



# KNAPP HICKS & PARTNERS LTD

CONSULTING STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEERS



## FLOOD RISK ASSESSMENT

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HALL FARM,  
LONDON ROAD,  
RAWRETH,  
WICKFORD, ESSEX  
SS11 8SA


MARCH 2013  
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APPROVAL SHEET AND FOREWORD

**FLOOD RISK ASSESSMENT  
FOR  
HALL FARM, RAWRETH**

Report Status: Final    Date of Issue: 27.03 2013		
	Name	Signature & Date
Author:	Jennifer Sturman CEng MICE	 27-3-13
Checked & Approved:		

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*This report shall not be used for engineering or contractual purposes unless signed above by the author and the checker/approver, and unless the report status is "Final".*

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APPENDIX A	DRAWINGS
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## EXECUTIVE SUMMARY

	Item	Comment
1	Development description	Residential
2	Location	TQ 76667 92105 Rawreth, Wickford, Essex
3	Site Area	1361 m2
4	Planning Authority	Rochford District Council
5	Current Land Use	Residential
6	History of Flooding	Fluvial flooding 1958
7	EA Flood Zone Classification	3
8	EA Modelled Flood Level	
	1/50 year level	5.10m
	1/100 year level	5.14m
	1/100 year level plus climate change	5.16m
	1/1000 year level	5.22m
9	Site Level	5.2 – 4.75 mAOD
10	Flood Compensation	None required as no ground raising to be undertaken
11	Allowance for Climate Change	Yes included in EA model
12	Impact on Flood plain	None as no ground raising
13	Safe Access and Egress	Via London Road
14	Drainage	Surface water to soakaway (?) and foul to cess pool

## **1 INTRODUCTION**

Knapp Hicks & Partners Ltd have been appointed by Ellipta to undertake a Flood Risk Assessment (FRA) for the re-building of a residential dwelling known as Hall Farm located on London Road, Rawreth. This property has been destroyed by fire and it is planned to construct a replacement dwelling on the same footprint.

### **1.1 Requirement for a Flood Risk Assessment**

This report has been prepared to accompany a planning application for the proposed development as the site is located within Flood Zone 3 as defined by the Environment Agency.

### **1.2 Scope of Assessment**

The purpose of this report is, in accordance with the requirements of BS8533, to:-

- Identify the mechanisms which could cause flooding at the site;
- Assess the flood risk posed to the site from these sources;
- Assess whether there will be an increased flood risk to neighbouring properties as a result of the proposed development;
- Assess the management of surface water on the site.

## 2 SOURCES OF INFORMATION

This flood risk assessment refers to the following documents:-

### 2.1 General Documents

#### BS8533:2011 Assessing & Managing Flood Risk in Development – Code of Practice (ref.1)

The British Standard gives recommendations and guidance on the appropriate assessment and management of flood risk where development is proposed in the UK. It is intended to provide practical assistance for dealing with flood risk in and around developments.

#### Technical Guidance to the National Planning Policy Framework (ref.2)

This document was published in March 2012 and replaces PPS25. It advises on the flood risk management of proposed developments with regard to sea and river flooding.

#### Strategic Flood Risk Assessment (SFRA) (ref.3)

The SFRA was published in February 2011 by Scott Wilson on behalf of Rochford District Council and deals with flooding from all sources as listed in PPS25 which was the current guidance at that date, although the main emphasis is upon the risk of tidal and fluvial flooding within the borough.

There are no records in this document of flooding at this location although there is a discussion regarding the fluvial flood risk posed by the tributaries of the River Crouch in this area.

### 2.2 Site Specific Documents

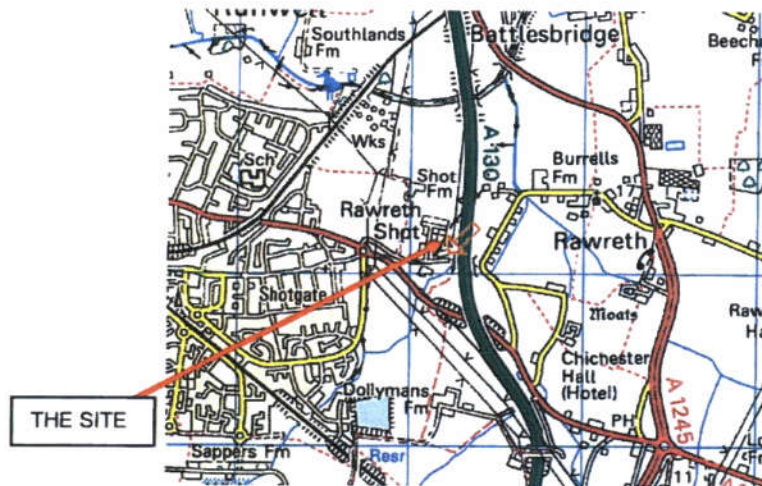
The following documents and drawings have also been consulted for the preparation of this flood risk assessment:-

- Topographic Survey by Sterling Surveys, dated March 2013, included at Appendix A;
- Proposed Option 1 Dwg. 19299/10 rev B, by Ellipta, dated June 2012, included at Appendix A;
- Proposed Option 2 Dwg. 19299/11 rev C, by Ellipta, dated November 2012, included at Appendix A.

