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## **CROXLEY GREEN WATERCRESS FARM**

### **FLOOD RISK ASSESSMENT**

**February 2009**

**Planning Reference 08/1640/FUL**

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**FLOOD RISK ASSESSMENT – CROXLEY GREEN WATERCRESS FARM**

**1 SITE DESCRIPTION**

The site is located at NGR 508950 196350 (see Figures 1 and 4), and is located between the Grand Union Canal and the River Gade.

It has a number of watercress beds, which are gradually being brought back into use.

To support the increased commercial activity of the farm the existing buildings, totalling 52m<sup>2</sup> are to be demolished and one new building of 126m<sup>2</sup> is to be erected to provide watercress processing facilities and ancillary facilities.

To improve security a more robust fence is to be erected along the boundary to replace the existing chain link and corrugated tin fence.

To improve the efficiency of the watercress farm new silt pits will also be excavated.

All these proposed works are shown in Figure 4.

**2 FLOOD RISK**

The Environment Agency has supplied a map (Figure 2) of the only flood for which records are held, which occurred in 1999. This indicates that the only part of the site within the flood envelope of that event was the fishing lake on the eastern side of the site – which is not used for watercress farming.

The Environment Agency has also provided a Flood Zone map (Figure 3) which indicates that most of the site is within Flood Zone 3, i.e. at risk of flooding at the 1 in 100 year event or more frequently. However, in the central part of the site some higher ground is within Flood Zone 2 (at risk of floods between 1 in 100 and 1 in 1000 year return period), while a small area is within Flood Zone 1 - no risk of flooding at least up to the 1 in 1000 year flood.

The outlines of Flood Zones 1 and 2 have been copied on to Figure 4.

Unfortunately the Environment Agency is unable to provide any flood levels in this area

**3 FLOOD RISK DUE TO PROPOSED DEVELOPMENT**

**3.1 Building**

The new building, size 18m x 7m, is shown in detail in Figures 5 to 9 inclusive. Although it has a larger footprint than the existing buildings it will be constructed on brick pedestals to leave an air gap of 600mm below the underside of the floor, to improve the temperature control of the processing plant.

Crucially, it is to be located in Flood Zone 2, as shown in Figures 3 and 4, and will thus not impinge on the hydraulic conveyance or the floodplain storage of the River Gade, unlike the existing buildings, which lie in Flood Zone 3 (see Figures 3 and 4).

It is not a residential building, and although a security guard may be stationed there on occasions no sleeping accommodation will be provided. Therefore there is no specific requirement to provide dry emergency access to the building. In practice this would not be possible as the entire length of Rousebarn Lane across the floodplain would be inundated in the 1 in 100 year flood.

However, when the site is fully operational the management will sign up to the Environment Agency's Flood Warning service to ensure that any potential flooding of the site can be known in advance and the necessary precautions for plant and staff taken.

### **3.2 Fence**

Figure 4 shows the location of the proposed new fence, which will comprise steel palisade panels between posts set in concrete.

As this is all within the Flood Zone 3, and floodwater can be expected to flow through the fence, the Environment Agency has requested that the bottom of the panels be raised above ground level to permit floodwater to pass under the fence. The panels will therefore be installed with a 200mm clearance below them.

It should be noted that this will provide a considerable improvement over the present situation, where the corrugated tin sections are almost totally impermeable, and the chain link sections would rapidly block with leaves and other debris during a flood.

### **3.3 Silt Pits**

The location of the silt pits is shown in Figure 4. These are required to accept the silt removed from the watercress beds as these are gradually being renovated. Spoil excavated to form these pits will be used to infill redundant parts of various other ponds, with the top of the infill not extending above the existing bank level, so ensuring no obstruction to any floodplain flow across the site.

A wildlife survey and a wildlife report sent to the local planning authority (both submitted with this FRA) has been prepared by Herts & Middlesex Wildlife Trust, which is very supportive of the all the proposed development of the site. One of the many creatures surveyed was the water vole, which was apparently present recently, but now appears to be extinct in the park. The survey also concluded that newts (Great Crested or others) are very unlikely to be present in the park.

## **4 RUN-OFF FROM PROPOSED DEVELOPMENT**

The runoff from the roof of the proposed building will be stored in water butts on stands and used for watering the adjacent land and for bioremediation. There will thus be no increase in peak runoff from the site.

## **5 MORPHOLOGICAL IMPACT AND SUSTAINABILITY**

The proposal will have no impact on fluvial morphology, as the development will not affect the River Gade or its functional floodplain (except possibly to improve floodplain conveyance through the fence)

## **6 COMPLIANCE WITH PLANNING POLICY STATEMENT 25 (PPS 25)**

PPS 25 sets out the framework to assess flood risk for any proposed development. It contains a Sequential Test to ensure that development is appropriate for the area in which it is proposed.

From the Environment Agency's Flood Zone map the location of the proposed building is in Flood Zone 2, which from Table D1 of PPS 25 places it at a Medium Probability of flood risk.

From Table D2 the land use for the new building would either be 'Less Vulnerable' or possibly 'Water Compatible Development'.

From Table D3 it is seen that both 'Less Vulnerable' and 'Water Compatible Development' are appropriate for Flood Zone 2.

