLIFE AND COUNTRYSIDE ACT 1981 (SECTION
28(6))**

Further to our recent discussions and to Bob Stebbings' report of 23 November 1993 and letter of 27 January 1994, English Nature hereby consents the following procedure for dealing with Butterbur (Petasites hybridus) which is growing along the line of the former canal near building L108:

1. The plants are to be dug up by Dr Robert Stebbings or his nominated representative and transferred to suitably sized plots along with an adequate quantity of a suitable growing medium. It is recommended that the imported soil should be used for the majority of the plants; with a sterile compost for the remainder. This is to take place as soon as possible; but not under frosty conditions.
2. The plants are to be transported to Dr Stebbings' home (and/or other suitable site ~~if~~ agreed in consultation with ourselves).
3. The plants are to be maintained in a viable condition at the above site until conditions at Waltham Abbey are deemed to be satisfactory for their reintroduction. This decision will be reached in consultation between Dr Stebbings, English Nature and yourself.

4. The plants are to be reintroduced to the SSSI; to their original site and/or to other more suitable sites (to be decided in consultation as above).

Yours sincerely

A handwritten signature in cursive script that reads "Gordon Wyatt".

Gordon Wyatt
Assistant Conservation Officer

The Robert Stebbings Consultancy Limited

Species
Ecologists
and Habitat
Assessors

74 Alexandra Road
Peterborough
Cambridgeshire
England PE1 3DG
Telephone: 0733 340318
FAX: 0733 897018
(International code: 44)

FACSIMILE

ATTENTION OF: Mr Adam Ford

FAX NO: 0992 651611

ADDRESS: c/o British Aerospace Defence Ltd

FROM: Dr R E Stebbings

DATE : 28 January 1994 Time: 1.30pm

NUMBER OF PAGES INCLUDING THIS PAGE: 3

MESSAGE:

Dear Adam

Will the following be okay as jointly from yourself and Wayne Cocroft?

WALTHAM ABBEY - A UNIQUE INDUSTRIAL HERITAGE

For over three hundred and fifty years the site of the Royal Gunpowder Factory at Waltham Abbey played a major role in explosive manufacture and research. This 75 hectare site, with a fully documented history and in an excellent state of preservation, displays the development of gunpowder and other technologies of explosives manufacture in a single monument.

To carry out a full survey of the site, the Royal Commission on the Historical Monuments of England (RCHME) brought together its varied expertise. Archaeological surveyors and architectural recorders worked closely with the aerial photography unit to build up a detailed picture of this internationally important site. At the same time a voluminous archive of historic maps, plans, building drawings and technical manuals, as well as historic documents and photographs, has been drawn on to aid understanding of the specialised manufacturing processes.

Among the many outstanding structures at Waltham Abbey are the buried remains of late 17th century gunpowder mills: an internal canal network at two levels; abandoned barges *in situ* and a pump house containing the only known surviving example of water-driven hydraulic gunpowder press in the country.

The factory had its origins in a small 17th century commercial enterprise that rapidly became one of the main suppliers of gunpowder to the Board of Ordnance. It was purchased by the government in 1787, just before the Napoleonic Wars, and was substantially expanded and rebuilt. During the late 19th century armaments technology developed quickly and specialised buildings were constructed for the manufacture of new products including specialised cannon powders, guncotton and cordite. During this century Waltham Abbey was responsible for the research and development of a number of high explosives including Teteryl, TNT and RDX.

Waltham Abbey was abandoned during the Second World War in favour of factories less easily accessible to continental bombers, and after the war it was used as a government defence research establishment. This prevented its two hundred standing structures being vandalised. It is now being decontaminated and policies are being drawn up to promote the beneficial reuse of the site and safeguard its unique industrial landscape.

Acting on the information gathered by the RCHME, English Heritage designated three-quarters of the site as a Scheduled Ancient Monument. They also listed nineteen buildings on the rest of the site, one at grade 1.

On the positive side, this has ensured the preservation of a truly remarkable industrial landscape for future education and enjoyment. For the parties involved in the clean up and decontamination operation this decision was regarded as a legislative minefield. In order to preserve the importance of the site.

The Ministry of Defence saw the need for and appointed an Archaeological consultant to help ensure accidental damage did not occur. The immediate concern was to make sure that the decontamination operation was not interrupted by the new restrictions. The second was to have an advisor on hand who could act as the liaison between MoD and their contractors and English Heritage.

The open co-operation displayed throughout the project, the new found understanding of the sites heritage and the willingness to adapt have meant that the clean up has proceeded without interruption and most important without damaging the monument. With this continued team work the future of Waltham Abbey Royal Gunpowder Factory seems set on becoming every bit as interesting as its past.

Wayne Cocroft & Adam Ford

January 1994

TRANSACTION REPORT

28-JAN-94 FRI 11:24

FOR: BOB WATTS WSA

0992651611

SEND

DATE	START	RECEIVER	PAGES	TIME	NOTE
28-JAN	11:22	0733897018	3	2'41"	OK

TO: Bob Stebbings
 COMPANY: R.S.C. Ltd
 DATE: 28.1.94
 REFERENCE: Sanctuary Article

FROM: Adam Ford.
 FAX NUMBER: 0733 897018
 LOCATION: W/Abbey
 NO.OF PAGES INC TOP SHEET: 3

SUBJECT:

Here's a copy of the RCHME article in this case for the Council for British Archaeology Newsletter. Also included my little effort which is really ~~not~~ meant to be tacked on the end of the Commission blurb. I hope it's ok - perhaps a bit flowery but not much detail could be included!

Regards
Adam

ADAM FORD B.A. (HONS)
Archaeological Consultant

C/o British Aerospace Defence Ltd
Royal Ordnance Division
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Telephone (0992) 651611
Facsimile (0992) 651611

FACSIMILE TRANSMISSION

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COMPANY: R.S.C. Ltd
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Regards
Adam

Archaeology popular in schools

A recent analysis of statistics

CBA

COUNCIL FOR BRITISH
ARCHAEOLOGY

DECEMBER 1993

New Series Number 9 ISSN 0269-1906

NEWS

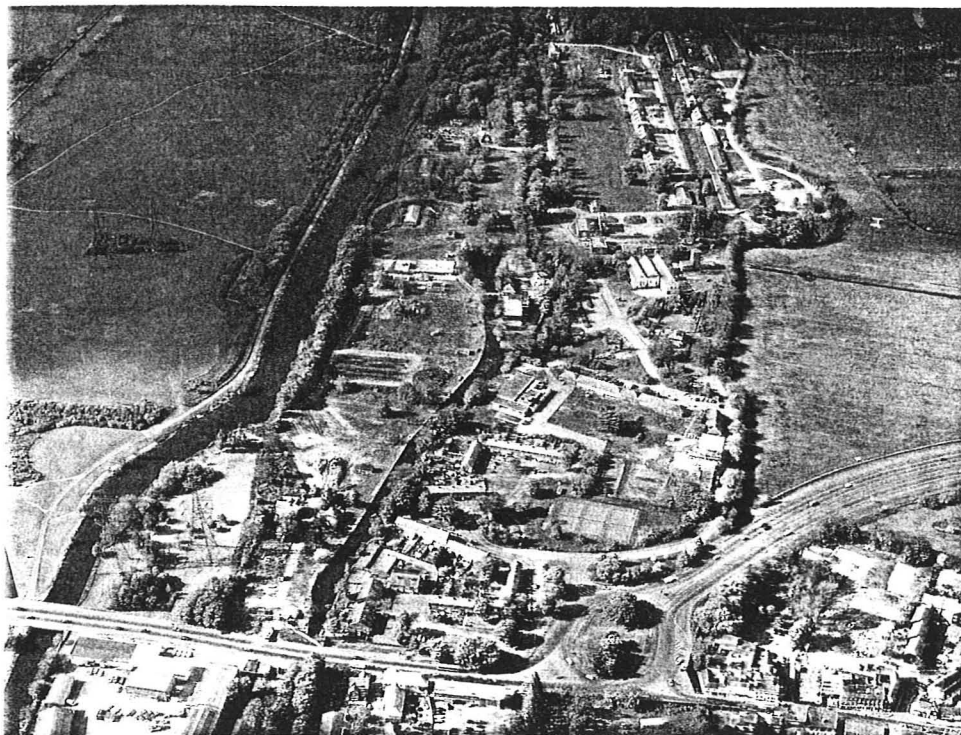
B R I T I S H A R C H A E O L O G I C A L

Michael Thompson is the new chair of CBA Mid Anglia following the retirement of John Alexander.

Hi White has recently been appointed Sites and Monuments Officer for the West Midlands. ■

CBA NETWORK

Survey with a bang



Northern half of the Royal Gunpowder Factory, over two kilometres in length from end to end

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example of a water-driven hydraulic gunpowder press in the country.

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Wayne Cocroft ■

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On the positive side this has ensured the preservation of a truly remarkable industrial landscape for future education and enjoyment. For the parties involved in the clean up operation this decision was regarded as a legislative minefield.

With a Nature consultant already advising on the activities within the SSSI, the Ministry of Defence saw the need for and appointed an Archaeological consultant. The immediate concern was to make sure that the decontamination operation was not interrupted by the new restrictions. The second was to have an advisor on hand who could act as the liaison between MoD and their contractors and English Heritage.

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Adam Ford
Consultant Archaeologist
January 1994

TRANSACTION REPORT

27-JAN-94 THU 08:40

FOR: BOB WATTS WSA

0992651611

SEND

DATE	START	RECEIVER	PAGES	TIME	NOTE
27-JAN	08:39	0733897018	1	52"	OK

TO: Bob Stebbings
 COMPANY: R.S.C. Ltd
 I E: 27 January 1994
 REFERENCE: Sanctuary article.

FROM: Adam Ford.
 FAX NUMBER: 0733 897018
 LOCATION: W. Abney
 NO.OF PAGES INC TOP SHEET: 1

SUBJECT:

Bob,
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Any problems, please give me a bell.

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ADAM FORD B.A. (HONS)
Archaeological Consultant

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Royal Ordnance Division
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Telephone (0992) 651611
Facsimile (0992) 651611

FACSIMILE TRANSMISSION

TO: Bob Stebbings
COMPANY: R.S.C. Ltd
I E: 27 January 1994
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FROM: Adam Ford.
FAX NUMBER: 0733 897018
LOCATION: W. Abbey
NO.OF PAGES INC TOP SHEET: 1

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Any problems, please give me a bell.

Regards
Adam

SPECIFICATION FOR LANDSCAPE WORKS
TO ALDER AVENUE, RARDE SITE NORTH
WALTHAM ABBEY, ESSEX

for

Ministry of Defence
Central Disposals Unit

Landscape Architects
Higson Pearson
Lloyds Bank Chambers
67b High Street
Stony Stratford
Milton Keynes
MK11 1AY

November 1993

SECTION 1 : PRELIMINARIES

A Definitions appertaining to this document

Words importing the singular only also include the plural and vice-versa where the context requires.

The following abbreviations are used:

BS British Standard Specification

mm Millimetre

cm Centimetre

m Metre

m² Square metre

m³ Cubic metre

kg Kilogramme

The term "The Works" shall mean the whole of the works envisaged by this Contract.

The terms "approved", "directed" or "selected" shall mean the written approval, direction or selection of or by the Landscape Architect. Any unauthorised alteration or qualification may lead to disqualification of the tender.

It shall be understood that tenders will be submitted without charge and that the Employer will not necessarily accept the lowest or any tender.

Difficulty is sometimes experienced in producing photocopies of priced tender documents owing to the faintness of entries. Tenderers are therefore requested to price the Schedule in black ink or type.

B Preliminary Investigation

The Contractor shall satisfy himself as to the supply of and conditions affecting labour and materials and all local conditions and restrictions affecting the works, and shall allow for all costs and expenses incurred in maintaining an adequate and effective labour force on the works, including any necessary importation.

Before tendering the landscape contractor shall visit the site and make himself fully conversant with all site conditions, means of access, nature of ground etc., and shall satisfy himself as to the supply of and condition affecting labour. No claim made by the landscape contractor will be admitted on the ground of deficiency of knowledge of such matters.

The Contractor will be deemed to have visited the site and to have carried out any investigations that he may consider necessary to satisfy himself of the ground conditions, the availability of water and electricity for any temporary supplies that may be required in carrying out the works, the extent, character and accessibility of the site and all other conditions affecting the work, as no claim on the ground of lack of knowledge in any respect will be entertained.

A Name of Parties

EMPLOYER

Ministry of Defence
Central Disposals Unit
Room C2/6
Leatherhead Road
Chessington
Surrey
KT9 2LU

SITE CONTACT

Mr. G. Vincent
Tel: 0992 700296

CONSULTING LANDSCAPE ARCHITECTS

Higson Pearson
Lloyds Bank Chambers
67b High Street
Stony Stratford
Milton Keynes
MK11 1AY

Tel: 0908 566974

The term 'Landscape Architect' wherever used in this document shall be deemed to include their representatives.