### 3 EXISTING SITE DESCRIPTION

#### 3.1 Location

The site is located at NGR TQ 76667 92105 between Rayleigh and Wickford in Essex.



It is an irregular shaped site fronting onto London Road. Other boundaries are formed by a field to the east and residential gardens to the rear and other side. The A130 is located beyond the eastern field and is raised on a slight embankment at this location.



The footprint of the house measures approximately 112m<sup>2</sup>. A plan of the original dwelling is attached at Appendix A.

### **3.2 Topography**

The site falls from north to south with a high point of 5.2m adjacent to the footway at the front of the property and a low point to the rear of 4.7mAOD. The finished floor level of the existing house is recorded on the survey as 5.22mAOD.

The relative levels of the surrounding land appear to be comparable with those of the site itself, apart from the A130 to the west which appears to be raised on a slight embankment at this location.

### **3.3 Geology**

The British Geological Society Web Viewer indicates that the site is underlain by London Clay with some superficial deposits. An intrusive investigation at the site identified Clay Head to about 2 metres below ground level with gravels below.

### **3.4 Hydrology**

The North Benfleet Brook which is a tributary of the River Crouch is located some 50m to the south of the site flowing in a west to east direction. There is also a pond shown on the EA maps which appears from aerial photographs to be a balancing pond connected to the surface water drainage of the A130 and which appears to outfall into the ditch. This watercourse continues under the A130 where it turns north and heads towards the main river.

### **3.5 Hydrogeology**

The Environment Agency Groundwater Maps show that the site is not located in any Source Protection Zone but it does indicate that the site is located within a groundwater vulnerability zone of a Minor Aquifer of intermediate importance.

The trial pits carried out at the site found water at shallow depth in most of the holes and it seemed to settle at 0.30m to 0.55m below ground level.

### **3.6 Existing Site Drainage**

There are no public sewers adjacent to the property. The foul is discharged to a cess pool shown on the survey as located in the rear garden. There is no record of where the surface water discharges but in view of the geology it is likely that there are soakaways located at the site which are unrecorded.

## **4 PROPOSED DEVELOPMENT**

It is proposed to reconstruct a new dwelling on the same footprint as the original house.

The impermeable area of the site will be unchanged by these works.

## **5 SURFACE WATER MANAGEMENT**

It is proposed that the surface water generated by the site will be connected to the existing drainage at the site. There will be no increase in surface water generated by the development.

## **6 HISTORIC FLOODING EVENTS**

This area was flooded during the 1958 when the River Crouch catchment was affected by exceptionally heavy rainfall. See map attached at Appendix B. There are no indications as to the depth of flooding.

It should be noted however that although the area is shown as flooded it does not necessarily mean that individual properties were flooded internally. It is also possible that the pattern of flooding in the area has changed since then and that this area would flood under different circumstances. For example, a similar flood event is recorded in the SFRA for 1968 but the property appears not to have been flooded at that time.

This is a very low-lying area which is criss-crossed with land drains and ditches. There are numerous flooding incidents noted on the Rawreth Parish Council website although there do not appear to be any records of internal property flooding. The PC appear to be very proactive in ensuring that the relevant parties are pressed into keeping their ditches cleared, whether that be the Highway Authority or other riparian owner.

There are no records of flooding from other sources.

## 7 FLOOD RISK ASSESSMENT

Risk is a combination of the probability of an event occurring and the consequence of that event. Current guidance recommends that a Flood Risk Assessment should consider all possible sources of flooding for a given site. The potential sources of flooding affecting this site have been summarized in Section 7.1 below.

### 7.1 Summary of Flood Sources

Source	Potential pathway	Further Consideration
Coastal	No	None
Fluvial	River Crouch catchment	Section 7.2
Overland flow	Open ground rising away from site	No
Groundwater	High ground water levels	Section 7.3
Drainage Infrastructure	Highway drains surcharging	Section 7.4
Other/artificial	Pipe burst	Section 7.5 (i)
	Reservoir failure	Section 7.5 (ii)

### 7.2 Fluvial Flooding

Fluvial flooding occurs when channel capacity is exceeded at times of exceptionally high rainfall.

This site is located to the north of a tributary of the Benfleet Brook which is in turn a tributary of the River Crouch. The external ground level at the site varies from 5.2m AOD to 4.7m AOD.

The Environment Agency has provided a series of maps centred on SS11 8SA and which are included at Appendix B. One of these illustrates flooding event which took place in 1958. This shows the site to be located well within the flood zone.

The Environment Agency have also supplied predicted flood levels for the river from their South Essex Flood Risk Study (included at Appendix B). This shows a 1% AEP value of 5.14m AOD, and a 1% AEP + climate change allowance value of 5.16m AOD.

Probability of fluvial flooding at the site : High  
Severity of Flooding: Medium  
Assessed Risk: High

This flood risk is judged to be high. However, following discussions with the Environment Agency, it is proposed to rebuild the property with a finished floor level set at 5.46m AOD.