All parts of the proposed development are therefore compliant with PPS25

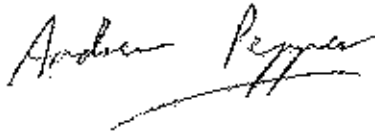
**7 CONCLUSIONS**

The Environment Agency has not been able to produce flood levels for the site, nor any historic records that indicate that the proposed location of the new building is at risk of flooding.

The Flood Zone maps indicate that the location of the building will be in Flood Zone 2.

The Sequential Test of PPS 25 has been used to show that the proposed new building is appropriate for this location.

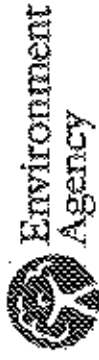
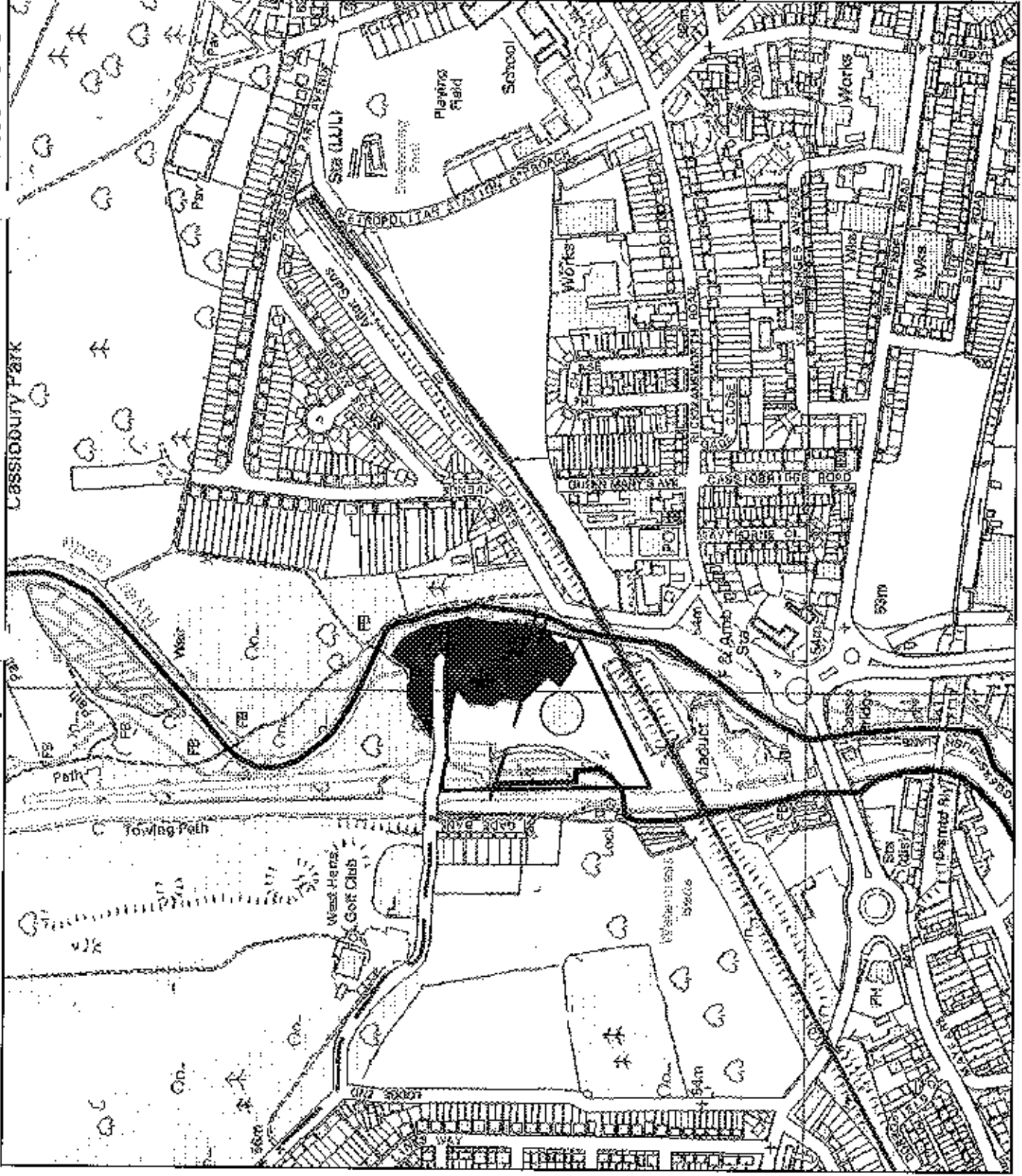
Other parts of the proposed development (fencing and silt pits) are water-compatible features.