A Location of and access to the site

Arrangements for visiting the site should be made by contacting Mr. G. Vincent Tel No. 0992 700296 at least 24 hours prior to the intended visit. A pass will be made out for named visitors and held at the Gate House. (See location plan).

B Limitations of the site

The site is restricted to a 10 metre strip either side of Long Walk (refer to location plan).

C General description of the works

Supply and planting of standard alder trees within established avenue.

D Drawings

The following drawing used in the preparation of this Specification will form part of the Contract and copies are issued with the tender documents. The drawing shall be used to measure the quantities for tender pricing.

Drawing Nos. 267.100 and 267.101.

E Plant, tools and vehicles

The Contractor is to allow for providing all necessary plant, tools and vehicles.

The Contractor's attention is drawn to the need to provide proper metric tools, equipment and training aids. The Contractor is strongly urged in his own interests to prohibit the use of equipment graduated in other than SI units (eg centimetres) in order to reduce the possibility of errors.

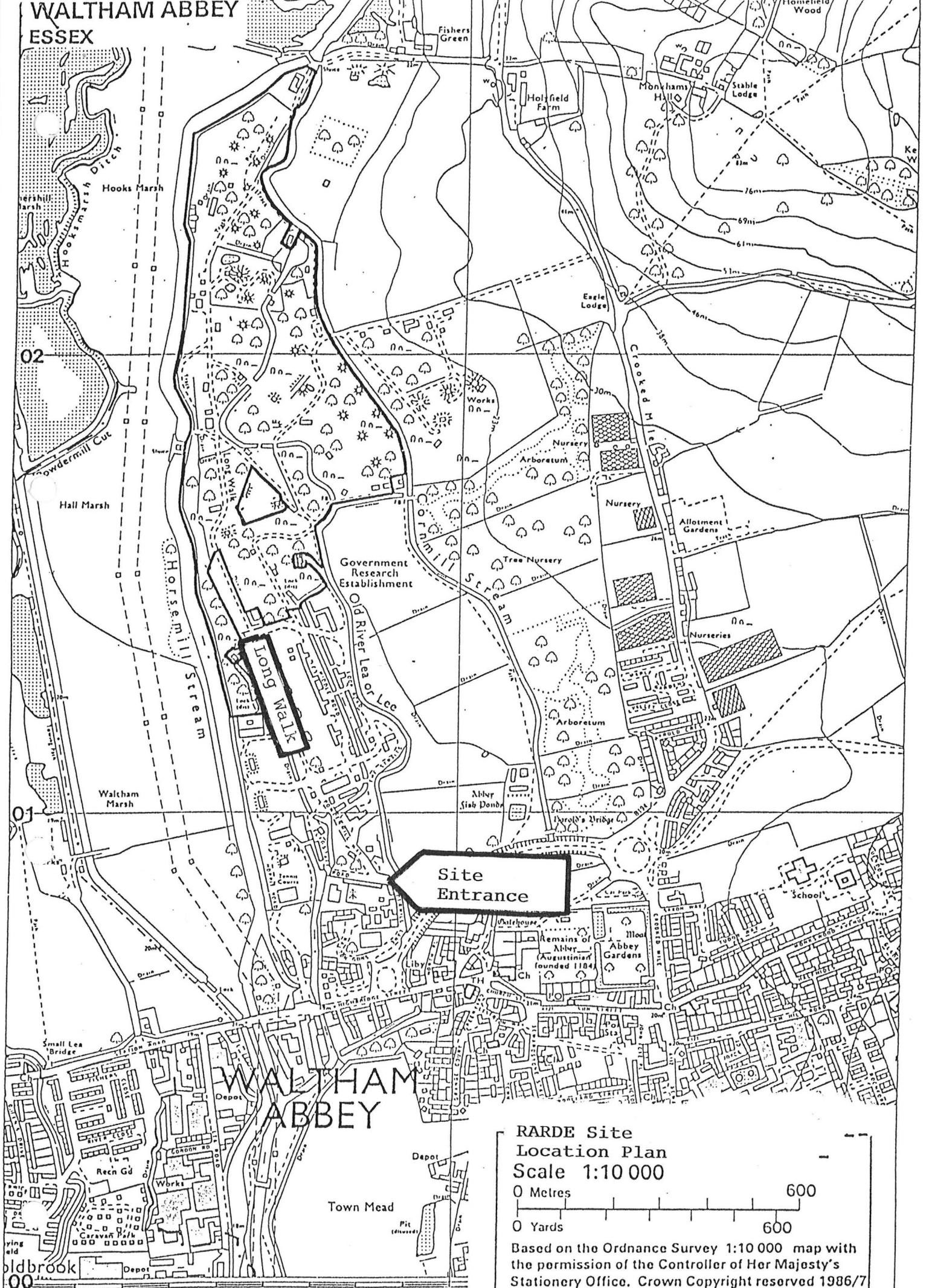
F Safety, health and welfare

When ever on site the Contractor will abide by the following site rules, and abide by any further instructions issued by the client's representative on site.

Site rules:

1. Radio transmitters, cameras and recording equipment must not be brought into the site except with written permission.
2. This site is designated a HARD HAT SITE. An approved hard hat will be worn at all times.

**WALTHAM ABBEY
ESSEX**



**Site
Entrance**

**RARDE Site
Location Plan
Scale 1:10 000**

0 Metres 600

0 Yards 600

Based on the Ordnance Survey 1:10 000 map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved 1986/7

3. Do not pass NO ENTRY signs.
4. Do not remove barriers or temporary fences.
5. Smoking on site is forbidden except in designated mess room.
6. Do not light fires.
7. Keep to paths and roadways, unless written permission is given by R.O. staff to the contrary.
8. Observe the maximum speed limit of 10mph.
9. In the event of an emergency the instructions of the security force and R.O. staff must be obeyed.
10. Do not enter any unoccupied buildings without the express written authority of a member of R.O. staff.
11. No matches, lighters and other sources of ignition, including welding equipment without the possession of a SS3 Form to be taken on to the site.
12. No portable electrical equipment, including drills without the possession of a SS3 Form.
13. Due care is to be observed at all times to avoid endangering wildlife within the site.
14. All roads and access pathways are to be kept clear at all times.
15. Private vehicles are only permitted to be parked in designated car parks, unless specific permission is given to the contrary by a member of R.O. staff.
16. Where instructed, you must wear specific protective equipment and clothing.
17. Observe and do not exceed axle loadings on all site bridges.

**NON COMPLIANCE WITH ANY OF THE ABOVE WILL RESULT
IN THE OFFENDER BEING ESCORTED OFF THE SITE**

Allow for complying with all relevant codes, regulations, agreements and statutes relating to safety, health and welfare in the building industry such as the Construction (Health and Welfare) Regulations, Factories Acts, Health and Safety at Work Act and the like and all amendments thereto.

The Employer's Safety Control Officer shall be allowed access to the site to enable him to make any recommendations he feels necessary with regard to safety, health and welfare matters.

Where an accident occurs on site which is notifiable under the Notification of Accidents and Dangerous Occurrences Regulations 1980 to HM Factory Inspectorate a copy shall be sent to the Employer's Safety Control Officer.

A Site Management costs

The Contractor is to allow for paying all on and off site management costs including cost of Foreman-in-Charge.

B Labour on-costs

The Contractor is to allow for paying all contributions costs or expenses arising from employment of labour.

C Safeguarding the works

The Contractor is to allow for safeguarding the works, materials and plant against damage or theft including all necessary watching and lighting for the security of the works and for providing shelter and fuel for any watchmen as required.

D Prevention of damage to highways

Damage to any highway caused by vehicles used in connection with the works shall be made good by or at the expense of the Contractor who shall indemnify the Employer against any liability, loss, claim or proceeding whatsoever arising under any Statute or at Common law in respect of any such damage.

For the purpose of this clause the term "highway" shall be deemed to include any road, footpath or bridleway on or off the site used by the public together with any kerbs, banks, verges, street furniture, gullies, sewers, street lighting, public utility services or tree planting associated therewith.

The Contractor shall upon taking possession of the site, inspect, establish and record with the Landscape Architect the condition of existing roads, etc. Failure by the Contractor to carry out this inspection shall not relieve him of responsibility for any later damage which may be caused or the requirement to make good all damage to the satisfaction of the Landscape Architect.

A Safety on Highways

The Contractor shall comply with all traffic regulations and attention is drawn to the need to ensure that due care is given to all matters of safety within proximity to and on the public highway. In particular, the Contractor should ensure that all road workers, supervisors and managers are familiar with and follow the principles set out in the 'Department of Transport' booklet 'Safer Road Works Ahead' available from HMSO. Publications Centre, PO Box 276, London SW8 5DT, tel: orders 071.873.9090.

B Prevention of mud and dirt on roads

The Contractor shall ensure that all vehicles leaving the site are clean and properly loaded, and shall take promptly and unflinching any other precautions necessary to keep the approach roads, footpaths etc. to and on the site free from dirt, mud and debris at all times.

C Protection of public and private services

The Contractor shall allow for upholding and protecting all pipes, ducts, sewers, services, mains, overhead cables etc, and for making good at his own expense any damage caused by the carrying out the works.

Notwithstanding any information which the Landscape Architect may make available to the Contractor regarding the position of existing services, etc., it shall be the responsibility of the Contractor to satisfy himself as to their accurate location and condition.

The Contractor shall make all necessary arrangements with the Authorities concerned for the diversion, if necessary, of any such existing services require for the purpose of this Contract.

A Protection of waterways

The Contractor is to allow for taking all precautions to ensure the protection of all streams and waterways against pollution caused by carrying out the works.

B Police Regulations

The Contractor is to allow for complying with all Police Regulations and Restrictions. Special attention must be paid to the use of reflective safety clothing and the correct procedures in the movement of construction and delivery vehicles.

C Abatement of nuisance

The Contractor shall take all necessary measures to minimise nuisance to occupiers of properties adjoining the works and shall comply with any instructions given by the Landscape Architect in this respect.

D Water

Allow for providing clean fresh water for use on the Works, all temporary storage, plumbing, service connections etc., and clearing away and making good on completion.

E Temporary roads

Allow for providing and maintaining all necessary temporary roads, hardstanding and crossings on the site.

F Vehicles parks

The arrangements for on-site parking shall be agreed with the Landscape Architect before commencement of the Works. The parking of construction plant or vehicles on public highways will not be permitted.

G Temporary buildings for use by the Contractor

The Contractor is to allow for providing and maintaining any necessary temporary accommodation for the use of the Contractor.

Notwithstanding anything expressed or implied to the contrary elsewhere in these conditions, the Contractor shall ensure that no caravan within the meaning of that expression in the Caravan Sites and Control of Development Act 1960 (as amended) is stationed or used on the site for the purpose of human habitation without the prior written permission of the Landscape Architect.

A Rates on temporary buildings

The Contractor is to allow for the payment of rates on all temporary buildings.

B Temporary fencing etc.

The Contractor shall allow for providing and maintaining all necessary temporary fencing, planked footways, guard rails, and the like together with notices, signalling and lighting for the protection of the public having due regard for the needs of blind and disabled persons and for meeting the requirements of any local or other authority.

C Name board

No trade board or other form of advertising will be permitted without the Landscape Architect's written approval.

D Protecting the works

The Contractor shall allow for all necessary measures to protect the Works until handed over completion.

F Removing rubbish and cleaning

Allow for removing all rubbish and debris over the whole of the site caused by the operations during and at completion of the Works.

Allow for leaving the whole of the Works to the satisfaction of the Landscape Architect on completion.

THE FORM OF AGREEMENT AND CONDITIONS OF CONTRACT

The Form of Agreement and Conditions of Contract will be those contained in the Form of Agreement for Landscape Works published for the Joint Council for Landscape Industries by the Landscape Institute, April 1985 incorporating January 1991, January and September 1992 revisions.

The Contractor shall allow for compliance with these conditions as amended and amplified below:

Clause 2.1 Commencement and Completion

The works may be commenced on 1 December 1993 and shall be completed by 30 January 1994.

Clause 2.3 Damages for non-completion

INSERT: 'at the rate of £50 per week'.

Clause 2.7A (Post-Practical Completion)

Any avenue trees found to be defective within 24 months of the date of Practical Completion and are due to materials or workmanship not in accordance with the contract shall be replaced by the Contractor entirely at his own cost unless the Landscape Architect shall otherwise instruct. The Landscape Architect shall certify the dates when in his opinion the Contractor's obligations under this Clause have been discharged.