This level is related to the predicted flood level at this location for a 1 in 100 year storm including climate change of 5.16m AOD. Whilst the existing threshold is set slightly higher than this level it is necessary to allow an additional 300mm freeboard when setting proposed floor levels. The freeboard allowance is essentially a safety margin which allows for uncertainties in the hydraulic modelling process and accuracies of the methods used.

It is also proposed to rearrange the accommodation so that all bedrooms will be situated on the first floor.

The residual risk of flooding to the site from this source will be reduced by mitigation factors, but will not be eliminated entirely. It is possible that an escape route will be available to the front of the property where ground levels rise slightly, but if not then residents can escape to the first floor level of the property where they will be out of immediate danger.

### **7.3 Groundwater Flooding**

This can occur where the water table rises to such a level that flooding occurs e.g. in low lying areas underlain by permeable ground, usually due to extended periods of wet weather.

Relatively high ground water levels were identified during the trial hole investigation, but the logs indicate that this was connected to the gravels which underlie the Clay Head material as they were dry until the gravel was encountered. This geology appears to be connected to the water bearing strata of the River Crouch catchment rather than a perched water table which could rise with heavy rain.

The property has no basement and it is proposed to lift the finished floor level by an additional 240mm from the existing level. There will be no connectivity with the underlying gravels and so there is very little risk of the property being affected by internal flooding from groundwater. It may be advisable to install some interceptor land drains around the property to encourage any groundwater which may be present to drain away from the structure.

Probability of groundwater flooding: Medium

Consequence of Flooding: Not likely to be internal and therefore Low

Assessed Risk: Low

It is unlikely that this problem would be exacerbated by climate change as whilst precipitation is predicted to become more intense for longer periods the overlying cap of clay should insulate the property from this risk.

### **7.4 Sewer Flooding**

Flooding from sewers occurs when rainfall exceeds the capacity of the pipe network. This may be due to a lack of capacity due to increased demand or events larger than originally designed for. Alternatively, a lack of maintenance may have reduced capacity through sedimentation. This type of flooding is usually confined to relatively localised areas, but it can be rapid and unpredictable.

There are no public sewers near to the site although there is likely to be a highway drain in London Road which would pose a risk. It must be assumed that this drain would discharge into the local ditch network and therefore fluvial flooding would also cause surcharging within the highway drainage system.

There are also some surface water drains and possible soakaways located around the site which may also be the cause of localised flooding. However it is not anticipated that these would cause any internal flooding.

Probability of sewer flooding: Medium

Consequence of Flooding: Not likely to be internal and therefore Low

Assessed Risk: Low

It is anticipated that rainfall events will increase in intensity and duration due to climate change thus increasing the risk of flooding from overwhelmed sewerage.

## **7.5 Artificial Sources**

Flooding from artificial sources has been defined as that arising from the failure of manmade infrastructure. This includes failure of canals or reservoir embankments, as well as activities such as ground water pumping. Flooding may also occur because of overtopping or failure of the impounding embankments or structures. This type of flooding can happen suddenly resulting in rapidly flowing, deep water.

There is a reservoir located to the south west and the site is included in the likely flooded area on the Environment Agency map. However it is unknown what the impounded volume is and therefore it is difficult to judge what the effect of such a failure would be on the property. It is to be hoped that the lifting of the finished floor level to mitigate the risk of internal flooding from fluvial causes would also protect the property in this event.

Other risks in this category would include the failure of water mains. However it is likely that in this case any escaping water would find its way into the nearest gullies and drain away. It is highly unlikely that such a failure would occur at a time of heavy surface water flooding.

Probability of reservoir flooding: Low

Consequence of Flooding: Not likely to be internal and therefore Low

Assessed Risk: Low

Probability of water mains flooding: Low

Consequence of Flooding: Not likely to be internal and therefore Low

Assessed Risk: Low

## **7.6 Overall Risk of Flooding**

As discussed above main risk of flooding at this site will be fluvial flooding from the River Crouch catchment. There is a real risk of flooding recurring at some time in the future and it is likely that the probability of such an event occurring will increase as climate change takes effect.

There is a low risk of flooding from a local reservoir and also from highway drains and on-site drainage.

## **7.7 Mitigation Measures**

As we have discussed previously there is a real risk of flooding occurring at the site and whilst it is to be hoped that by lifting the finished floor level of the property none of these options would be required there are some simple actions which would assist in a quick and easy clean up.

These can include:

- Obtaining temporary bungs for toilets and waste pipes etc to prevent foul sewage from surcharging back into the property.
- Ensuring that all inspection chamber covers located in the floodable areas should have lockable covers, particularly for the cess pools located to the rear of the property;
- Provide a solid floors with water resistant finishes and then use rugs rather than fitted carpets;
- Use solid timber rather than chipboard or MDF units – plastic and metal are also good alternatives;
- Lime plaster or cement render rather than conventional gypsum plaster to at least 500mm above anticipated flood levels which in this case is modelled to be 5.16m. Therefore these finishes should be applied to at least 0.2m above floor level.
- Electric sockets to be located at high level, and all services where possible to enter the property at high level.

It is noted that this house has a first floor and so it is assumed that in the event of flooding items could be moved to this higher level as indeed can residents if flood levels are such that an escape route is not available.