**A T Pepper BSc (Hons), CEng, MICE, FCIWEM**  
ATPEC Ltd  
9 February 2009



# Croxley Green Watercress Farm – Flood Risk Assessment



Environment Agency  
 2 Bishops Square Business Park  
 St Albans Road West  
 Hatfield  
 Hertfordshire  
 AL10 9EX

Flood zone map  
 Croxley Green  
 Watercress Farm

26 January 2009

Figure 2 – Historic Flood Map

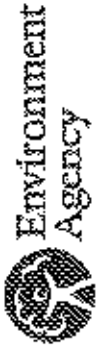
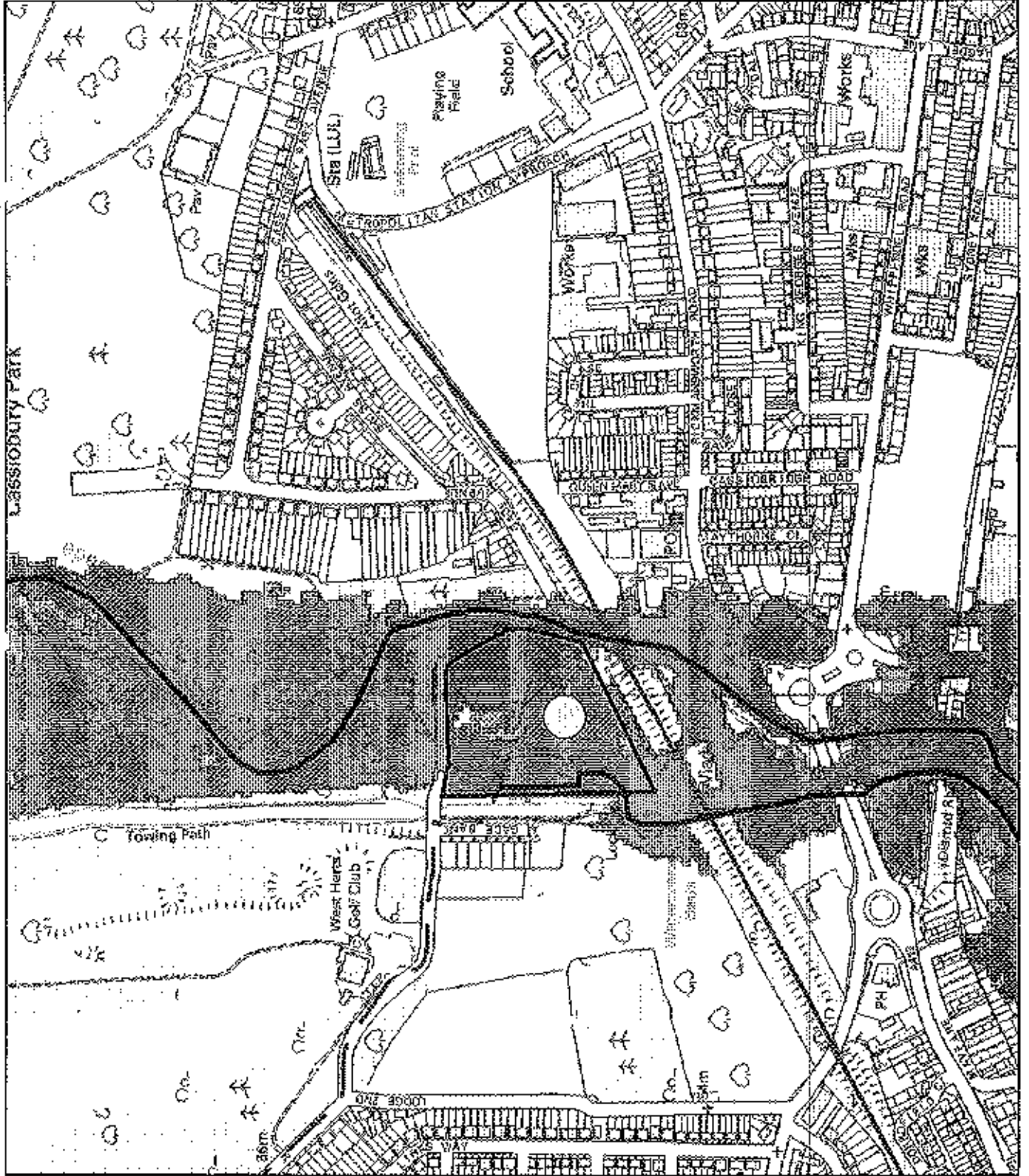
Legend



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# Croxley Green Watercress Farm – Flood Risk Assessment



Environment Agency  
 2 Bishops Square Business Park  
 St Albans Road West  
 Hatfield  
 Hertfordshire  
 AL10 9EX

Flood zone map  
 Croxley Green  
 Watercress Farm

26 January 2009

**Figure 3 – Flood Zones**  
**Legend**

- Main Rivers
- Flood Zone 2 (1 in 1000 yr)
- Flood Zone 3 (1 in 100 yr)



