

09 / 0163

Title: Boundary and building document
Location: Croxley Green Watercress Farm and Fisheries
Address: Rousebarn lane, Rickmansworth, Hertfordshire, WD3 3GG
Date: 9 January 2009
Version: 503 – application 08/1640/FUL



This document is to be read in conjunction with the whole planning application – specifically the following documents which are referenced in the text:

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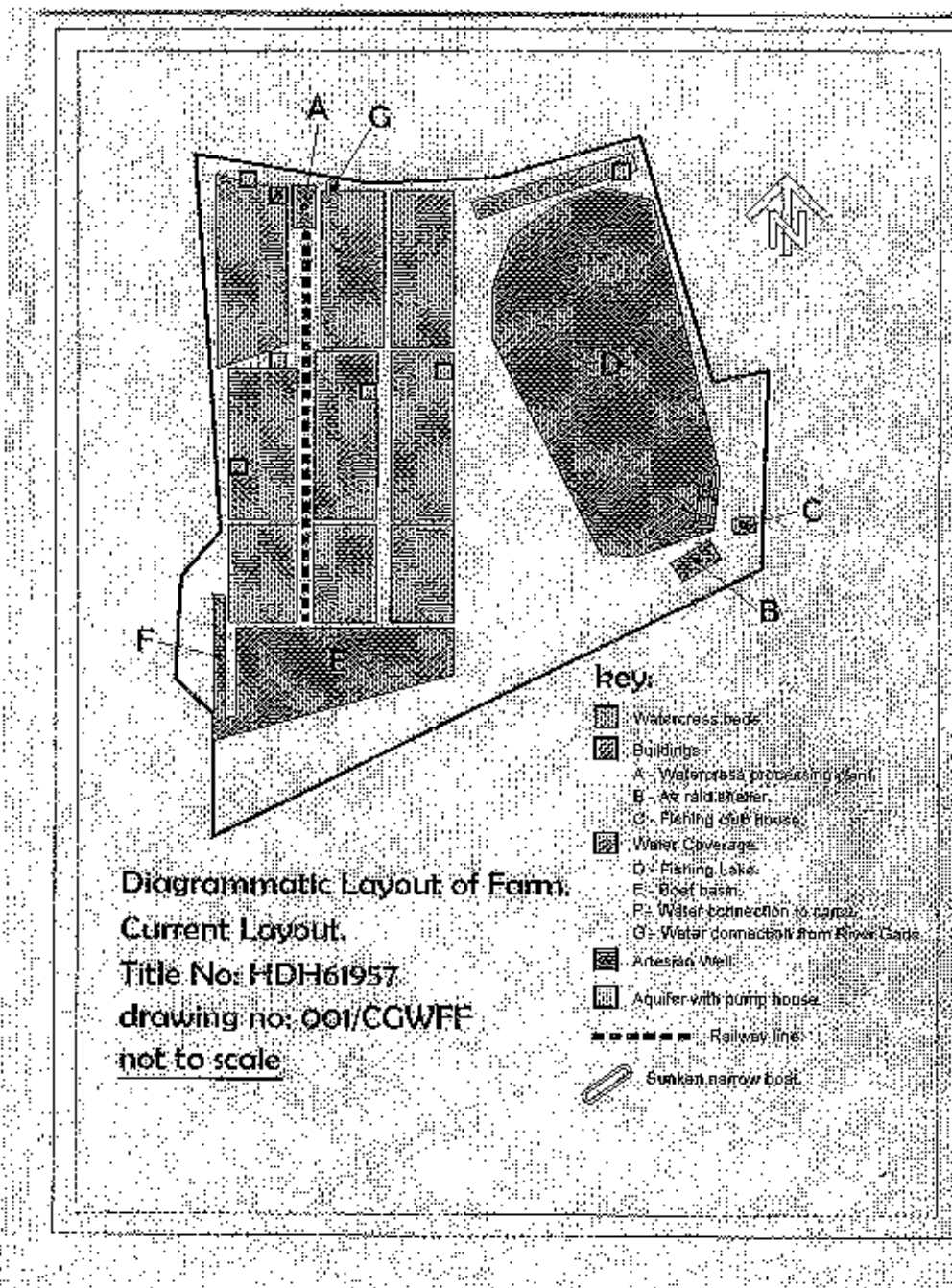
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1. Building use and overview

1.1. Current buildings

There are a number of buildings (in poor condition) currently at the site. The buildings include:

- Watercress processing plant
- Air raid shelter
- Fishing club house
- Small air raid shelters – (not marked on plan but various across site)
- Pump houses with aquifers
- Pump houses with artesian well



1.2. Proposed changes and their intended use

1.2.1. Renewal of boundary fence and gate

In areas the current fencing has been fire damaged or vandalised. The intention is to improve security and site aesthetics by installing suitable fencing around the site.