Further reference should be made to the document "*Preparing for Floods: Interim Guidance for Improving the Flood Resistance of Domestic and Small Business Properties*", published October 2003 by the DCLG, during the detailed design which will provide additional guidance concerning flood mitigation measures.

It is further recommended that the residents should formulate a Flood Action Plan to

## 7.8 Effect of Climate Change

It is now accepted that climate change will increase the risk of flooding as rainfall events become more intense, frequent and prolonged. *Table 5: Recommended national precautionary sensitivity ranges for peak rainfall intensities, peak river flows, offshore wind speeds and wave heights* (ref 2) provides guidance on the enhancement which should be applied to hydrological models. It is predicted that peak rainfall intensity will have increased by up to 30% by 2085 and peak river flow by 20%. The figures provided by the Environment Agency have included for these changes.

## 7.9 Sequential Test

The site falls within Flood Zone 3 on the Environment Agency Flood Map, see Appendix B, which is classified as land assessed as having a 1 in 100 or greater annual probability of river flooding (>1% AEP) at a location in any one given year.

Reference to *Table 2 :Flood risk vulnerability classification<sup>1</sup>* indicates that buildings used for dwellings are "more vulnerable" to flooding and therefore not normally appropriate for this site. However, there has been a dwelling on this site for many years and this is considered to be a minor development. It is considered therefore that neither the Sequential Test nor the Exception Test are applicable in this case.

## **8 OFFSITE FLOOD IMPACT ASSESSMENT**

A development should not exacerbate flood risk to other property and, wherever possible, opportunities should be sought to reduce flooding on a local scale. As such, a flood risk assessment must also consider the potential flood risk posed by the development itself to adjoining properties.

In this case there will be no change to the footprint of the dwelling and it will not affect groundwater flows, or increase overland flows.

It is considered therefore that there will be no detriment to surrounding properties caused by this development.

## **9 CONCLUSION**

It is proposed to reconstruct a dwelling that had been destroyed by fire. The building will be in the same place and on the same footprint as the original building.

The main flood risk to this site will be from fluvial flooding linked to the River Crouch. However the finished floor level will be raised to 5.46m AOD which is the 1 in 100 year flood level including climate change and an additional 300mm freeboard. This will reduce the flood risk to the property to a low probability. There will be no bedrooms on the ground floor of the property.

It is further concluded that the development will not increase the risk of flooding elsewhere.

It is recommended that the residents are encouraged to formulate a Flood Action Plan if they do not already have one in place.

# APPENDIX A

## DRAWINGS

**STERLING**  
surveys

SUITE 3, HEADLEY HOUSE, HEADLEY ROAD, GRAYSHOTT,  
HINDHEAD, SURREY, GU26 5TL  
TEL: 01483 861111 FAX: 01483 861107  
Email: sterling@sterling-surveys.co.uk Website: www.sterling-surveys.co.uk

**LEGEND**

- |  |                             |  |                          |
|--|-----------------------------|--|--------------------------|
|  | Survey Station              |  | Bench Mark               |
|  | Direction of Face/Back      |  | Level Position           |
|  | Step Up                     |  | +15.70                   |
|  | Fencing                     |  | Stairing Ceiling         |
|  | Fence                       |  | Stairing Floor           |
|  | Foot Drainage (150mm Pipe)  |  | Teleson GIN              |
|  | Storm Drainage (150mm Pipe) |  | Teleson GIN              |
|  | Electricity GIN             |  | Fresh Water (150mm Pipe) |
|  | Electricity GIN             |  | Water (150mm Pipe)       |

**ABBREVIATIONS (Where Applicable)**

- |     |                              |     |                    |
|-----|------------------------------|-----|--------------------|
| AGL | Above Ground Level           | IC  | Inspection Cover   |
| ASL | Arch Springing Level         | IL  | Insert Level       |
| AW  | Arch Head Level              | IK  | Keen Gutter        |
| AV  | Air Valve                    | LI  | Landing Level      |
| BD  | Bollard                      | LP  | Lamp Post          |
| BW  | Brick Wall                   | MC  | Masonry IC         |
| BRW | Brick Work Wall              | MH  | Manhole            |
| BSL | Beam Soffit Level            | MS  | Manhole            |
| BT  | British Telecom IC           | MR  | Metal Railings     |
| CAV | Cable TV                     | NB  | Notice Board       |
| CB  | Cable Box                    | NI  | No Further Info    |
| CD  | Cable Duct                   | DN  | Downhead           |
| CE  | Cleaning Eye                 | FR  | From Records       |
| CH  | Change in Height of Drilling | NS  | Roof Gully         |
| CL  | Cover Level                  | RL  | Roof Level         |
| CM  | Cable Marker                 | RNB | Roof Name Board    |
| CO  | Conc Pit                     | RS  | Rise Sign          |
| CPS | Conc Paving Slab             | RS  | Raised Steel Joint |
| CSL | Cable Soffit Level           | RY  | Retaining Wall     |
| D   | Door                         | SA  | Sidewalk           |
| DP  | Door Pipe                    | SC  | Sign Catch         |
| DL  | Door Head Level              | SP  | Sign Post          |
| DSL | Duct Soffit Level            | SV  | Stop Valve         |
| CP  | Cable Cable Pit              | T   | Trunking           |
| LJR | Line Junc. Box               | TL  | Threshold Level    |
| CP  | Electricity Pole             | TL  | Traffic Light      |
| ESP | Earthing Point               | TP  | Telephone Pole     |
| FB  | Floor Bed                    | UG  | Underground        |
| FCB | Fence Carriage Soffit Level  | UG  | Underground        |
| FX  | Fire Hydrant                 | UL  | Under Lift         |
| FL  | Floor Level                  | V   | Vent               |
| FIB | Fibre Into Ground            | VP  | Vent Pipe          |
| Q   | Quill                        | V   | Window             |
| GH  | Gas Meter                    | WH  | Wash Hand Basin    |
| GS  | Gas Stop Cock                | WH  | Window Head Level  |
| GV  | Gas Valve                    | WV  | Window Sill Level  |
| H   | Highlight                    | WV  | Water Valve        |