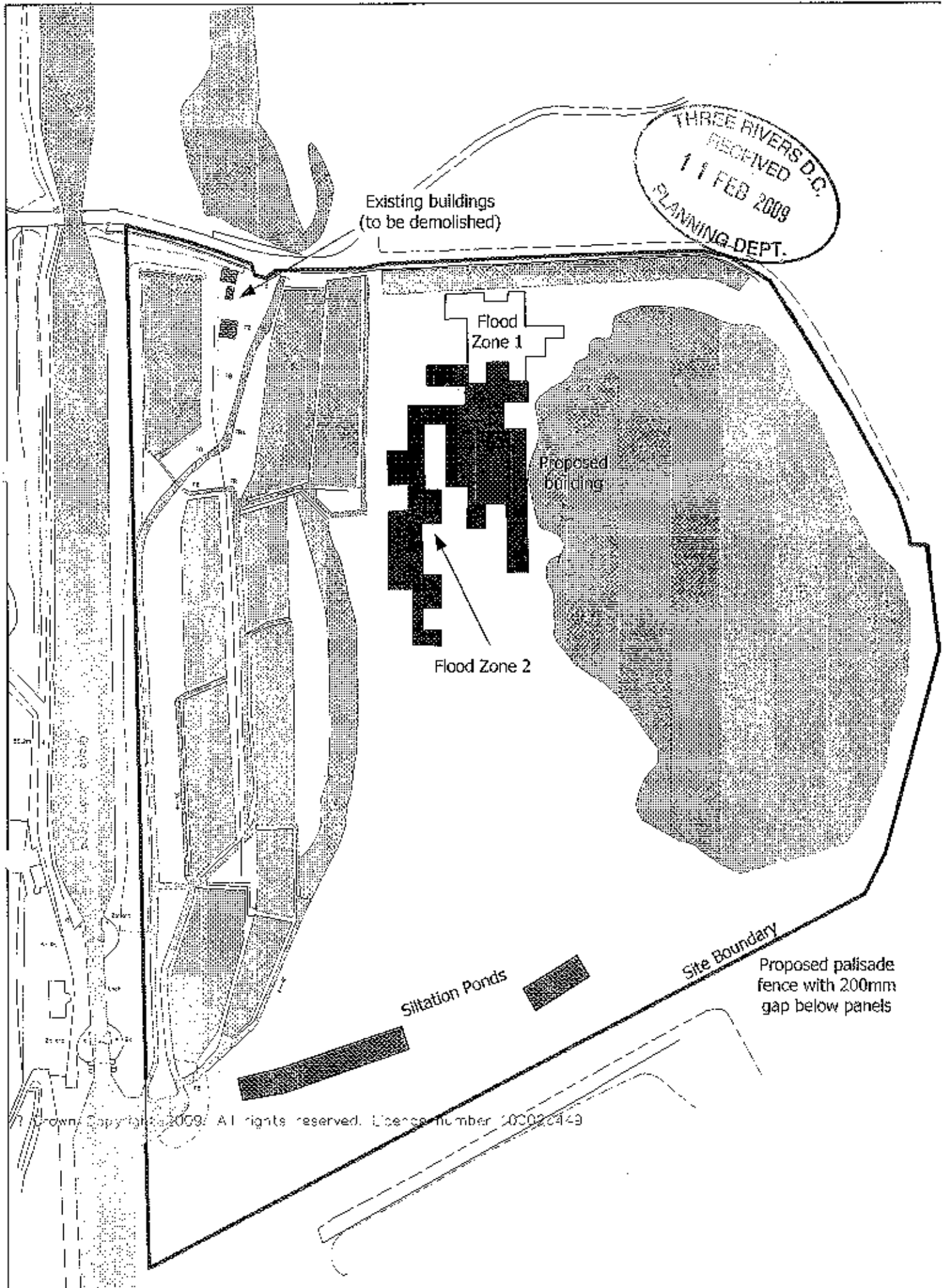
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 Metres

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 External Relations  
 Thames Region (North East Area)

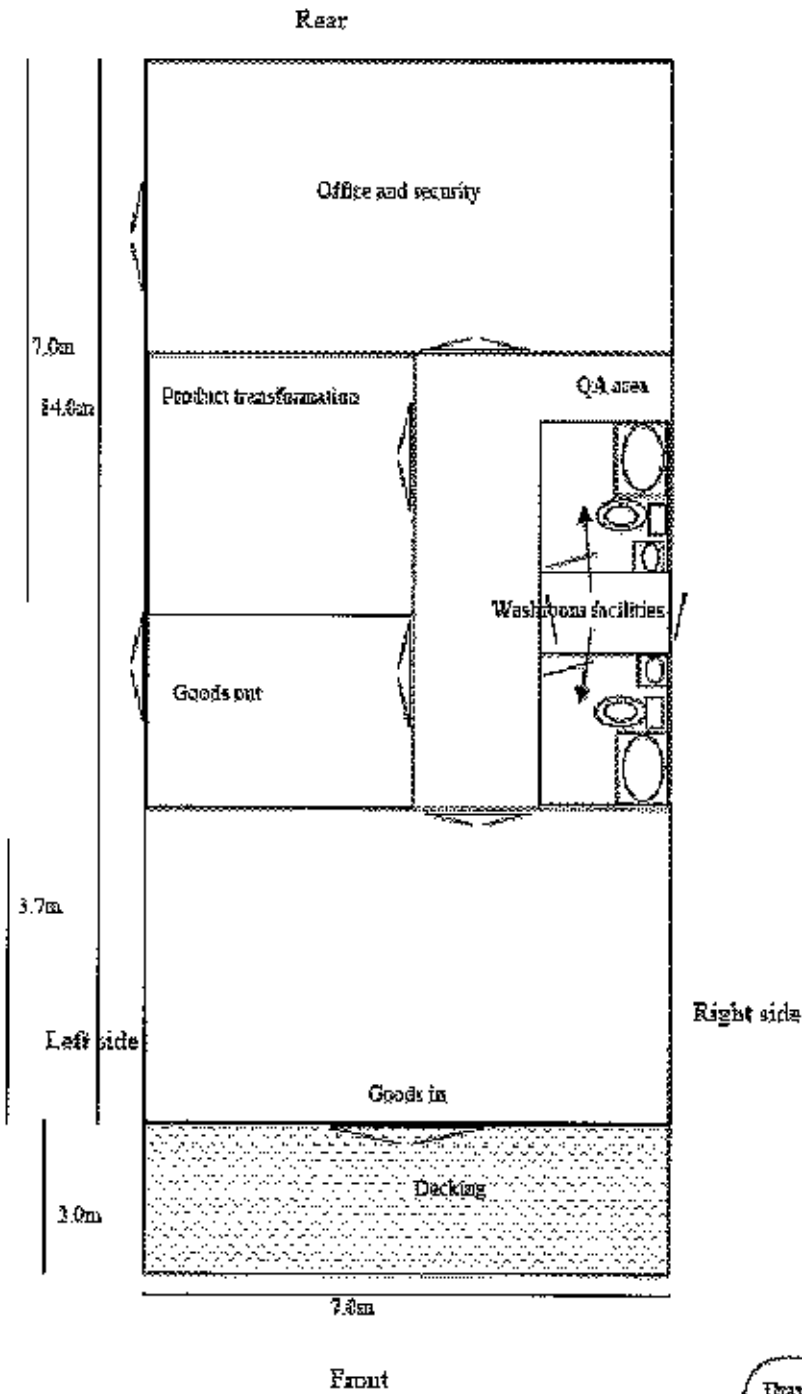
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# Croxley Green Watercress Farm – Flood Risk Assessment