Clause 2.7B (Post-Practical Completion)

DELETE: the whole of the Clause

Clause 4.5 Contribution, Levy and Tax Changes

DELETE: the whole of the Clause

Clause 4.6B Fluctuations

DELETE: the whole of the Clause

Clause 6.2 Injury or damage to property

Insurance cover referred to above to be not less than £1,000,000 (One million pounds)

Clause 6.3A Insurance of the Works

INSERT: 'Value of the works plus 10%'

Clause 6.3B Insurance of the Works

DELETE: the whole of the Clause

Clause 6.5B Malicious Damage or Theft

DELETE: the whole of the Clause

SECTION 2 : SPECIFICATION

GENERAL CLAUSES

A Pricing

The Contractor shall allow in his prices for items contained in the Measured Work section for all items required to be provided and described in these Preambles.

B Plant material supplied by the Contractor

All plants shall be supplied by the Contractor and shall be obtained from an approved nurseryman. Before stock is purchased the Landscape Architect reserves the right to inspect the nursery and select stock or the Contractor shall provide samples of materials to be supplied as specified for the approval of the Landscape Architect before placing an order. The Contractor shall ensure that all materials used are similar in size and quality to the approved and inspected samples and are in accordance with the latest published edition of BS 3936 or are to a higher standard where specified.

All plants supplied shall be exactly true to name as shown on the drawings and plant schedule, i.e. variegated, lacinated varieties, etc, will not be accepted where the species has been specified and any variants so supplied must be replaced by the correct species, at the Contractor's expense.

No variation from the plant schedules will be allowed except on written instructions from the Landscape Architect. The permission for the use of substitute material will only be given when the Contractor has satisfied the Landscape Architect that such plant material could be obtained at the time of tender submission and that the Contractor subsequently ordered the plant material at the earliest opportunity.

The submission of a tender shall imply that the Landscape Contractor is able to obtain all the materials specified in the Contract documents

C Replacement of plants

The Contractor shall make good, at his own expense, all losses of trees, shrubs and other material from whatever cause other than vandalism. Losses will be judged on whether plants are actively growing during the late summer period after planting when a plant check will be made by the Landscape Architect.

Replacement stock shall be of an equal size and specification to that previously supplied, showing vigorous growth and free from disease. Planting operations shall be in accordance with the Specification.

A Protection of completed work

The Contractor will be responsible for all temporary protection to existing vegetation and newly planted and seeded areas during the contract.

The Landscape Architect reserves the right to insist on the proper protection of seeded areas and the contractor shall allow for covering seeded areas during subsequent preparation and planting operations with tarpaulins, boards or other means as appropriate. Any damage to seeded areas shall be reinstated and maintained until established at the Contractor's expense.

B Provision of tip

The Contractor shall provide at his own expense a tip for all surplus excavated material, stones, prunings, grass cuttings and the like and pay all transportation charges to the tip. No bonfires are allowed on site.

C Topsoil and levels

All areas to be planted and seeded with grass will be roughly graded and topsoiled by the Main Contractor. The Contractor is to satisfy himself that the soil levels are adequate before work commences, and to notify the Landscape Architect of any discrepancies immediately.

SITE PREPARATION

D Existing vegetation

The existing trees and shrubs are to be retained unless otherwise specifically instructed. Cultivation operations around existing trees must be carried out with hand tools taking care not to disturb the root systems or cause damage to trunks and branches.

The existing ground flora is to be retained where indicated on drawing and extra care must be taken with preparatory operations not to disturb the natural cover.

A Existing inspection covers

The Contractor must ensure that for the duration of the contract existing inspection covers, survey stations and other permanent and temporary markers placed by others are not damaged or buried under soil.

B Minor grading

The Contractor is to grade and cross grade over topsoiled areas to eliminate all local low or high spots and abrupt changes of level, marrying in with existing levels where these are left undisturbed.

C Additional topsoil

The Contractor is to provide additional topsoil only if specifically instructed by the Landscape Architect. Any new topsoil is to conform with B.S. 3882:1965(1978) and a sample load must be supplied for inspection prior to placing an order. Topsoil shall be from an approved source obtained from the top 150mm of ground. It shall be fertile with a humus and fibre content, free from chemical or other pollution, pests, obnoxious weed, roots, plants and rubbish.

PLANTS AND PLANTING

D Trees generally

Trees shall be nursery grown regularly transplanted with bushy well proportioned growth according to the characteristic habit of the species and the type specified. They shall have a well developed healthy fibrous root system in balance with the size of plant supplied.

E Heavy standard trees

The stem girth shall be as specified at 1m. above ground level, the tree shall have a clear stem of 1.8-2.1m. above ground level with an overall height of 3.6-4.25m. and a branch spread of 1.0-1.5m. The head shall have a clear central leader unless otherwise specified.

A Transport, damage, temporary storage

The Contractor shall include for packing, loading and transporting plant material, trees, shrubs etc from the Contractor's nurseries to the site.

All trees, shrubs and hedging shall be adequately and carefully packed and protected during transport to the site to prevent damage. If, in spite of precautions, roots, branches, or shoots suffer slight damage they shall be carefully pruned and large wounds shall be treated with Arbrex. If major damage has occurred the plant or tree shall be replaced at the Contractor's expense. If the plants are not to be planted within 24 hours of delivery they shall be heeled in by placing the roots in a prepared trench, covering them with fine soil and well firming or watering in to prevent air pockets.

B Planting Season

All trees and shrubs listed in the schedule shall be planted between 31 October and 31 March or in accordance with the Landscape Architect's Instructions. The planting season is dependent on climatic conditions influencing the lifting and planting of plant material. Because of these factors the Contractor should note that the full range of plant material may not be available for the start of the planting period and the Contractor should programme his planting operations accordingly. Containerised plants, however may be planted at other times of the year.

The Landscape Architect reserves the right to suspend preparatory work or planting during adverse weather conditions or when the ground is waterlogged, frozen or covered in snow.

C Planting Compost

Planting compost shall be an approved organic rich tree and shrub planting compost with a non-peat or low-peat content, such as Bentley's 'Growtree'. During planting operations quantities of 'Growtree' or similar product to the approval of the Landscape Architect shall be evenly mixed with topsoil backfilling as follows:-

Standard tree pit - 1 80 litre
bag per pit

Morestar 'Roots' or other similar approved compost may also be used, following manufacturer's recommendations, as agreed with the Landscape Architect.

A Fertilizer

Supply Fisons Ficote 140 (16-8-7) or other similar approved fertilizer and spread over backfill material to tree pits immediately after planting at the following rates:-

Standard trees:

120-140mm girth - 480 grammes/pit

B Tree Stakes

Supply straight pointed stakes of round section of larch, oak or chestnut. The bark shall have been peeled and the stake impregnated in accordance with BS. 4072. Stakes for all classes of standard tree shall be 2.5m long x 75mm minimum top diameter and pointed at the heavy end. Stakes for feathered trees shall be 2m long x 50mm minimum top diameter.

Drive stakes into the bases of tree pits prior to planting trees.

C Tree ties

The ties shall be Toms rubber tree ties or other similar approved, average 300mm. long, including a resilient spacer block shaped for a round stake.

D Deer guards

Supply and fix 1.8m high shelter guard, 9cm diameter with polythene sheet bonded to the lowest 60cm of the guard. The guard will be stapled to each tree stake to ensure both tree and stake are inside the guard.

Suitable shelter guards are available from Acorn Planting Products Ltd 0508 528763 or other similar approved product.

E Setting out trees

Tree stakes shall be set out on site well before planting and positions approved by the Landscape Architect before planting takes place. Trees shown at regular spacings shall be accurately and evenly spaced in true lines. Trees shown in informal groups shall be set irregularly to achieve a natural effect.

A Planting trees

Standard tree pits shall be excavated 1000mm diameter x 600mm deep below finished ground level. All topsoil shall be set aside for re-use and all surplus excavated material removed from site. The bottom of the pits shall be broken up 150mm deep, the sides scarified and any extraneous matter removed from site. The pits shall be backfilled with topsoil set aside and additional topsoil from the topsoil heap on site.

Trees shall be planted to the depth of the nursery soil mark on the stem with their roots fully spread. The topsoil and tree compost backfilling shall be used to cover the roots and distributed amongst them by gently shaking the tree up and down. The backfilling shall be firmed down with the foot after 75-100mm covers the roots and built up in layers, each well consolidated, leaving the final level 50mm above surrounding paving or ground level.

B Staking and tying trees

Trees shall be secured to one straight pointed stake . All stakes shall be set at least 750mm below ground level or to a greater depth to ensure stability. Stakes shall have a clear height above ground level appropriate to the height of the tree.

Approved tree ties shall be fixed by the Contractor. Ties shall be nailed to the stake.

C Watering plants

When considered necessary by the Contractor he shall, during his routine maintenance visits, water trees, shrubs, turf, grass seed and other planted areas in order that the entire tree pit or planted area is moistened to field capacity to ensure the establishment and growth of plants/grass.

It is the Contractor's responsibility to ensure that watering is undertaken when necessary but the Landscape Architect must be notified beforehand of the Contractor's intention to undertake such watering operations so that a true record may be kept.

To comply with this Clause, the Contractor is to allow for the provision of water, water carts or hoses with a fine rose attachment or sprinklers at normal mains pressure, allowed to run until the full depth of topsoil specified

has reached a point where full absorption is achieved over the areas of all trees, shrubs and grass on each occasion. The Contractor is to include and state in his tender the cost of compliance with this Clause so that the cost of visits can be deducted in whole or in part if not required to be used.

A Practical Completion

The Contractor is entitled to a Certificate of Practical Completion for planting when all the planting works to trees, shrubs and other plants have been completed to the satisfaction of the Landscape Architect, the site tidied up and all the Contractor's plant removed.

**SECTION 3 : MAINTENANCE UP TO THE END OF THE
DEFECTS LIABILITY PERIOD**

A Generally

The Contractor shall maintain all areas during the progress of the works up to Practical Completion and during the following 12 months Defects Liability Period.

The Contractor shall allow for subsequent firming up of trees, shrubs and plants after periods of frost by carefully treading around roots during the Defects Liability Period. The Contractor shall keep all planted areas free from weeds by either hoeing over and hand weeding or by chemicals means during the growing season and until the end of the Defects Liability Period.

B Handwork maintenance in new and existing grassed areas

The Contractor's rates for maintaining grass areas shall allow for all necessary handwork around trees.

C Weed control generally

The Contractor shall suppress weed growth to planted and seeded areas either by mechanical or chemical means. Shrub beds shall be clear of weed growth at all times (i.e. from the Date of Possession of site until handover to the Client.)

The Contractor must not carry out spraying operations during unsuitable conditions which may cause spray to drift on the adjoining land. The Contractor will be held legally responsible for any damage or injury to persons, animals or property resulting from his spraying operations and must indemnify the Employer for all claims for damage.

Spraying or spreading equipment must be of an approved design and suitable to the type of terrain. Knapsack sprayers and other forms of portable equipment must be used on banks and areas with difficult access. All spray equipment must be fitted with a guard to prevent spray reaching the trees.

All relevant Acts of Parliament and the manufacturer's instructions concerning the handling, use and storage of the chemicals must be followed and containers and other contaminated equipment must be cleared from site after each day's work.

In addition Contractors should note the following:

- i. All weed treatment chemicals shall be approved by "Pesticides (for the current year)" (HMSO) publication, and shall not consist of any chemical contained on the "Red" banded or restricted list.

Persistent translocated residual herbicides such as Simazine, Atrazine and Aminotriazole are not permitted.

- ii. For the control of weeds at gullies, kerb channels, pavement edges and block paving, Glyphosate can be used, depending upon germination and weed growth up to four applications may be necessary.

- iii. Glyphosate can be used in conjunction with Diuron, a persistent residual herbicide. This combination will reduce the number of treatments to one and also widens the weed spectrum to include some of the more common triazine resistant weeds.

Application rate:- Diuron @ 4.8 KG/Ha
Glyphosate @ 1.8 Kg/Ha

- iv. Where situations require a granule to be applied accurately to an area and there is enough soil present for the uptake of chemical i.e. on gravel paths, around trees, fence lines, applied before laying of asphalt etc.

Dichlobenil can be used at a rate of 3.78 Kg/Ha where no perennial weeds are present, and at 8.44 Kg/Ha where established perennials are present.

- v. All treatment of chemicals shall only be used in conditions recommended by the manufacturer.

Weed control around trees in grass

The Contractor shall maintain, by mechanical or chemical means, an area of not less than 600mm in diameter around every tree planted within grassed areas. Any trees damaged by chemicals or machinery must be replaced at the Contractor's expense.

A Removal of water shoots and dead twigs

Any dead twigs or water shoots occurring on the clear stem of trees and dead shoots on shrubs shall be removed, if required by the Landscape Architect, and disposed of by the Contractor.