1.2.2. Relocation of watercress processing plant

The processing plant is an essential farm building. A dedicated processing plant is required on the farm because watercress has a very short shelf life unless it is quickly chilled upon harvesting or transformed into processed foods. It is essential to have a good supply of chiller units in a secure location.

Space is required for farm workers to change, and needs to include toilet and washing facilities and rest areas.

The existing building is not in an ideal location and is not large enough to comply with regulations. The options for the existing building include:

- 1.) To be fully dismantled (as preferred by the flood risk officer for the environment agency)
- 2.) To be converted into a bat roost and conservation area (as preferred by the wildlife section of the environment agency)

The new processing building will be used for the following activities:

- a.) Cleaning areas
- b.) The packing of watercress
- c.) The cold storage of watercress
- d.) Storage of farm produce
- e.) The transformation of farm produce into retail products (e.g. watercress into sauce)
- f.) Changing areas and washrooms for employees
- g.) Security centre

1.2.3. The removal of asbestos cement and the replacement with timber for the water pump houses and processing plant

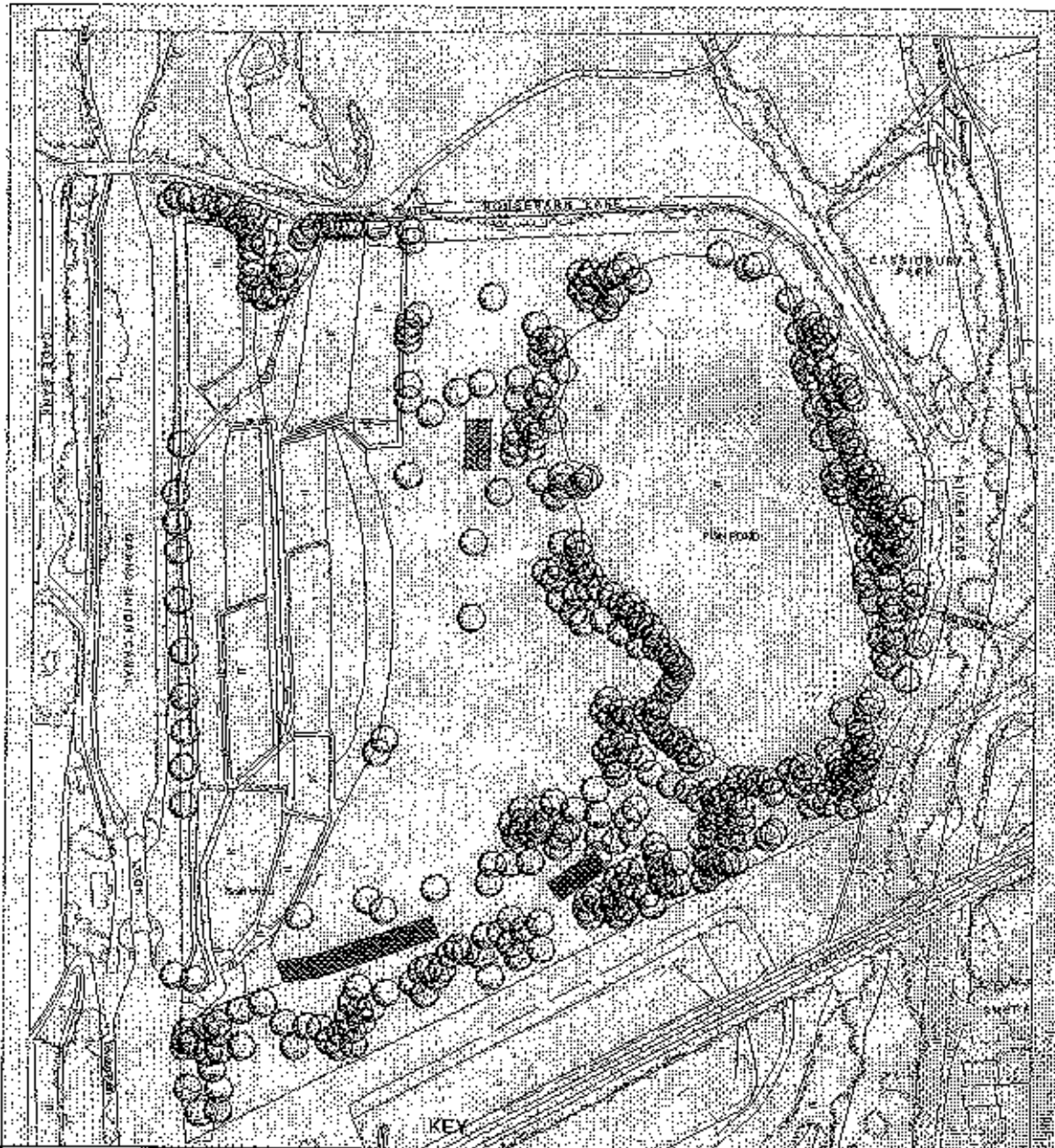
The current pump houses have asbestos roofs and contain un-metered water pumps. The intention is to continue the removal of the asbestos cement from the pump houses and processing plant. The walls will be replaced with tanalised timber. The existing pumps will be replaced with new metered water pumps, water filtration units, and water sampling stations.