**NOTES**

LEVEL DATUM: OS GPS  
BENCH MARKS USED: N/A

THE ORIGIN AND ORIENTATION OF THE SURVEY GRID IS ORDNANCE SURVEY NATIONAL GRID.

**UNDERGROUND SERVICES INFORMATION**

**DRAINAGE BY INSPECTION**  
While all reasonable care has been taken in locating the underground services shown on this plan, the completeness or accuracy of the information cannot be guaranteed. Users are advised to satisfy themselves before connections are made.

REV	DATE	PREV. JOB NO.	REVISION DETAILS

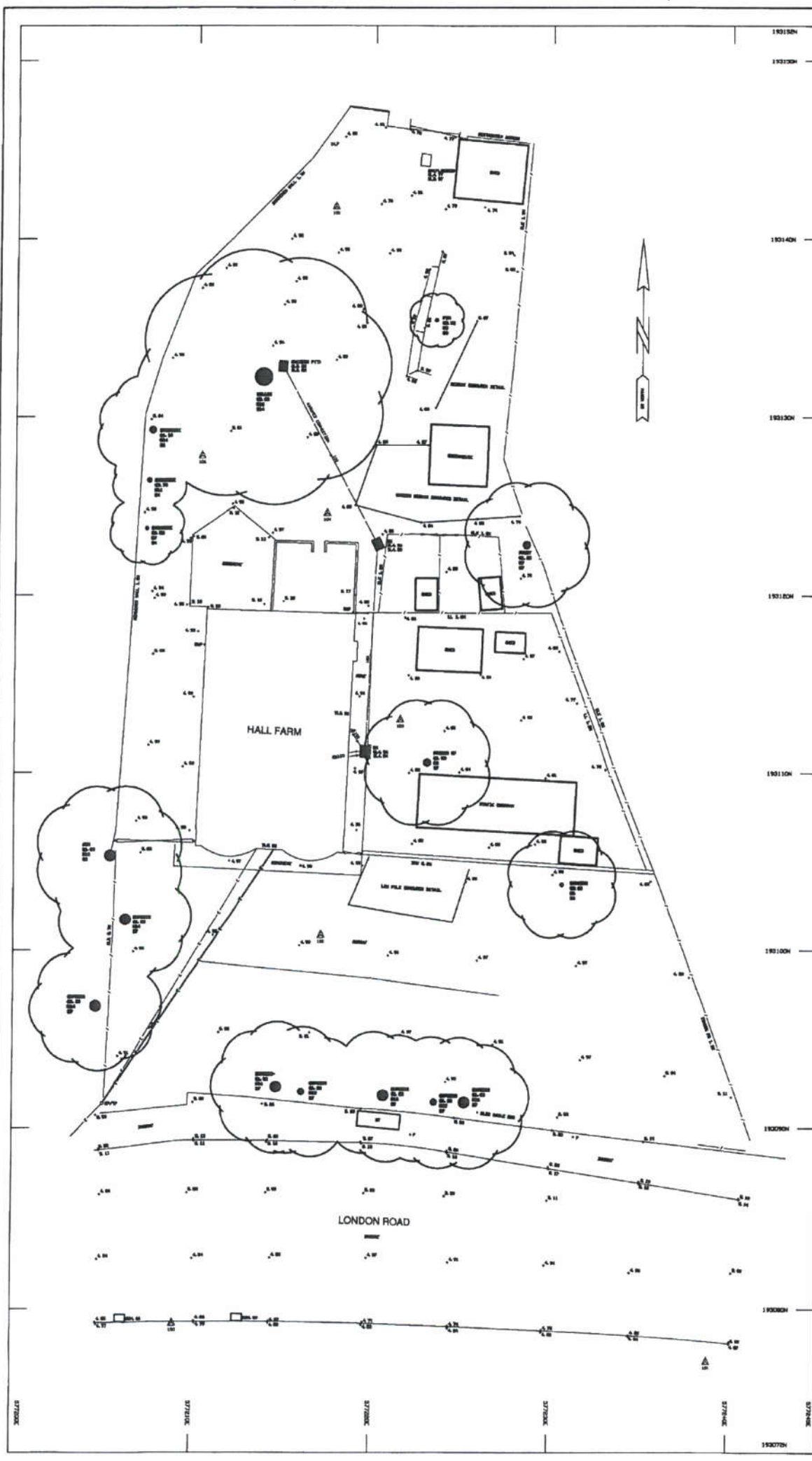
**ELLIPTA LTD**  
67-69 ST. JOHNS ROAD  
ISLEWORTH  
MIDDLESEX  
TW7 6NL

**JOB TITLE**  
HALL FARM  
LONDON ROAD  
RAWRETH