# Croxley Green Watercress Farm – Flood Risk Assessment

## 1.) Floor Plan



**Figure 5 – Building Floor Plan**

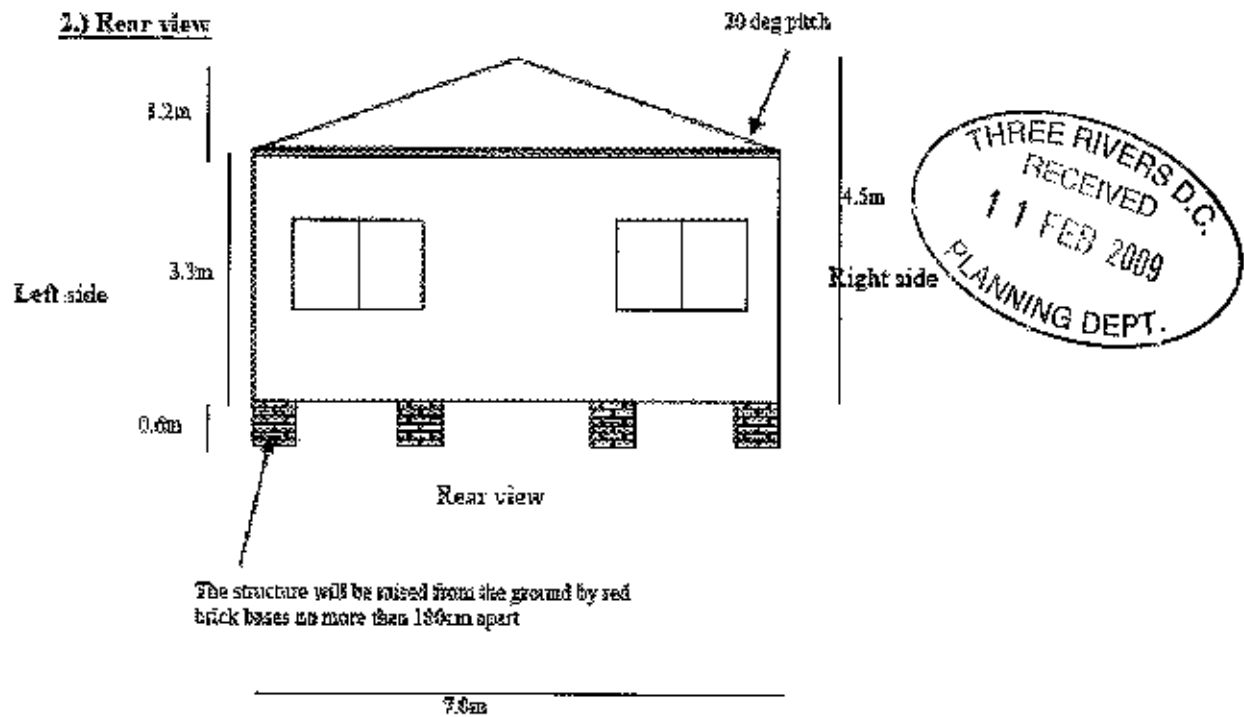
Drawings produced by RTSA  
33 Jocelyn Road, Richmond, Surrey, TW9 3TH

Project: Croxley Green Watercress Farm and Fisheries  
Title: Watercress processing plant  
Part: 1 of 7, Floor plan  
Scale: 1 in 100 when printed on A4  
Date: 3 February 2009