1.2.4. Retrospective application for the addition of watercress silt pits

The natural growing process of watercress results in the generation of a source of silt (rotting vegetation, and the trapping of suspended materials due to the passage of stream fed water). This build up will lead to sediment in the water that must be controlled before being discharged.

It is a requirement that the water discharge is managed. At present, the suspended solids best practice for traditional watercress beds is adherence to operational controls in a code of practice for the control of silt, and that for intensive watercress beds is 20mg/l. Since the early 1990's the use of a silt settling tank before discharge has been advocated by the National rivers authority.

1.3. Ordinance survey plan showing the new position for the processing plant and the silt pits



-  Silt pit
-  Processing plant

Croxley Green Watercress Farm and Fisheries Drawing: 501/01

Title: Silt Pit and Processing Plant Location

Scale: Diagrammatic

2. Boundary fence and main entrance gate

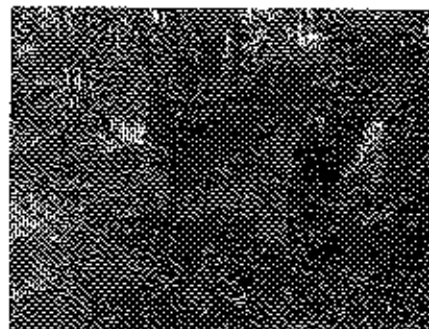
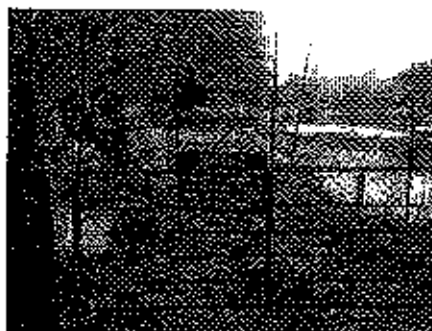
2.1. Planning application request

The best security option that should be considered as permitted development is to have 2.0 metre high palisade fencing around the whole site, with a 2.0 metre high palisade gate.

In areas adjacent to the highways if the preferred option wasn't permitted then 1 metre high welded mesh fencing would be installed, with 2 metre high fencing installed a further 2 metres back. This would reduce the site security but would improve on the current situation and may reduce the frequent incidents of fly tipping and trespass.

2.2. Current fencing

- a.) The current fence is 2.0m high, with 6cm square meshing, with two rows of barbed wire at the top. In areas the fence has been destroyed by fire or vandalism.
- b.) The gate is a single axis swing gate, covered in 6cm square meshing with several top rows of barbed wire. The gate is 3.9m wide and 3m high.



2.3. Options as described by the Crime prevention officer

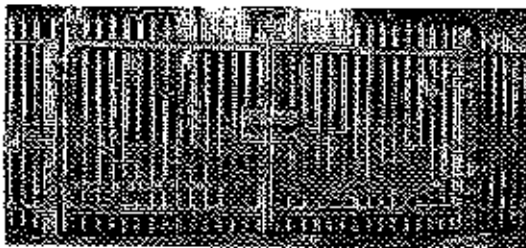
On the farm at the moment access points have been created where the fencing has been severely damaged. The elimination of the access points by the installation of fencing will improve site security. The various fencing solutions are listed below in the order of the security advantages they will provide:

Note: the addition of security fencing is supported by the environment agency and wildlife groups to prevent the further damage, and vandalism to this habitat

Materials supply cost from <http://www.aafencing.com/weldmeshchainlink.html>

1. Best option - 3m high palisade fencing – unlikely to be accepted by planners and would be very costly - £8,000 plus VAT for materials excluding labour
2. Good options – 2m high palisade fencing – within planning guidelines but very costly - £6,000 plus vat for materials excluding labour
3. Good option – 2m welded mesh with razor wire top – not as effective as palisade fencing but more affordable option – £4,000 plus VAT for materials excluding labour
4. Poor option – 2m chain link fencing with razor wire top – very easy to cut and gain access – provide low level of security
5. Poor option – 1m welded mesh fencing with razor wire top – provide low level security