**DRAWING TITLE**  
SITE SURVEY

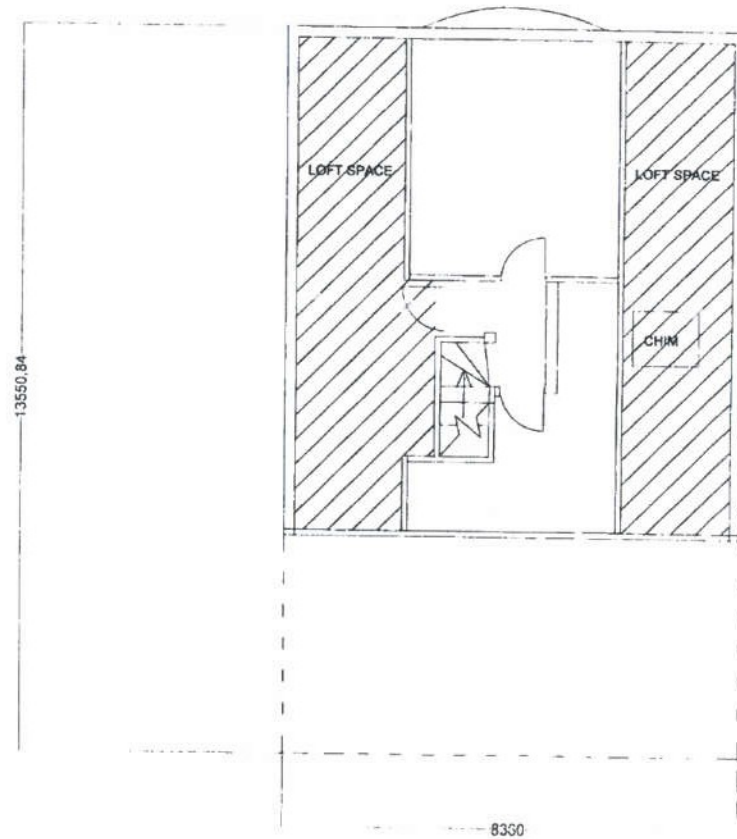
DRAWING 1 OF 1  
CLIENT JOB NO.: HALL-FARM-DWG  
SCALE: 1/100  
REVISION: 001/1

SHEET SIZE: A3  
DATE: MAR 2013  
SURVEYER: RLV  
DRAWN: RLV  
CHECKED: MCH





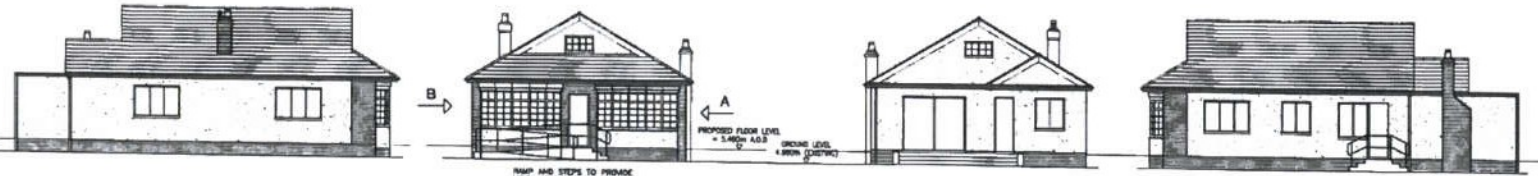
EXISTING GROUND FLOOR PLAN



EXISTING FIRST FLOOR PLAN

					Discipline		Site:	
					Category		HALL FARM	
					Category		Building:	
							RAWRETH	
							Floor/Discipline:	
							GROUND	
					All dimensions are in millimetres unless otherwise stated		Status	
					SCALE: 1:100		DRG No:	
					SHT: A3		REV: 8	
					DO NOT SCALE FROM DRAWING			
ISS	Rev.No.	Change Details	DATE	INITIALS	PROJECT No:			