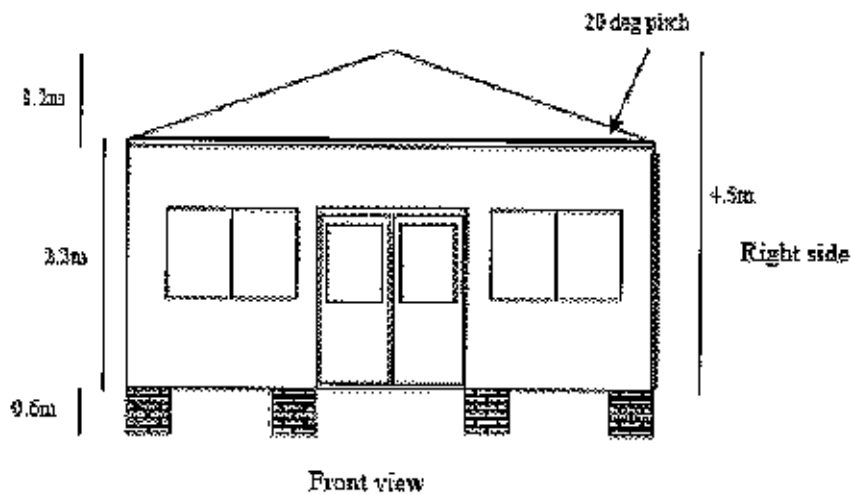
Scale 1:100



# Croxley Green Watercress Farm – Flood Risk Assessment



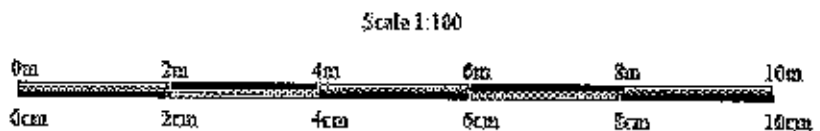
**3.) Front view**



Drawings produced by RTSA  
 32 Jocelyn Road, Richmond, Surrey, TW9 2TH

Project: Croxley Green Watercress Farms and Fisheries  
 Title: Watercress processing plant  
 Part: 2,3 of 7, Rear View, Front View  
 Scale: 1 in. EGD when printed on A4  
 Date: 3 February 2009

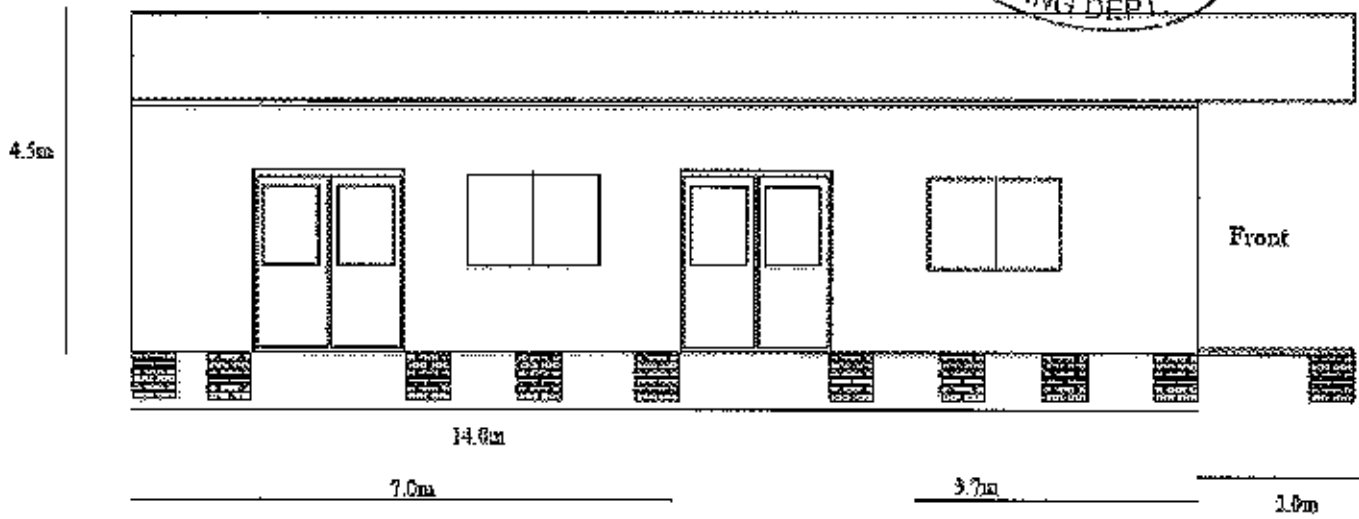
**Figure 6 – Building Front and Rear Elevations**