B Replacement of plant material

Between the time of acceptance and the end of the two year maintenance period trees, shrubs or other plants which die or are not in a thriving condition due to the effects of weather, including late frost, lack of water, damage by deer or any other cause other than vandalism, shall be replaced by the Contractor at the first available opportunity when planting conditions are favourable. Losses will be judged on whether the plants are actively growing during late summer when a joint plant check will be made by the Landscape Architect and Contractor.

C Replacement of stakes and ties etc

Any stakes, ties and shelter guards that become broken or damaged prior to final completion shall be replaced. Ties shall be adjusted as necessary to prevent chafing or rubbing of bark against the stake.

D Replacements generally

The entire cost of replacement, other than losses caused by vandalism, shall be at the Contractor's expense.

HANDOVER

Upon completion of the maintenance period the works may be offered for handover, provided that all the establishment and maintenance works have been completed to the satisfaction of the Landscape Architect. Areas will not be accepted for handover if for any of the following reasons the work is not up to standard:-

- (i) If any of the trees and dead or defective.
- (ii) If oil, petrol, grease or other toxic materials have damaged the trees.
- (ii) If any sinkage below finished level has occurred.
- (iii) If the area has not been cleared of stones, weeds and other rubbish.
- (iv) If there is a persistent, ineffectively controlled weed problem.

The Contractor shall continue to keep planted areas free from weeds at 10 to 14 day intervals at his own expense until the defects have been rectified.

SECTION 4 - SCHEDULE OF WORKS

**SCHEDULE OF SOFT LANDSCAPE WORKS
TO ALDER AVENUE, RARDE SITE NORTH**

To be read in conjunction with
drawing Nos. 267.100 and 267.101.

TREES

Supply, deliver, set out, excavate
pit, fix stakes, plant, backfill with
planting compost and topsoil. Dispose
of surplus soil fix tree ties and deer
guards.

Heavy standard trees

		Rate	£	p
A	Alnus glutinosa 12-14cm girth	97 No.		

MAINTENANCE

Maintenance of heavy standard trees

B	Undertake all necessary maintenance tasks to heavy standard trees for a period of two years.	97 No.		
---	--	--------	--	--

SUMMARY OF MEASURED WORK

Page 4/1

Allow the sum of £500 for contingencies

Allow for preliminaries, insurances and all other costs related to the employment of work people.

500 00

FORM OF TENDER

LANDSCAPE WORKS TO ALDER AVENUE, RARDE SITE NORTH, WALTHAM ABBEY, ESSEX

Sir

I/We having read the conditions of contract and specification delivered to me/us and having examined the drawings referred to therein do hereby offer to execute and complete, in accordance with the conditions of contract, the works as described in the Specification and as set out in the schedules by 30 January 1994 for the sum of.....

.....
(in words)

I/We confirm that this tender is submitted at my/our expense and agree that the Employer need not necessarily accept the lowest or any other tender.

I/We further confirm that, this tender is submitted in accordance with the NJCC Code of Procedure for Single Stage Selective Tendering 1989 and understand that, should any errors in the pricing of the schedules exist, adjustments of errors shall be in accordance with alternative 1 of Section 6.

I/We appreciate that this tender will not be considered unless the attached Certificate stating that this is a bona fide tender has been completed.

This tender remains open for consideration for 56 days from the date fixed for the lodgement of tenders.

Dated this day of 1993

Name.....

Address.....

.....

Signature.....

CERTIFICATE OF BONA FIDE TENDER

Tender for: LANDSCAPE WORKS TO ALDER AVENUE,
RARDE SITE NORTH, WALTHAM ABBEY, ESSEX

Returnable: MONDAY 22 NOVEMBER 1993

The essence of selective tendering is that the Client shall receive bona fide competitive tenders from all those tendering. In recognition of this principle, we certify that this is a bona fide tender, intended to be competitive, and that we have not fixed or adjusted the amount of the tender by or under or in accordance with any agreement or arrangement with any other person. We also certify that we have not done and we undertake that we will not do at any time before the hour and date specified for the return of this tender any of the following acts:-

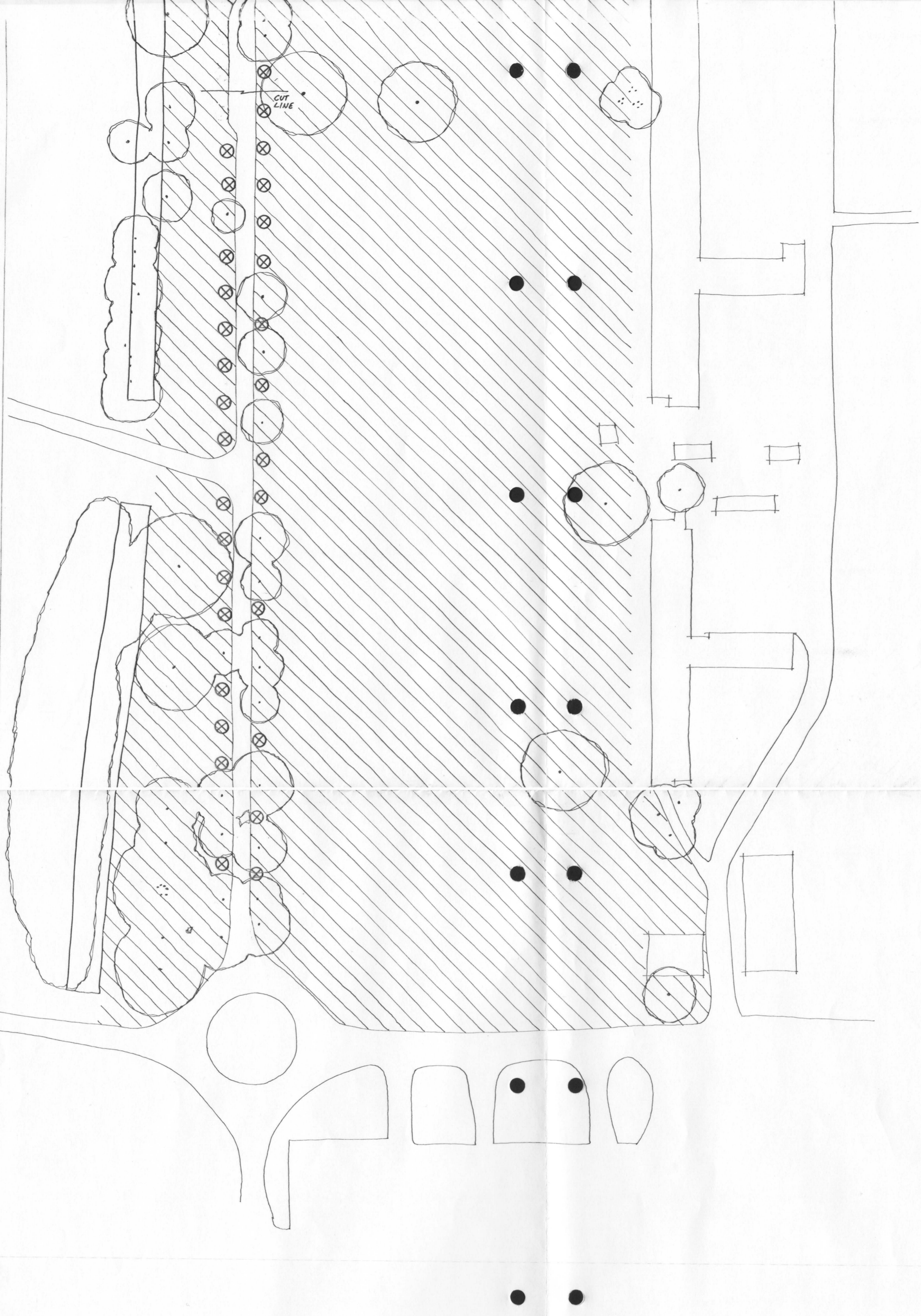
- a. communicate to a person other than the person calling for those tenders the amount or approximate amount of the proposed tender, except where the disclosure, in confidence, of the approximate amount of the tender was necessary to obtain insurance premium quotations required for the preparation of the tender;
- b. enter into any agreement or arrangement with any other person that he shall refrain from tendering or as to amount of any tender to be submitted;
- c. offer or pay or give or agree to pay or give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other tender or proposed tender for the said work any act or thing of the sort described above.

In this certificate, the word "person" includes any persons and any body or association, corporate or unincorporate; and "any arrangement" includes any such transaction, formal or informal, and whether legally binding or not.

Signed.....

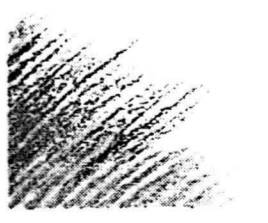
on behalf of.....

Date.....



⊗ ALNUS GLUTINOSA STD.
 WITH TREE GUARD
 /// AREA OF LAWN RE-INSTATEMENT

Job		
RARDE Site Waltham Abbey		
Title		
Avenue & Queens Meadow Reinstatement (drawing 1)		
Scale	Drawing No.	Revision
1:500	267:100	-
Date	Drawn	
Feb. 93	JP	



HIGSON PEARSON
Landscape Architects
 Lloyds Bank Chambers
 67b High Street
 Stony Stratford
 Milton Keynes MK11 1AY
 Telephone: 0908 566974
 Facsimile: 0908 560533

Waltham Abbey Former Royal Gunpowder Factory
(Former RARDE North Site)

National Monument Number: 21567

Proposed re planting of the Alder Tree Avenue, Long Walk.

I Condition of Monument

A full condition survey has been proposed but not carried out on the site.

There are 205 roofed structures on site with 264 other ruined or buried buildings known within the 75 hectares. The majority of the buildings inside the Scheduled Monument boundary (which encloses approximately two-thirds of the site) are ruinous or buried with around 30 roofed structures. The monument also includes most of the extensive waterway system which is mostly filled or survives as earthworks. The majority of the original infrastructure, the narrow gauge railway, electricity lines and steam mains etc. have been removed. Approximately 70% of the monument is covered by plantation woodland of Alder, Willow, Ash and invasive Sycamore. This woodland is also protected as a Site of Special Scientific Interest.

II Land Use of Monument

At present there is no designated land use. The site was until its closure in June 1991 a Government Research Establishment. There is no public access while decontamination of the site continues. It is the aim to open the site in the future and allow limited public access to the monument and SSSI.

III Preliminary Assessment of Impact of Proposed Work

The work represents the reinstatement of the old Alder Avenue which dates back to the middle of the last century. Although it is unclear whether the avenue was always made up of Alder trees, the line has remained the same. At present the avenue stretches from the roundabout at the southern end of Long Walk up to the wood just to the south of the Burning Ground and is made up of mature Alders. The trees on both sides of the Avenue sit on two old waterways, both no larger than ditches, which date to the late 18th century. The easterly ditch still survives as an earthwork. Too narrow for any vessels, these features probably allowed water to move around the site. There are no other known archaeological remains within the line of the Avenue or within the suggested root area.

The condition of these ditches after over one hundred years of tree growth must be questionable. Reinstatement of the avenue will help to preserve a striking feature of the site and will recreate a rare natural habitat. The proposed work and the subsequent biotic action may damage the two ditches but they may already be extensively disturbed.

Archaeological supervision will be maintained during the work and appropriate action or advice will be taken when necessary.

Adam Ford, Consultant Archaeologist 12.1.94

Subject Alder Planting
Longwalk.

To Adam Ford.

Date 31/12/93.

From Bobwatts.

Ref ES275.

Adam, Proposed Alder Planting Longwalk.

- 1) Please see drawings 267.100 and 267.101 showing proposals for planting Alder along Longwalk.
- 2) Part of this work comes within the Scheduled Monument Area, as such it requires an SMC.
- 3) Would you prepare an SMC please, additional copies of drawings have been requested. Explanation or reason for work is "re-establishment of historic tree walk and wild life habitat" or similar. Long explanation not necessary.
- 4) Work is scheduled to commence Jan 94 so the purpose is to test the system pending receipt of the details and plan of the scheduling.

Bobwatts.

R E Watts Esq
W S Atkins Environmental
C/o Royal Ordnance plc
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Nature Conservancy Council for England
Harbour House
Hythe Quay
Colchester
Essex CO2 8JF

NOTICE OF PROPOSAL TO CARRY OUT OPERATION UNDER SECTION 28(5) OF THE WILDLIFE AND COUNTRYSIDE ACT 1981 AND CONSENT BY THE NATURE CONSERVANCY COUNCIL FOR ENGLAND UNDER SECTION 28(6).

WALTHAM ABBEY SITE OF SPECIAL SCIENTIFIC INTEREST

I hereby give notice under Section 28(5) of the Wildlife and Countryside Act 1981 of my proposal to carry out, cause or permit to be carried out the operations specified below:-

Reference Number of Operation: 6; 7; 11; 12; 14; 15;
20; 21; 23; 26.