NOTES



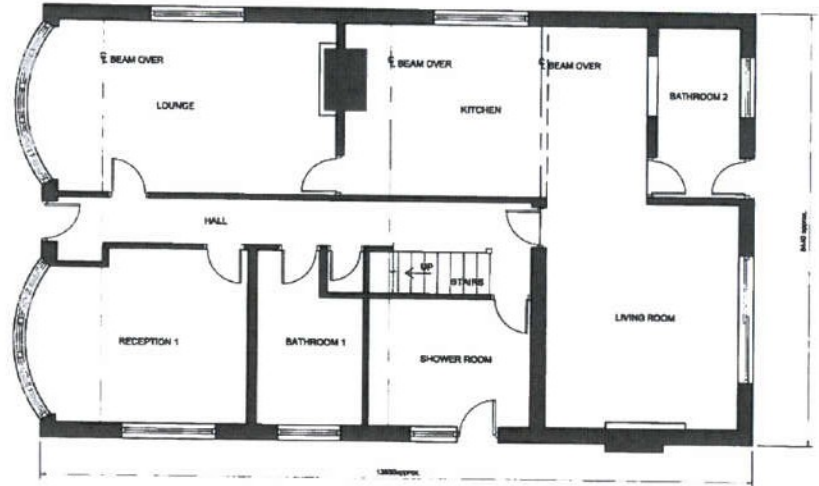
VIEW ON ARROW B

FRONT ELEVATION  
Scale 1:100

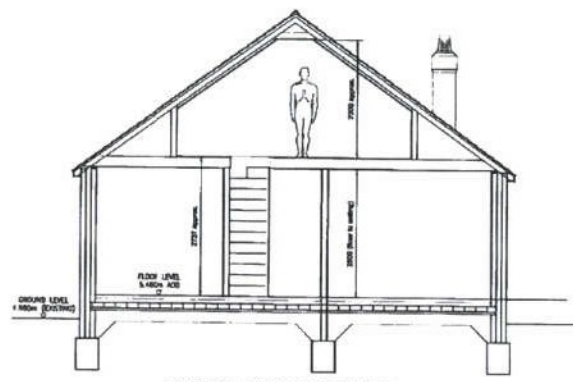
REAR ELEVATION

VIEW ON ARROW A

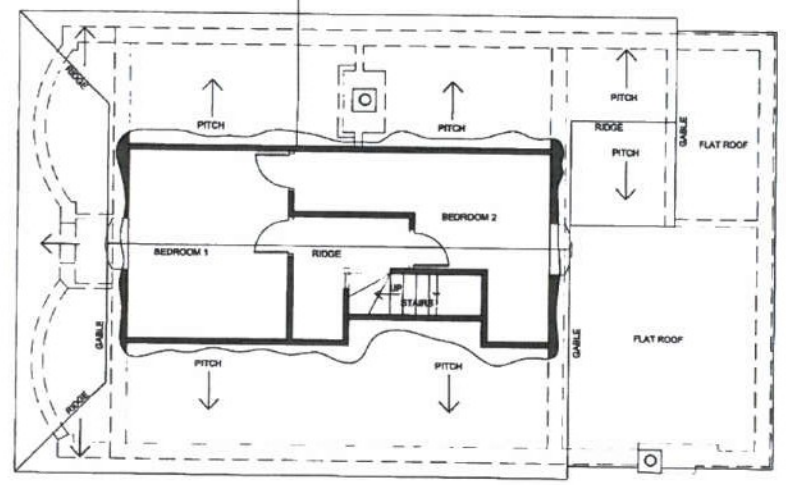
**MATERIALS:**  
 Roof: SLATE  
 Walls: INNER LEAF - BLOCKWORK  
 OUTER LEAF - RENDERED BLOCKWORK  
 Chimneys - BRICKWORK  
 Doors: UPVC (WHITE)  
 Windows: UPVC (WHITE)



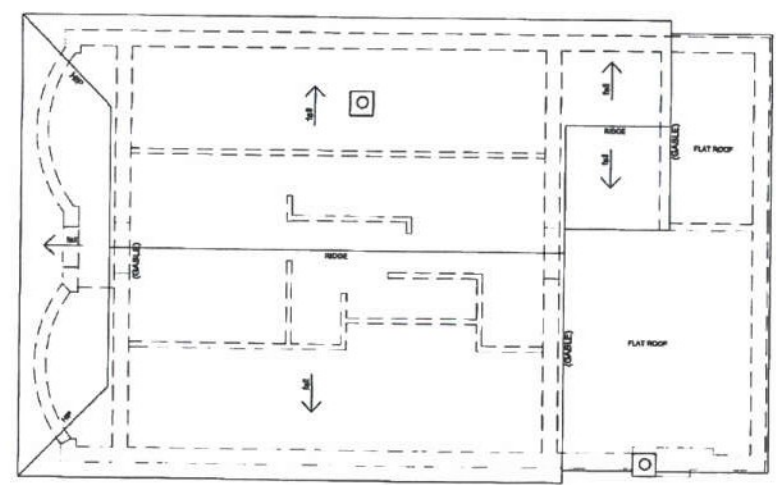
GROUND FLOOR PLAN  
Scale 1:50



TYPICAL CROSS-SECTION



FIRST FLOOR PLAN  
Scale 1:50



ROOF PLAN  
Scale 1:50

Rev	Date	Revised	By	DR
1				

Client: **T.Holding**

Project: **Hall Farm  
London Road, Rawreth  
Wickford, Essex  
SS11 8SA**

Title: **Rebuilt House following  
Extensive Fire Damage.  
Proposed Plans & Elevations**

**ELLIPTA**  
 Proposed House, 101-103 London Road,  
 Wickford, Essex, SS11 8SD  
 T: 0202 887 188  
 F: 0202 887 189  
 E: info@ellipta.co.uk