2.3.1. Palisade fencing and gating



2.3.2. Wire mesh fencing



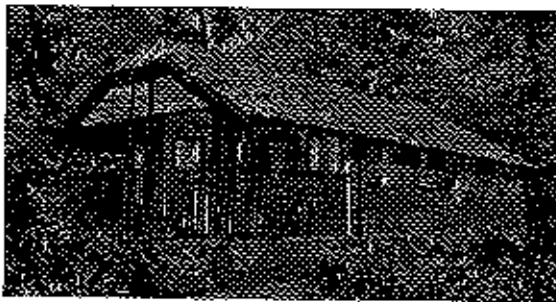
3. Relocation of watercress processing plant

3.1. Planning application request

The farming of watercress is dependent upon either being able to chill and package the watercress as soon as it has been picked or to transform it into another product (e.g. Table sauce) to extend its shelf life. The new processing building will be used for the following activities:

- a.) Cleaning areas
- b.) The packing of watercress
- c.) The cold storage of watercress
- d.) Storage of farm produce
- e.) The transformation of farm produce into retail products (e.g. watercress into sauce)
- f.) Changing areas and washrooms for employees
- g.) Security centre

3.1.1. External appearance of new building



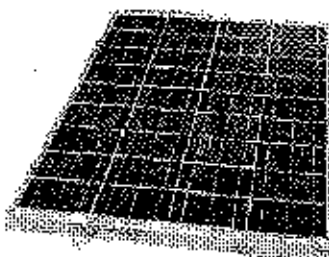
- 20 degree high pitch tiled roof with large overhang including loft space
- Tanalised exterior wood cladding
- Woodgrain PVCu double glazed windows to exterior, white to interior
- Woodgrain PVUc facias

3.2. Green energy solutions

Total daily requirement is predicted at 40kWH per day.

There are government targets of reaching between 10% and 18% of renewable energy by 2010. Our target is to achieve 4kWH per day.

3.2.1. Solar panels



Specifications

- *Model:* Kyocera KC170GHT-2
- *Peak Power:* 170W
- *Tolerance:* +10%/-5%
- *Rated Voltage:* 23.4V
- *Rated Current:* 7.27A
- *Open Circuit Voltage:* 29.07V
- *Short Circuit Current:* 8.03A
- *Maximum System Voltage:* 1000V
- *Weight:* 16 kg
- *Unit Dimensions:* (mm) 1290 x 990 x 36

5 well sited solar panels with principal South to South East facing at between a 20 to 40 degree pitch will be required.

4. The removal of asbestos cement and the replacement with timber for the water pump houses and processing plant

The pump houses need to contain the following equipment:

- 1.) Water pump
- 2.) Power system (leisure batteries and generator)
- 3.) Water meter
- 4.) UV water filter
- 5.) Mechanical filter
- 6.) Sampling centre
- 7.) Remote water analysis
- 8.) Localised farm materials

4.1. Planning application request

It is understood that planning permission is not required. The walls and roofs will be replaced with tanalised timber. The dimensions of the buildings will remain the same.

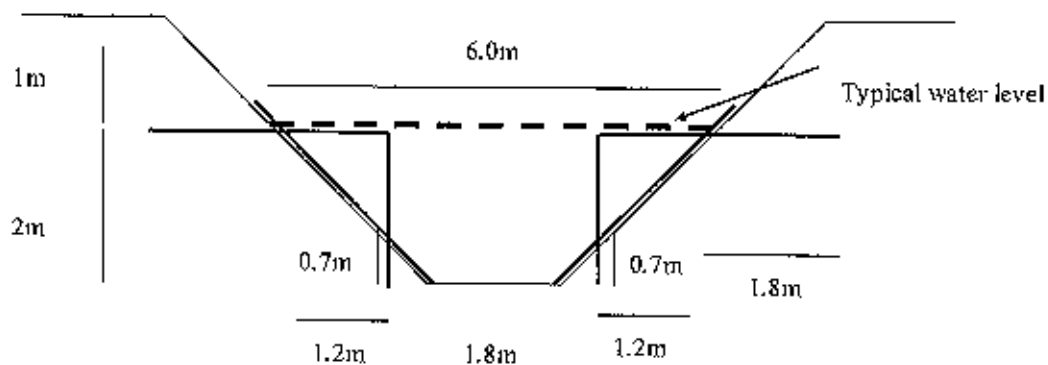
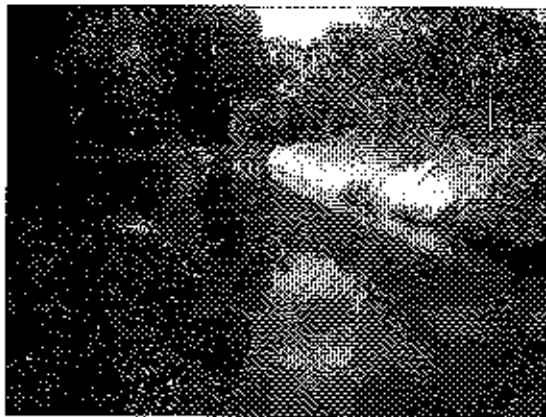
5. Retrospective application for the addition of watercress silt pits