Specified Operation:

Application of herbicides; dumping or spreading of any materials; destruction, displacement, removal or cutting of any plant or plant remains; tree and/or woodland management; infilling of ditches, drains or pits; extraction of minerals (including topsoil and subsoil); construction of roads and tracks, and the removal or destruction of walls, hard stands, banks, ditches or other earthworks, or the removal of pipelines and cables, above or below ground; the undertaking of engineering works; use of vehicles (both wheeled and tracked).

Details of Proposed Activity including Timing and likely duration and the Land on which it is to be carried out:

The carrying out of various decontamination procedures as described below:

1. In the area formerly occupied by a Tetryl factory (outlined in brown on the attached map). Vegetation and topsoil to be removed. Excavation and removal of structures, foundations, subsoil, etc as necessary to ensure removal of contaminated materials. Importation of uncontaminated soil and/or other agreed materials as necessary. Levelling of site preparatory to restoration. (Seeding or planting to be the subject of a separate consent.) There are no time constraints upon this section of the consent.
2. Between the roadway known as Long Walk and the western boundary of the Burning Ground (as marked in red on the attached map). The establishment of a temporary roadway using hardcore, crushed stone or similar material. There are no time constraints upon this section of the consent, but this roadway will be removed when no longer required.
3. In the vicinity of the heronry (approximate position outlined in green on the attached map). A zone extending outwards 100 metres from the perimeter of the heronry to be identified and delineated by temporary fencing and/or coloured tape and/or noticeboards as appropriate (hereinafter referred to as the "heronry protection zone").

Mr A A Bell or other acknowledged authority on herons will monitor activity at the beginning and end of the breeding season and will advise on any modification of time constraints imposed within the heronry and "heronry protection zone" which may be desirable as a result of gross changes in the position and extent of the heronry. Any such modification to be delineated not later than 13 January 1995.

Mr Bell will also observe the response of the herons to any new procedures which are considered to be potentially disturbing, and will advise accordingly upon any timing and/or mitigatory measures which may help to minimise such disturbance. Liaison will be maintained with English Nature and W S Atkins Environmental or its nominated representative(s).

4. Throughout the entire SSSI, as applicable.

- a. Steam pipes. Asbestos lagging to be stripped from elevated steam pipes. The pipes, along with their support stanchions and foundations, to be dismantled and removed. Vegetation and topsoil, to a depth of approx 100-150 mm to be removed from a 2 metre wide strip along the line of the pipe-run in order to remove any asbestos which has fallen from the pipes. [Further consents may be required depending upon strategies adopted (eg use of latex or geotextile, or further excavations.)]
- b. Buildings. Any trees or scrub growing on, or within 3 metres of, buildings or other related structures or upon any associated mounds may be removed unless specifically marked for retention. Likewise any ivy growing upon such structures. Stumps to be poisoned by treatment with "Roundup" or one of the other approved herbicides on the attached list. Ferns are not to be removed without prior consultation with English Nature.

Buildings will be examined by representatives of Carden & Godfrey, Architects, and of English Heritage who will advise on the desirability of their retention. Core samples will be taken from buildings to be retained in order to determine the nature and extent of any contamination. [A separate consent will be issued for any decontamination process, once the method has been decided upon.]

Before any decontamination takes place, the buildings will be inspected by Dr R Stebbings or his nominated representative(s). Presence of bats will be recorded and measures taken to render the structures unusable by bats prior to decontamination.

Samples will be taken from mounds and other earthworks around buildings and other structures. Where contamination is detected, various remedial measures including excavation may be carried out.

- c. Canals. The former canal system will be wholly or partially excavated to remove contaminated or

potentially contaminated material. Trees are to be felled only after consultation with English Nature.

- d. Surface tips of waste and/or rubble. Scrub and other tall vegetation may be removed in such areas in order to facilitate examination. Trees are to be felled only after consultation with English Nature. Rubbish and surface contamination will be removed by hand. Limited excavation may be necessary in some instances.
 - e. Roads. All existing surfaced roadways may be maintained by the deposition of inert material as required.
 - f. Vehicles. Both wheeled and tracked vehicles of various kinds will be used as part of the above operations. Wherever possible these vehicles will use the same routes in order to minimise the total area of the site subjected to damage by wheels or tracks. Any unsurfaced temporary trackways becoming heavily rutted may be levelled by the use of the dozer blade on a mini-digger.
5. Disposal of excavated material from operations described above. Potentially contaminated material will be disposed of off-site.

The above activities will take place throughout the period from 1 April 1994 to 31 March 1995, inclusive. It is, however, agreed that all work in the heronry and "heronry protection zone" shall be subject to the advice given in Mr A A Bell's reports.

[A new consent or an extension of this consent will be required if works continue into FY 1995-6.]

Signed on behalf of owner:

Date:

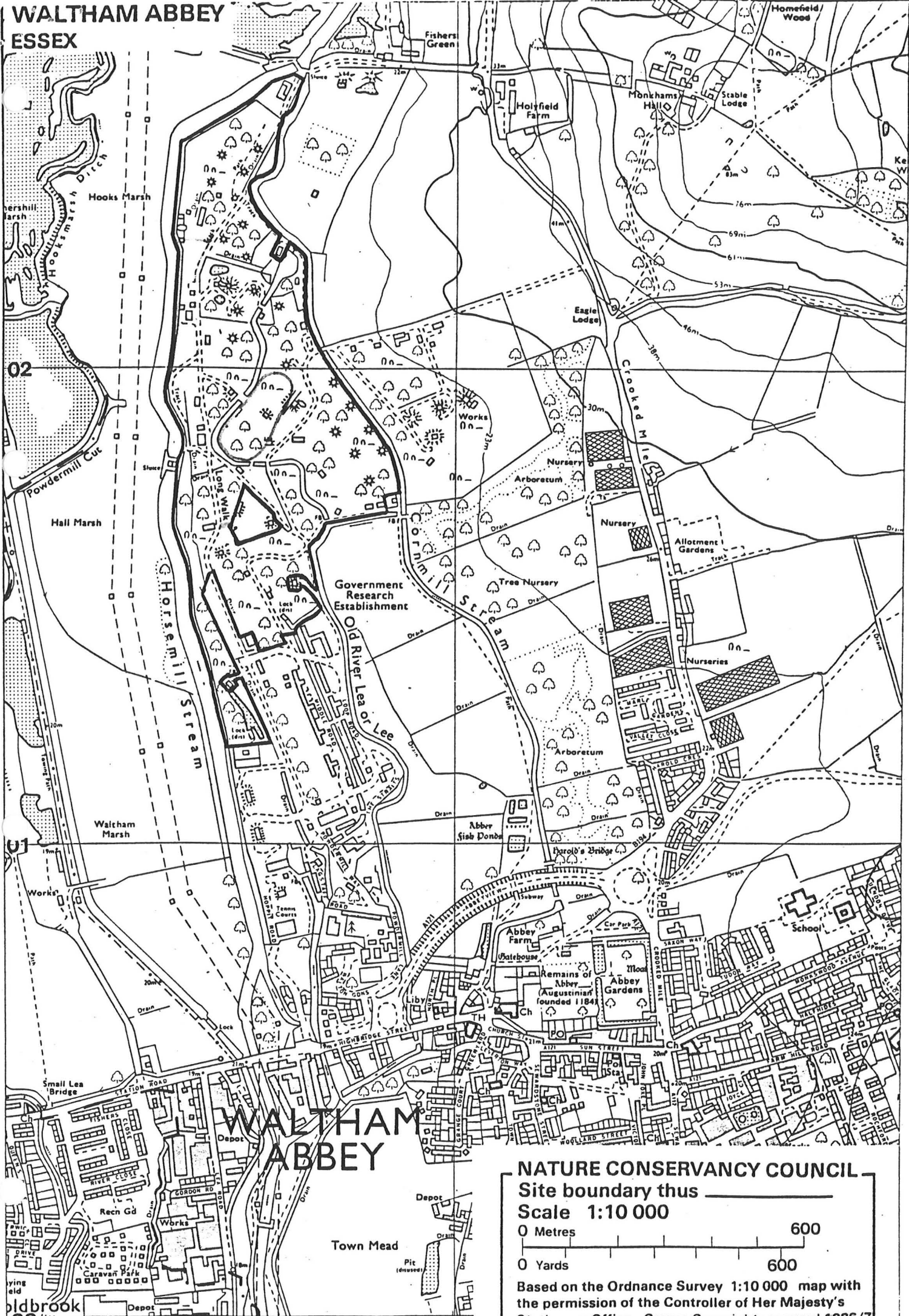
The Nature Conservancy Council for England hereby consents that as owner/occupier of the site named, you may carry out, cause or permit to be carried out, the operations specified above in the manner prescribed.

You are required however to give additional written notice if you proposed to amend operations, or carry out an additional operation to which we have not consented or where the period identified in the proposal for the operation to take place has expired. You may also need permission from Epping Forest District Council and English Heritage.

Signed for the Nature Conservancy Council for England:

Date:

**WALTHAM ABBEY
ESSEX**



NATURE CONSERVANCY COUNCIL
 Site boundary thus
 Scale 1:10 000
 0 Metres 600
 0 Yards 600
 Based on the Ordnance Survey 1:10 000 map with
 the permission of the Controller of Her Majesty's
 Stationery Office. Crown Copyright reserved 1986/7

HERBICIDES APPROVED FOR USE IN THE TREATMENT OF TREE STUMPS

A. SYSTEMIC

1. ROUNDUP (GLYPHOSATE)

Probably the most suitable agent. Relatively low toxicity to most fauna and rapidly deactivated in the environment.

2. GARLON (TRICLOPYR)

Not recommended for use in wetland habitats because of toxicity to aquatic fauna. Must not be used in hot weather (due to evaporation and redeposition).

B. NON-SYSTEMIC

3. AMCIDE (AMMONIUM SULPHAMATE)

Not as effective as the above two chemicals. Toxicity similar to Garlon.

4. KRENITE (FOSAMINE AMMONIUM)

Quite successful against birch, but not as effective against other tree species as the first two chemicals above. Very susceptible to being washed off stumps, but degrades rapidly.

In most cases we would recommend the use of one of the systemic herbicides, thus avoiding the need to ensure that the entire surface of the stump has been treated. All of these chemicals are most effective when applied immediately after cutting. All should only be used in dry weather conditions and in accordance with the manufacturer's instructions.

TRANSACTION REPORT

29-NOV-93 MON 09:50

FOR: BOB WATTS WSA

0992651611

SEND

DATE	START	RECEIVER	PAGES	TIME	NOTE
29-NOV	09:49	0733897018	1	59"	OK

TO: Bob Stebbings
 COMPANY: The Robert Stebbings Consultancy Ltd.
 DATE: 29.11.93
 REFERENCE: Eco Management Plan

FROM: Adam Ford
 FAX NUMBER: 0733 89 7018
 LOCATION: Peterboro.
 NO. OF PAGES INC TOP SHEET: 1

SUBJECT:

Bob, Having read your most enlightening plan I cannot see any conflicting situations between the ecological considerations and the demands of historical preservation.

As you know any work which involves ground work or work which alters the general aspect, ambience or function of the site requires scheduled monument consent. I'm sure in most cases this will be just a rather tiresome formality.

Your plan does outline the need for a picture of the enduse of the site (even if its a rather sketchy picture!).

Sorry I left this till the last minute to reply time seems to be running away with me at the moment, I seem to have missed a week somewhere.

Regards
 Adam Ford

ADAM FORD B.A. (HONS)
Archaeological Consultant

C/o British Aerospace Defence Ltd
Royal Ordnance Division
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Telephone (0992) 651611
Facsimile (0992) 651611

FACSIMILE TRANSMISSION

TO: Bob Stebbings	FROM: Adam Ford
COMPANY: The Robert Stebbings Consultancy Ltd.	FAX NUMBER: 0733 89 7018
DATE: 29.11.93	LOCATION: Peterboro.
REFERENCE: Eco Management Plan	NO. OF PAGES INC TOP SHEET: 1

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Regards
Adam Ford

This letter has been sent to:

ATTENTION: Mr. Philip Hewitson

Conserve-A-Tree Limited
Belvedere Nurseries
Walting Street
Fenny Stratford
Milton Keynes
MK17 9JH

Tel: 0908 378798

ATTENTION: Mr. D. Honour

D. Honour & Son (Landscape) Ltd
59 Blythwood Gardens
Stansted
Essex
CM24 8HH

Tel: 0279 813160

ATTENTION: Mr. A. Fitzjohn

Landscape Contractor
Culverwood Farm
Stockys Lane
Little Berkhamstead
Nr. Hertford
SG13 8LW

Tel: 0707 876702

4 November 1993

COPY

HIGSON PEARSON
Landscape Architects

Lloyds Bank Chambers
67b High Street
Stony Stratford
Milton Keynes MK11 1AY
Telephone: 0908 566974
Fax: 0908 560533

Dear Sir

**LANDSCAPE WORKS TO ALDER AVENUE, RARDE SITE NORTH,
WALTHAM ABBEY, ESSEX**

With reference to the tender documents sent to you this week would you please note the following amendments:-

1. Please find enclosed a copy of page 4/2A of the Specification. The page number 4/2 in your copy of the Specification should be removed and destroyed, this new sheet 4/2A should be inserted in its place.
2. Any surplus soil excavated will be disposed of by Royal Ordnance.
3. The site working hours are:
7.30 a.m. - 4.00 p.m. in winter.
8.00 a.m. - 4.30 p.m. in summer.
4. Mess facilities are available on site. If the Contractor wishes to provide his own site accommodation this is at the discretion of the Site Manager, Mr. G. Vincent.