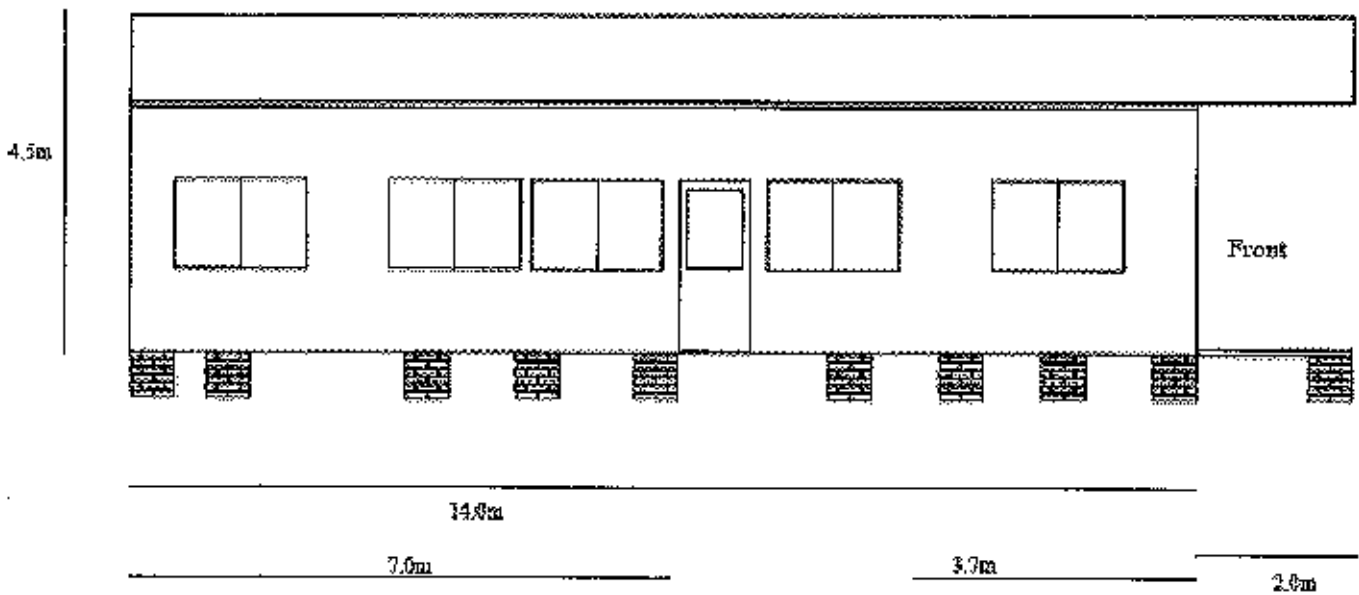
# Croxley Green Watercress Farm – Flood Risk Assessment

THREE RIVERS D.C.  
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4.) Left view



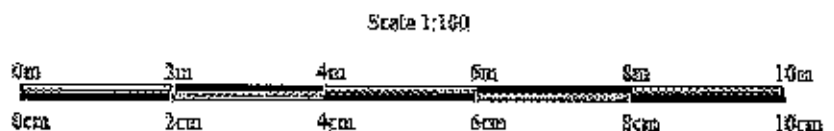
5.) Right view



Drawings produced by RTSA  
12 Jocelyn Road, Richmond, Surrey, TW9 2TH

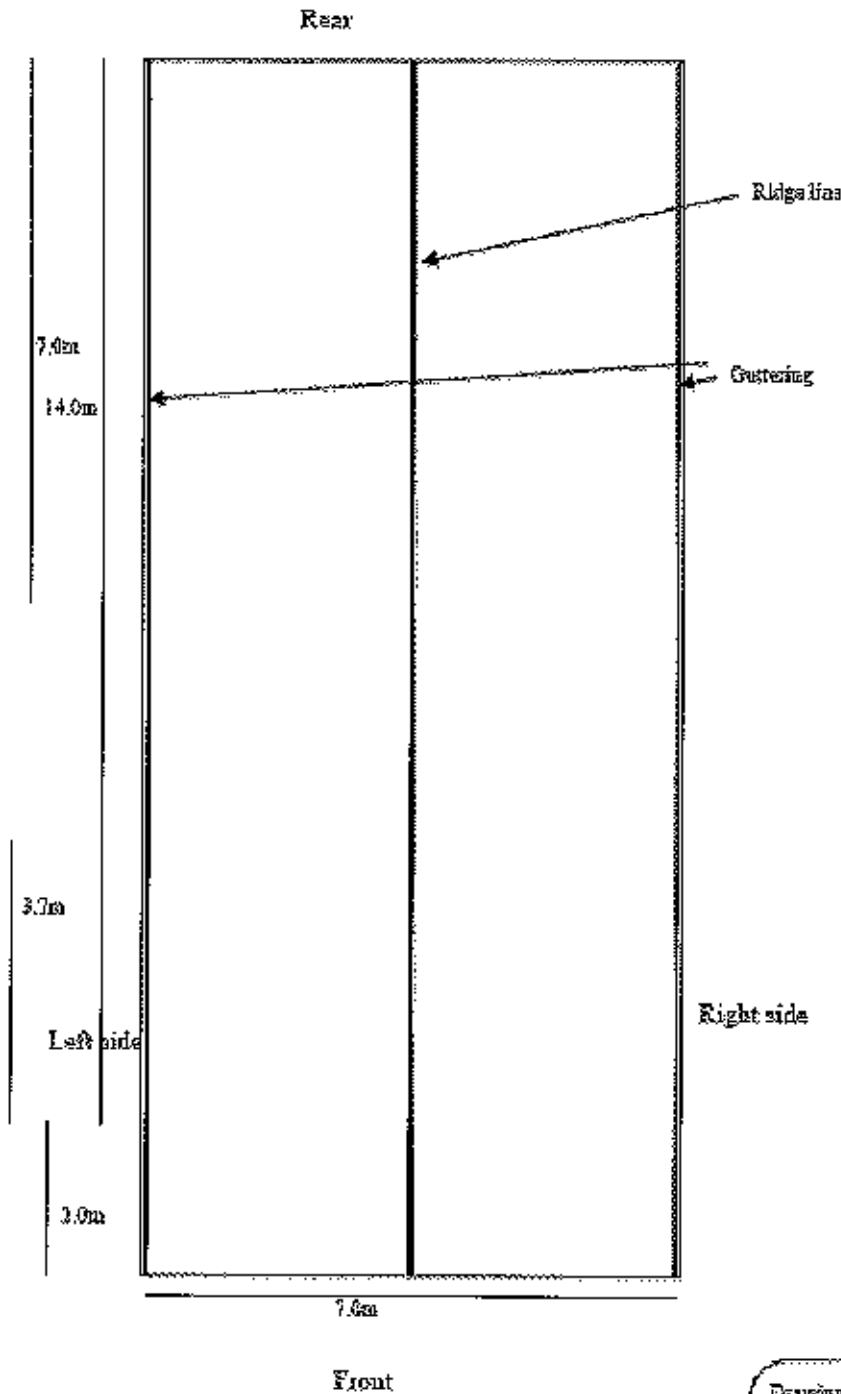
Project: Croxley Green Watercress Farm and Fisheries  
Title: Watercress processing plant  
Part: 4.5 of 7, Left view, Right view  
Scale: 1 in 100 when printed on A4  
Date: 3 February 2009