Watercress beds will generate a source of silt (rotting vegetation, and the trapping of suspended materials due to the passage of stream fed water). This build up will lead to sediment in the water that must be controlled before being discharged. It is a requirement that the water discharge is managed.

Best practice discharge is to achieve less than 20mg/l.

Note C – Watercress bed suspended solids best practice - At present, suspended solids best practice for traditional watercress beds is adherence to operational controls in a code of practice for the control of silt, and that for intensive watercress beds is 20mg/l.

Ref: http://www.environment-agency.gov.uk/commondata/acrobat/nontech_sum_itchen_1908542.pdf



5.1. Construction of silt traps

Watercress beds will generate a source of silt (rotting vegetation, and the trapping of suspended materials due to the passage of stream fed water). This build up will lead to sediment in the water that must be controlled before being discharged.

It is a requirement that the water discharge is managed.

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Since the early 1990's the use of a silt settling tank before discharge has been advocated by the National rivers authority.

http://findarticles.com/p/articles/mi_qn4158/is_19950624/ai_n13990577

Before watercress production can begin there needs to be a harvest of the overgrown crop and a reduction in the silt level in the watercress beds.

The straight removal of the crop and silt would create such turbulence as to produce a discharge well in excess of 20mg/l. The initial strategy has been to drain, and clean areas whilst tightly controlling any discharge.

In moving forward the proposed approach is to control the discharge concentration by using a series of silt dams to slow the water flow, and be a first barrier. The silt dams will then lead to one of the silt traps in place. Once the silt has settled and a concentration of less than 20mg /l has been achieved the water will be discharged into a gravel based basin.

5.2. The design of the silt dams

The picture below shows timber dam constructions and the subsequent build up of silt below the dams.



http://www.moorsforthefuture.org.uk/mftf/downloads/publications/APPENDIX_GullyBlockReport.pdf

Figure App.2 #110_1034 Wooden dam on Kinder Scout. Dam in foreground of photo has filled well with consolidated sediment and is strong enough to support a person's weight (see footprints). *Eriophorum* is beginning to colonise on gully sides and also on the new sediment. This photo also illustrates wooden dams' ability to retain water.

By using a series of on/off drainage pipes between the dams, the dams can be emptied of silt without adding to the passing silt concentration of the water.

The strategy will be to build a series of 10 dams, at a water depth of 1 metre, with a width of 2 metres. Unlike the picture above the dams will be V shaped. This will increase the overflow area of the dam, and the draw down eddie. The overflow height is expected to be 0.01m. This will allow for a 15cm drop level from the bed to the discharge silt trap.

5.3. The silt trap before discharge

The volume of the watercress beds without being channel fed before discharge is ~ 1200cubic metres. The volume of the discharge silt pit is ~1250 cubic metres. The reserve tank is ~400 cubic metres in the event that there is unplanned rainfall to manage.

5.4. Web references:

http://myweb.cwpost.liu.edu/vdivener/notes/streams_basic.htm
http://www.state.tn.us/environment/wpc/sed_ero_controlhandbook/st.pdf
http://www.nationaltrust.org.uk/main/w-sediment_management_dredging.pdf
http://www.metrocouncil.org/environment/Watershed/BMP/CH3_RPPSedTempSedBasin.pdf
<http://www.hamiltontn.gov/waterquality/bmps/4.10st.pdf>
[http://www.forestry.gov.uk/pdf/td_report_35_91.pdf/\\$FILE/td_report_35_91.pdf](http://www.forestry.gov.uk/pdf/td_report_35_91.pdf/$FILE/td_report_35_91.pdf)
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http://www.dot.ca.gov/hq/env/stormwater/publicat/const/Nov_2001.pdf
<http://www.cascade.ab.ca/SiltFence.pdf>