Yours faithfully

M. Leslie

cc: John Pegg

c.c. R. Watts, W.S. Atkins
G. Vincent, Royal Ordnance plc
R. Stebbings, Robert Stebbings Consultancy
A. Ford, PSA, MOD

ENCL:

Partners:
Pirkko Higson DipLA ALI SMAFLA
Stuart Pearson Dip Arch DipLA ALI

FACSIMILE TRANSMISSION

TO: JOHN PEGG . FROM: BOB WATTS .
COMPANY: HIGSON PEARSON . SENDER'S FAX NO: (0992) 651611
DESTINATION FAX NUMBER: 0908 560533 . LOCATION: WALTHAM ABBEY
Number of pages (including this cover) 2 DATE: 3/11
REFERENCE: E5275

SUBJECT:

John,
Thankyou for the copy contact documents relating to longwalk. A few points of interest -

- 1) Historic drawings show a filled canal parallel with longwalk. This may be excavated, subject to certain considerations, one of which will be the preservation of the existing Alder. We should aim to have located the canal prior to your setting out.
- 2) Any surplus soil excavated will be disposed of by Royal Ordnance. This is important and a notice to tenders is necessary I think.
- 3) Note the site working hours 0730 - 1600 winter 0800 - 1630 Summer. Work outside these hours involves attendance at a cost to the client which should be avoided.
- 4) Messing facilities are available. If contractor wishes to provide his own site accommodation

If you do not receive all pages, please ring (0992) 651611

○ This is at the discretion of the Site Manager
Mr G Vincent .

5) Your drawings still contain references to
Lawn reinstatement. I assume (as your
Schedule of works) only tree planting is involved.

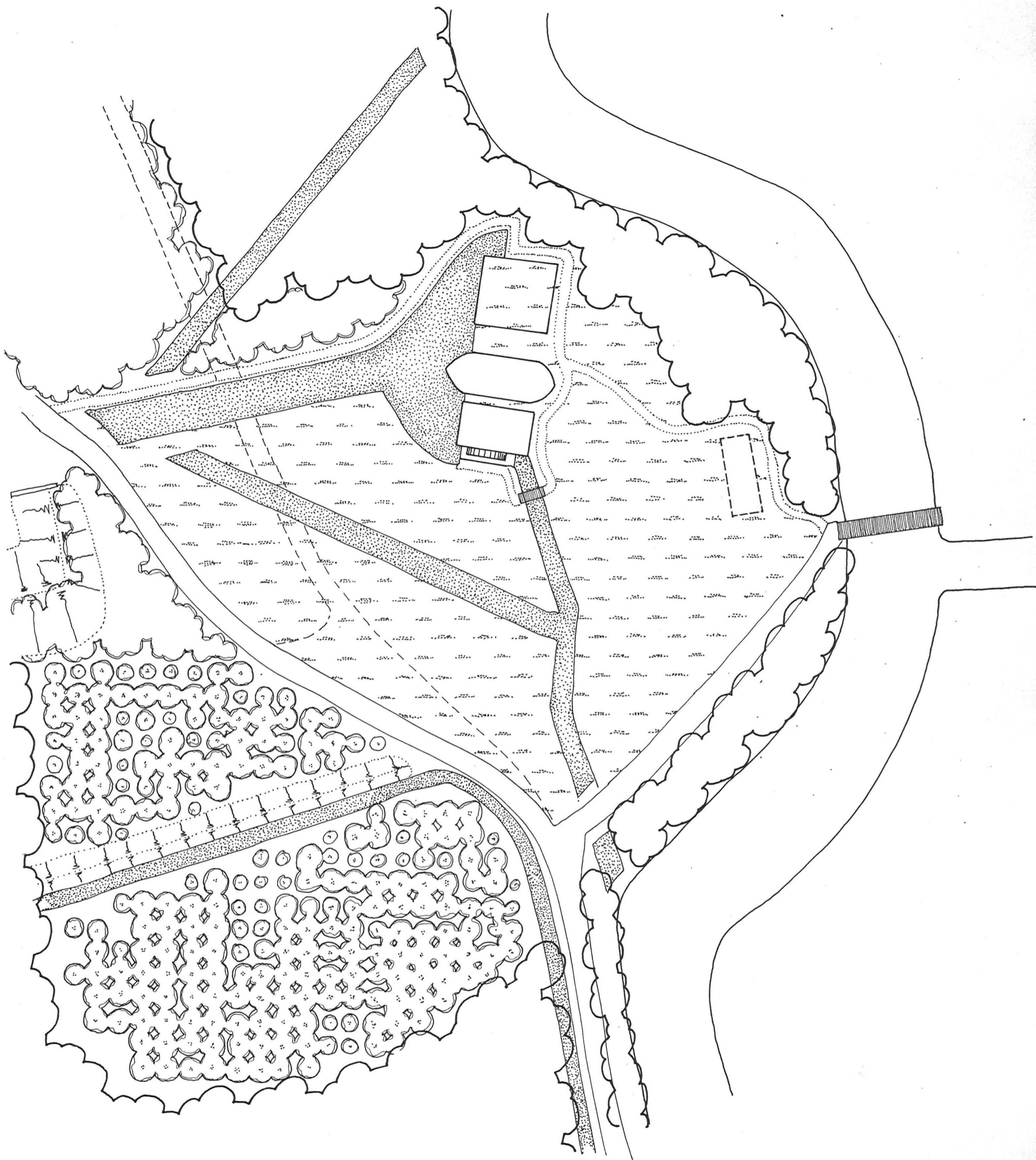
6) Please note necessity to obtain Scheduled
Monument consent from the Department of
National Heritage. The on site Archaeological
Consultant Adam Ford will advise (0992 651611)

7) Please ensure you send a copy to Graham
Vincent of RO and Adam Ford of this
information .


Regards

Bob Watts .

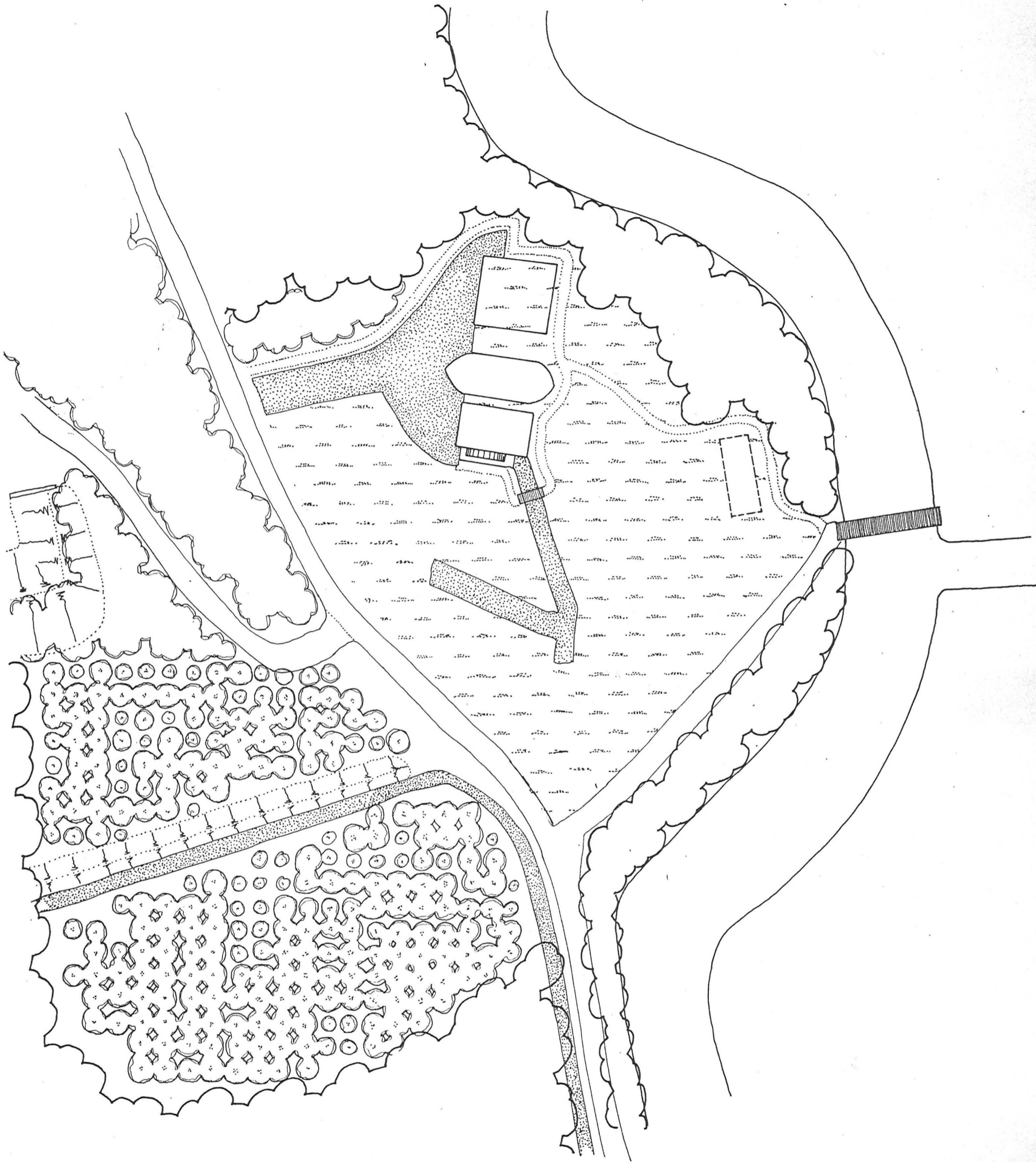
○ Copy - Adam Ford ,
G Vincent .



Job	RARDE North Site Waltham Abbey		
Title	Hydraulic Press House Layout Option 1		
Scale	1:500	Drawing No. 267.07	Revision -
Date	Nov. 93	Drawn JP	



HIGSON PEARSON
Landscape Architects
Lloyds Bank Chambers
67b High Street
Stony Stratford
Milton Keynes MK11 1AY
Telephone: 0908 566974
Facsimile: 0908 560533