Figure 7 – Building Side Elevations



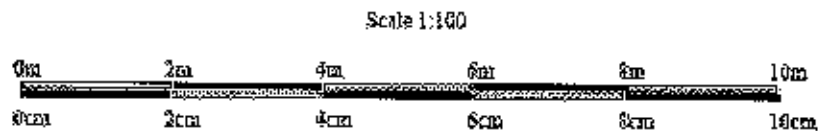
# Croxley Green Watercress Farm – Flood Risk Assessment

## 6.) Roof View



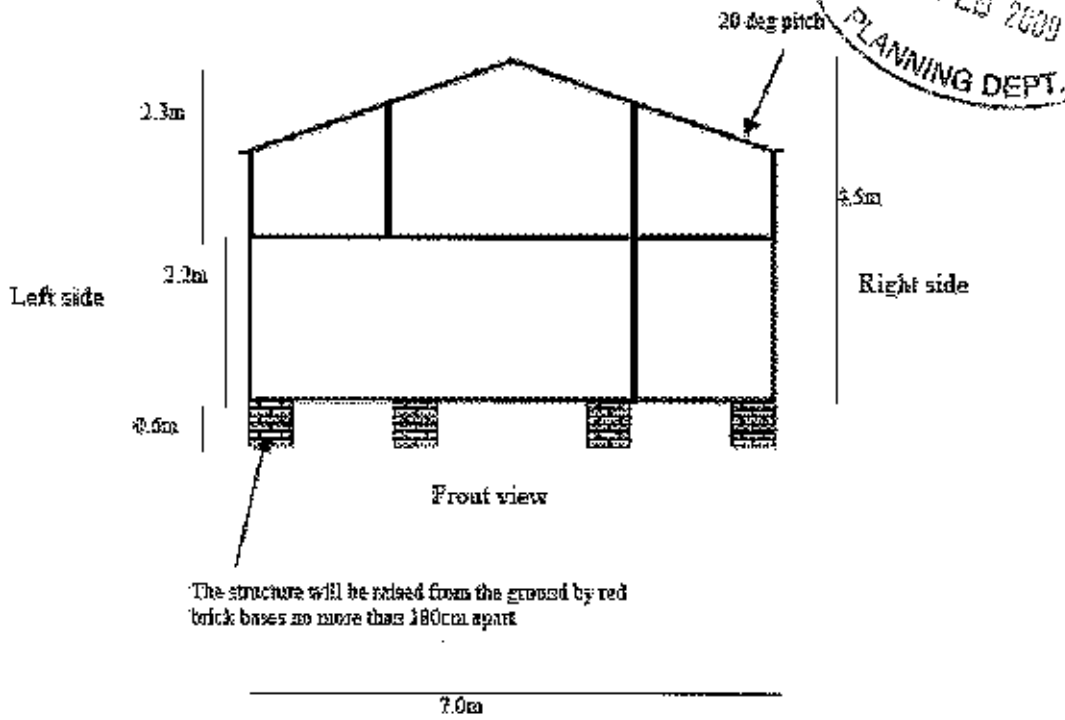
Drawings produced by RTSA  
32 Jocelyn Road, Richmond, Surrey, TW9 3TH  
Project: Croxley Green Watercress Farm and Fisheries  
Title: Watercress processing plant  
Part: 6 of 7, Roof View  
Scale: 1 in 100 when printed on A4  
Date: 3 February 2009

Figure 8 - Building Roof Plan



# Croxley Green Watercress Farm – Flood Risk Assessment

## 7.) Front mid-section view



Drawings produced by RTSA  
32 Jocelyn Road, Richmond, Surrey, TW9 2TH

Project: Croxley Green Watercress Farm and Fisheries  
Title: Watercress processing plant  
Part: 7 of 7, front mid-section view  
Scale: 1 in 100 when printed on A4  
Date: 3 February 2009

Figure 9 – Building Section

Scale 1:100