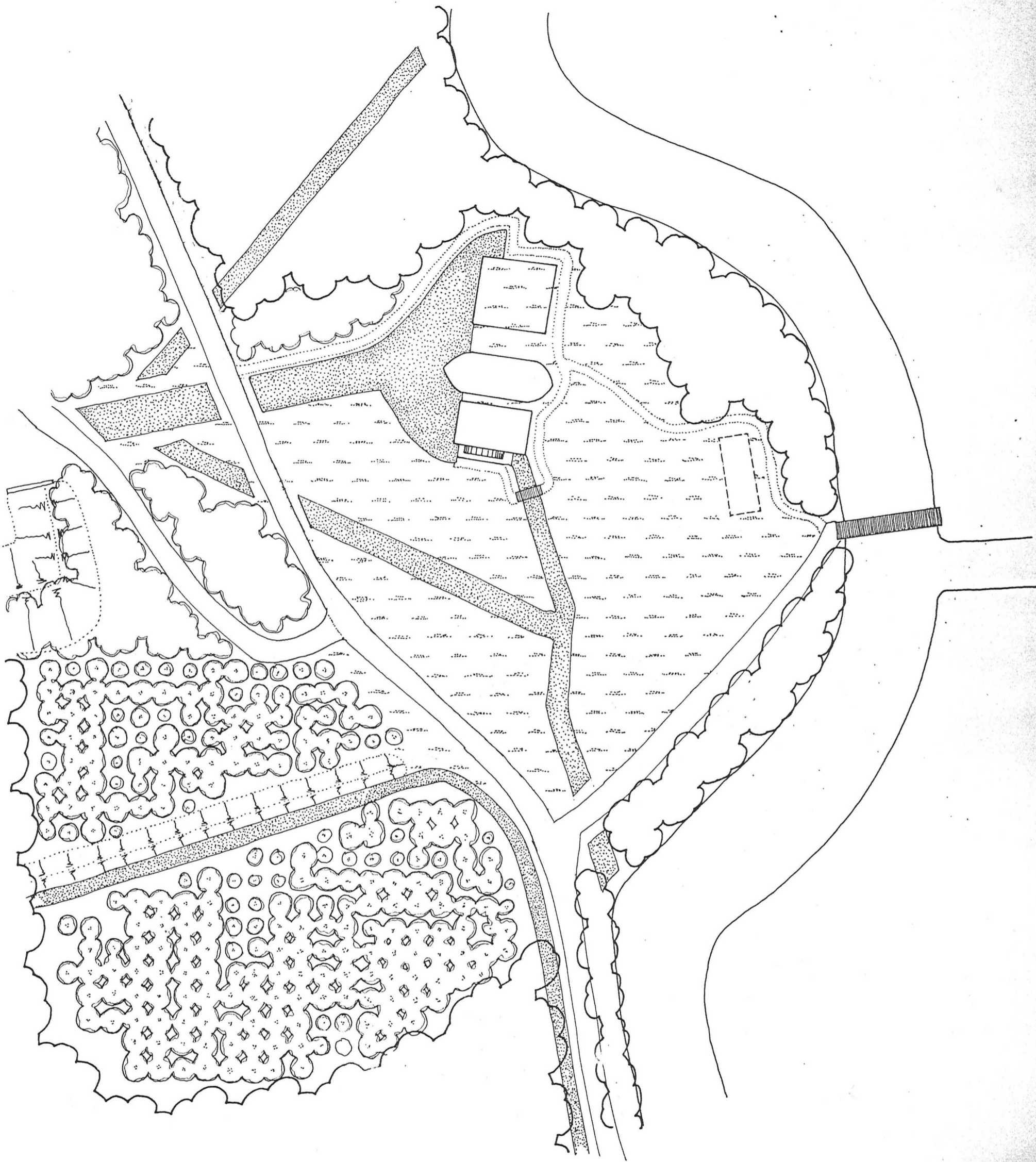


Job		
RARDE North Site Waltham Abbey		
Title		
Hydraulic Press House Layout Option 3		
Scale	Drawing No.	Revision
1:500	267.09	-
Date	Drawn	
Nov. 93	JP	



HIGSON PEARSON
Landscape Architects

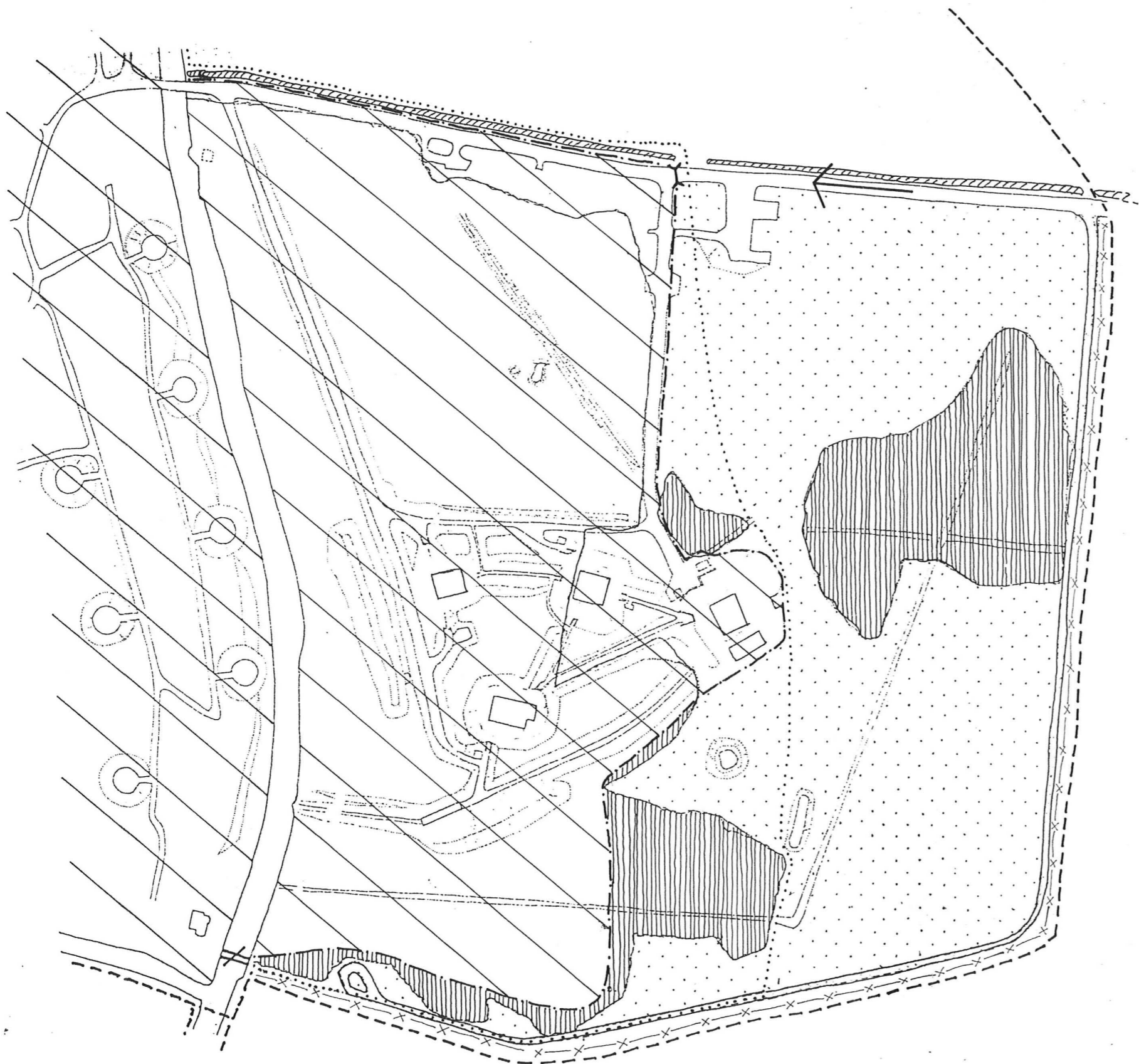
Lloyds Bank Chambers
67b High Street
Stony Stratford
Milton Keynes MK11 1AY
Telephone: 0908 566974
Facsimile: 0908 560533



Job		
RARDE North Site Waltham Abbey		
Title		
Hydraulic Press House Layout Option 2		
Scale	Drawing No.	Revision
1:500	267.08	-
Date	Drawn	
Nov. 93	JP	















HIGSON PEARSON
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**RARDE North Site
Waltham Abbey**


Scenario for New Hill Area

Area of Ancient Monument retained by Trust.
Western part of site transferred to LVRPA.

-  Area to be retained by Trust
-  Meadows cut once a year until transfer to LVRPA
-  Scrub allowed to develop further
-  Right of Way for MOD and Trust to continue
-  Existing track to be retained
-  Existing footpath
-  New Footpath
-  Removal of perimeter fence
-  Removal of gate across river
-  New secure fence hidden within new and existing scrub
-  New farm fence and hedge
-  New Security gate

All buildings and other constructions to be removed from western part of site

Hard standings left to provide habitat for Bryophytes

Job RARDE North Site Waltham Abbey			 HIGSON PEARSON Landscape Architects Lloyds Bank Chambers 67b High Street Stony Stratford Milton Keynes MK11 1AY Telephone: 0908 566974 Facsimile: 0908 560533
Title Scenario for New Hill Area			
Scale 1:2000	Drawing No. 267.06	Revision -	
Date Nov. 93	Drawn JP		

Mr Dan Bone
CIVIX
27 Old Street
London
EC1V 9HL

19th October 1993

Adam Ford
Consultant Archaeologist
C/o British Aerospace Defence Ltd
Royal Ordnance Division
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Telephone (0992) 651611
Facsimile (0992) 713962

Dear Dan,

Re : Gunpowder Press House 103, 104 Landscape Proposals

Just a few general points relating to the archaeology and legal sides.

1. The structure is a Gunpowder Press House. The water wheel powered the hydraulics for the press, not a mill.
2. It should be borne in mind that any work which disturbs the ground within the scheduled area must have consent from the Secretary of State for the Environment. Proposals may also need planning consent from the local planning department.
3. Further information on S.M.C. applications can be obtained from English Heritage.
4. As well as structural considerations (eg. Tree Root Damage) etc... visual impact is also taken into account by the department of National Heritage before proposals are accepted.

If I can be of more assistance, please contact me.

Regards



Adam Ford

CC: G. Vincent
R. Watts

Your ref

Our ref

Our ref E5275

Date

15 October 1993

c/o Royal Ordnance (South Site)
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Tel: (0992) 651611
Fax: (0992) 651611

Ext no

Mr D Bone
CIVIX
27 Old Street
London EC1V 9HL

Dear Dan

WALTHAM ABBEY NORTH SITE
HIGSON PEARSON PROPOSALS FOR
BUILDINGS 103 AND 104

- 1) As requested I give my comments on the above proposal.
 - a) The road is sited on contaminated fill and as such will require removal. This cannot happen before completion of the sluice works, which will not be complete until end of December 1993, due to access requirements. Therefore any planting regime would probably be scheduled for April 1994.
 - b) The two waterways associated with these buildings enter the Old River Lee, south of the Burning Ground, within the area being considered for regeneration. In order to empty these of fill, a method of stabilising the banks of the river, by sheet piling for instance, will be necessary.
 - c) Aspects of the building condition and any necessary works should be considered.
 - d) The pedestrian bridge to Watermans Cottage is closed at the moment as it was assessed as requiring replacement.
 - e) When the clearance under the road is complete, confirmatory sampling undertaken to a satisfactory level, and the road replaced, the area can be cordoned off and made available for regeneration.

Cont .../..

2) If there are any further points to be discussed, please to not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read "R E Watts", with a long, sweeping horizontal line extending to the right.

R E Watts.

cc: G Vincent

Your ref

Our ref

Our ref E5275

Date

15 October 1993

c/o Royal Ordnance (South Site)
Sewardstone Road
Waltham Abbey
Essex EN9 1AY

Tel: (0992) 651611

Fax: (0992) 651611

Ext no

Mr D Bone
CIVIX
27 Old Street
London EC1V 9HL

Dear Dan

WALTHAM ABBEY NORTH SITE
HIGSON PEARSON PROPOSALS FOR
BUILDINGS 103 AND 104

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 - e) When the clearance under the road is complete, confirmatory sampling undertaken to a satisfactory level, and the road replaced, the area can be cordoned off and made available for regeneration.

Cont .../..

Directors: CJA Binnie R Collins JA Cuming RB Dean NE Dempster JL Doyle MT Foley RC French
DRS Harris CP Haylock BS Holmes KM Hounslow BC Hutt DS James RD Jarvis MME Jeffries S Kidd
JD McDougall PM Middleton JT Milnes MHS Muller SN Mustow GS Prosser D Slater
HC Symonds LR Wootton

Registered office: Woodcote Grove, Ashley Road, Epsom, Surrey KT18 5BW England
Registered in England Number 755613

- 2) If there are any further points to be discussed, please to not hesitate to contact me.

Yours sincerely,

R E Watts.

cc: G Vincent
A Ford.

Rec. from GW Wyatt.
5/10/93
Copy to AF
G.V.
BS

Chief Planning Officer
Epping Forest District Council
Civic Offices
Epping CM16 4BZ

For the attention of Ms J Sanderson

Your ref: EPF/625/93
Our ref: GW/AJP/14 WCY

7 October 1993

Dear Sir

OUTLINE APPLICATION FOR USE OF 173 ACRES FOR HERITAGE LEISURE AND RECREATION USES WITH SUPPORTING COMMERCIAL USES AND 9 ACRES FOR RESIDENTIAL DEVELOPMENT
RARDE GUNPOWDER FACTORY TO THE NORTH OF HIGHBRIDGE STREET, WALTHAM ABBEY

Thank you for consulting us about the above application. We have been closely involved with the progress of the site decontamination and the development of these proposals thus far, and we are in day to day contact with the applicant via regular liaison meetings and the steering committee of the proposed Charitable Trust. The Conditions requested below are intended to ensure that our role in the protection of this important site is retained: they are not intended to prevent the proposed development from taking place.

The importance of the site for nature conservation

The proposal site includes the entire area of Waltham Abbey Site of Special Scientific Interest (SSSI). (A copy of the SSSI citation and map are appended.) SSSIs are notified under the Wildlife and Countryside Act 1981 (as amended), in recognition of their special biological and/or geological interest, having been selected according to rigorous and published guidelines. English Nature consider all SSSIs to form part of a nationally important series, representing all that is best in England's natural heritage. Once lost, the special wildlife and natural features of many areas are difficult or impossible to restore or re-create. There is seldom a substitute for established habitats or for the careful stewardship of the natural heritage within the SSSI series.

The site also forms part of a proposed Special Protection Area (SPA) under the EC Birds Directive (EC Directive 79/409). An information sheet on SPAs is appended.

The protection of the wildlife interest of SPAs is a mandatory responsibility placed upon the Department of the Environment by the EC. Such protection of SPAs in the UK is normally afforded via their notification as SSSIs under the provisions of Section 28 of the Wildlife and Countryside Act 1981 (as amended).

As the grant of a valid planning permission would override the protection of the site under Section 28 of the WCA, English Nature requires that any planning permission is restricted by Conditions which do not release the site owners or occupiers from their obligations under Section 28 of the WCA. We therefore require a number of Conditions as outlined below:

English Nature's requirements

1. The implementation of any permission should be subject to the prior signing by the applicant of a Planning Obligation under Section 106 of the Town and Country Planning Act 1990 (as amended by the Planning and Compensation Act 1991).
2. The commercial usage of the proposal area, particularly of the "craft units" in the former gunpowder incorporating mills, should be restricted to small-scale retailing, arts/craft studio and catering uses of a type compatible with the overall heritage/leisure theme of the application.

The Section 106 Obligation should include the following points:

1. The Obligation shall not be discharged or modified without the agreement of all parties and following consultation with English Nature or its successor bodies, and shall be binding upon all successors in title.
2. The applicant should state their intent that areas A1, A4, A5 and A7 shall be endowed upon a Charitable Trust to be established for this purpose; along with revenues deriving from any sales of land in areas B and A6, or an equivalent financial endowment.
3. No activities or operations listed as "Operations Likely to Damage the Special Interest" shall be carried out, or permitted to be carried out by other persons, within the boundary of the Site of Special Scientific Interest for as long as such notification remains in force, without the prior consent in writing of the Nature Conservancy Council for England (English Nature) or its successor bodies. The only exception to this shall be operations which may reasonably be defined as being "emergency operations" within the meaning of the Wildlife and Countryside Act 1981 (Section 28(8)). (A list of "Operations Likely to Damage the Special Interest" is appended.)

4. The Site of Special Scientific Interest shall be managed in accordance with a Management Plan to be produced in agreement with English Nature and English Heritage.

English Nature's position on this application

English Nature is not opposed to the proposed development in principle and, subject to the Conditions outlined above, we are satisfied that the development would not have a significant adverse effect upon the wildlife interest of the site. We would, however, feel constrained to object to this application being granted permission without the imposition of these Conditions.

In the event that your Council is minded to grant permission without the attachment of these, or fundamentally similar, Conditions; then English Nature should be consulted at the earliest possible time in order that we may consider whether a referral to the Secretary of State may be appropriate.

English Nature requests that we be sent a copy of the decision notice and any Conditions imposed. We also request that we should be consulted again in relation to any application for detailed permission arising from this current application.

Please feel free to contact us if there are any points upon which you wish to seek clarification.

Yours faithfully

Gordon Wyatt
Assistant Conservation Officer

Cc CIVIX
D Stanners, MoD-CDU

COUNTY: ESSEX SITE NAME; WALTHAM ABBEY

DISTRICT: EPPING FOREST

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: Epping Forest District Council

National Grid Reference: TL 376 020 Area: 34.2 (ha.) 84.5 (ac.)

Ordnance Survey Sheet 1:50,000: 166 1:10,000: TL 30 SE

Date Notified (under 1949) Act: 1974 Date of last revision: 1974

Date Notified (under 1981 Act): 1986 Date of last revision: N/A

Other Information: The site also supports a wealth of historical interest, associated with its use for the manufacture of gunpowder, documented by McLaren, M. (1975) The Explosives Research and Development Establishment: its historical background, Journal of Naval Science Vol. I No. 2 176-183; Gray, E., Marsh, H., and McLaren, M. (1982) A short history of gunpowder and the role of charcoal in its manufacture, Journal of Materials Science 17 3385 - 3400.

Description and Reasons for Notification:

Waltham Abbey SSSI is an area of Alder woodland on damp alluvial soils overlying fluvio-glacial gravel in the valley of the River Lee. The woodland supports the largest heronry in Essex.

The woodland was planted ca. 1700 and coppiced to provide charcoal for gunpowder manufacture, an activity which is well documented at this site. Planting ceased around the years 1914-18 when the availability of cordite and guncotton rendered the production of large quantities of charcoal unnecessary. However, gunpowder continued to be manufactured on a small scale at the site until the 1940's and was associated with continued coppice management. The present canopy has largely regenerated from coppice stools and is dominated by Alder (Alnus glutinosa), with Sycamore (Acer pseudoplatanus), Ash (Fraxinus excelsior), Poplar (Populus sp.) and Crack Willow (Salix fragilis). Elder (Sambucus nigra) and Blackthorn (Prunus spinosa) are the main shrub species.

The ground flora is dominated by Common Nettle (Urtica dioica) and Ground-ivy (Glechoma hederacea) with locally dominant Butterbur (Petasites hybridus).

The heronry has been present on the site since 1974 and increased from 18 pairs in 1978 to 30 pairs in 1983; 26 pairs were recorded in 1984 and the site remains the largest heronry in Essex. Other birds reported from the site include Tawny Owl, Tree Sparrow, Reed Warbler, Sedge Warbler, Garden Warbler and Blackcap. The woodland is bordered on one side by the River Lee flood channel, and on the other by the Cornmill Stream; it also contains several small, man-made watercourses and structures associated with the production of gunpowder on the site.

INTERNATIONALLY IMPORTANT WETLANDS AND SPECIAL PROTECTION AREAS FOR BIRDS

This leaflet describes two international designations that may be given by the United Kingdom government to areas of high wildlife interest by virtue of the quality of habitat or the numbers of birds supported.

Ramsar sites: wetlands of international importance

The Convention on Wetlands of International Importance especially as Waterfowl Habitat was adopted at a meeting of countries concerned with wetland and waterfowl conservation which was held at Ramsar, Iran, in 1971. The objectives are to stem the progressive encroachment on, and loss of, wetlands now and in the future. A wetland is defined as being an area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt. This includes areas of marine water the depth of which at low tide does not exceed 6 metres. The UK Government signed the Convention† in 1973 and ratified it in 1976. In doing so it accepted a commitment to promote both the conservation of particular sites and the wise use of wetlands within its territory. Each country which becomes a Contracting Party to the Convention is required to designate wetlands in accordance with criteria agreed by Parties for inclusion in a list of 'Wetlands of International Importance'.

By May 1992 there were 69 Contracting Parties and a total of 558 sites had been designated throughout the world. With the continuing decline of wetlands as the result of drainage, together with the increasing pressure for more areas to be developed for recreation, including water-sports, it is vital that wetlands already identified as being of international importance are conserved.

The Contracting Parties have agreed criteria to establish whether wetlands are internationally important. The criteria, as revised at the Conference of Contracting Parties in Montreux in 1990, are given below.

A wetland qualifies for one or more of the following reasons.

1. Criteria for representative or unique wetlands

A wetland should be considered internationally important if:

- a. it is a particularly good representative example of a natural or near-natural wetland characteristic of the appropriate biogeographical region; or
- b. it is a particularly good representative example of a natural or near-natural wetland, common to more than one biogeographical region; or
- c. it is a particularly good representative example of a wetland, which plays a substantial hydrological,

biological or ecological role in the natural functioning of a major river basin or coastal system, especially where it is located in a trans-border position; or

- d. it is an example of a specific type of wetland, rare or unusual in the appropriate biogeographical region.

2. General criteria based on plants or animals

A wetland should be considered internationally important if:

- a. it supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies of plant or animal, or an appreciable number of individuals of any one or more of these species; or
- b. it is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna; or
- c. it is of special value as the habitat of plants or animals at a critical stage of their biological cycle; or
- d. it is of special value for one or more endemic plant or animal species or communities.

3. Specific criteria for using waterfowl to identify wetlands of importance

A wetland should be considered internationally important if:

- a. it regularly supports 20,000 waterfowl; or
- b. it regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative or wetland values, productivity or diversity; or
- c. where data on populations are available, it regularly supports 1% of the individuals in a population of one species or subspecies of waterfowl.

Special Protection Areas (EC Birds Directive)

As the UK is a member of the European Community, the Government is bound by the European Communities Council Directive of April 1979 on the Conservation of Wild Birds**. Member states are required to take special measures to conserve the habitat of two categories of birds. These categories are (under Article 4.1 of the Directive) certain listed rare or vulnerable species indicated below, and (under Article 4.2) regularly occurring migratory species. Particular attention must be paid to the protection of wetlands, especially wetlands of international importance.

† The full text is given in Command Paper 6465. Treaty series number 34(1976) published by HMSO.

**The full text is given in the Official Journal of the European Communities No L 103/1 25 April 1979.

OPERATIONS LIKELY TO DAMAGE THE SPECIAL INTEREST

Standard
Ref. No.

Type of Operation

- | | |
|-----|--|
| 2 | The introduction of grazing. |
| 3 | The introduction of stock feeding. |
| 6 | Application of pesticides, including herbicides (weedkillers). |
| 7 | Dumping, spreading or discharge of any materials. |
| 8 | Burning and changes in the pattern or frequency of burning. |
| 9 | The release into the site of any wild, feral or domestic animal*, plant or seed. |
| 10 | The killing or removal of any wild animal*, including pest control. |
| 11 | The destruction, displacement, removal or cutting of any plant or plant remains including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould or turf. |
| 12 | Tree and/or woodland management and changes in tree and/or woodland management (including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management). |
| 13a | Drainage (including the use of mole, tile, tunnel or other artificial drains). |
| 13b | Modification of the structure of water courses (eg rivers, streams, springs, ditches, dykes, drains), including their banks and beds, as by re-alignment, regrading and dredging. |
| 13c | Management of aquatic and bank vegetation for drainage purposes. |
| 14 | The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes). |
| 15 | Infilling of ditches, dykes, drains, ponds, pools, marshes or pits. |
| 16a | The introduction of freshwater fishery production and/or management**. |
| 20 | Extraction of minerals, including peat, sand and gravel, topsoil, sub-soil, chalk and spoil. |
| 21 | Construction, removal or destruction of roads, tracks, walls, fences, hard-stands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground. |
| 22 | Storage of materials. |
| 23 | Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling. |
| 26 | Use of vehicles or craft likely to damage or disturb features of interest. |
| 27 | Recreational or other activities likely to damage features of interest. |
| 28 | Introduction of game or waterfowl management. |

* 'Animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

** Including sporting, fishing and angling.



East Region Colchester Office

Nature Conservancy Council for England

Harbour House, Hythe Quay,
Colchester, Essex CO2 8JF

Telephone: (0206) 796666
Fax: (0206) 794466

R Watts Esq
PSA Projects
B10 East
Wellesley Road
Croydon
Surrey CR9 3LY

Our ref: GW/AJP/14 WCY

3 August 1993

Dear Bob

**WALTHAM ABBEY SSSI
EXTENT OF DECONTAMINATION AND TIMING OF "RELEASE" OF
DECONTAMINATED AREAS**

As you will recall from the liaison meeting held on 9 July 1993, we are becoming concerned by the apparent lack of detail and open-ended nature of the proposed decontamination works. We are also concerned that insufficient consideration may have been given to the level of decontamination which is required, and that unnecessary damage to the archaeological and nature conservation interests of the site may therefore occur. It is also proving difficult for us to formulate a cohesive strategy for the long term management of the SSSI when we do not know what the state of the site will be once decontamination is completed. An associated problem is the apparent unwillingness to declare particular areas "clean" once decontamination has taken place, which prevents early replanting or other remedial works from taking place.

We therefore wish to offer the following ideas for resolving this apparent impasse:

1. That a meeting should be held between interested parties and representatives of the relevant safety bodies (eg HSE, EFDC Environmental Health). This could most easily be achieved by inviting them to attend the next liaison meeting.

Such a meeting would give English Nature and EH the opportunity to speak directly to these officers and to explore more thoroughly the issue of what level of decontamination would be sufficient; bearing in mind that someone must eventually be willing to declare the site as being "clean enough".

2. That PSA and RO should produce a statement and map detailing the full extent and nature of all of the proposed decontamination works. Much of the work required in producing such a description will, in any case, probably be required for the Scheduled Ancient Monument Clearance.
3. That consideration should be given to establishing a protocol whereby certain areas can be declared as "adequately decontaminated" prior to the completion of all decontamination works on the site, thus enabling remedial works to commence in these areas.

I hope that these ideas are of assistance in determining the way forward and look forward to discussing the matter further at our next meeting.

Yours sincerely



Gordon Wyatt
Assistant Conservation Officer

Cc David Stammers, MoD
Col Baker, MoD
Oliver Pearcey, EH
Deborah Priddy, EH
Dr Robert Stebbings
Graham Vincent, RO