SCALE: As Noted DRAWN: ISF  
 DATE: July12 CHECK: DB

FOR COMMENT PLANNING CONSTRUCTION AS BUILT

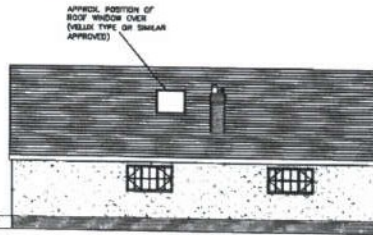
19299 / 10 / B



VIEW ON ARROW B



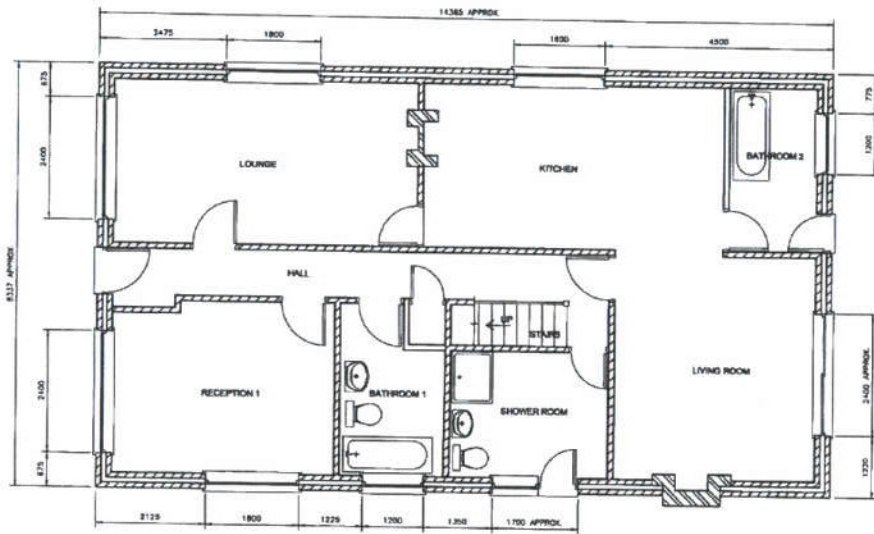
FRONT ELEVATION - PROPOSED



VIEW ON ARROW A

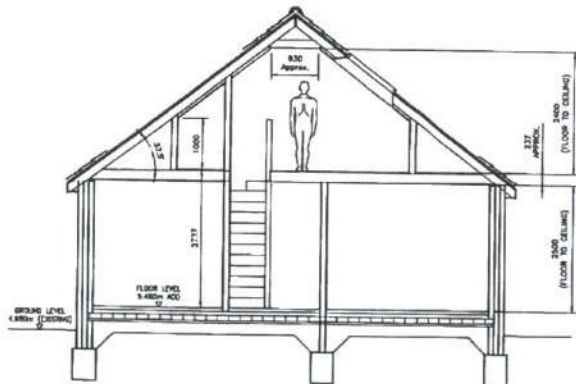


REAR ELEVATION - PROPOSED

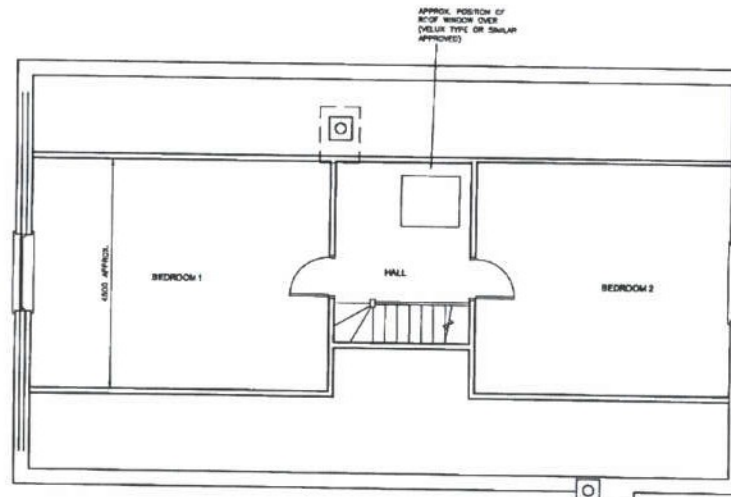


GROUND FLOOR PLAN - PROPOSED  
Scale 1:50

MATERIALS:  
 Roof: SLATE  
 Walls: INNER LEAF - BLOCKWORK  
 OUTER LEAF - RENDERED BLOCKWORK  
 Chimneys - BRICKWORK  
 Doors: U.P.V.C (WHITE)  
 Windows: U.P.V.C (WHITE)



TYPICAL SECTION



FIRST FLOOR PLAN - PROPOSED  
Scale 1:50

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NOTES

No	Date	Revised	By	On
C	20.05.13	ROOM NAMES AMENDED		
B	02.03.13	U.P.V.C. ADDED		
A	28.11.12	ELEVATIONS AMENDED		

Date: T.Holding

Project: Hall Farm  
 London Road, Rawreth  
 Wickford, Essex  
 SS11 6SA

Rebuilt House following  
 Extensive Fire Damage.  
 Proposed Plans & Elevations.

**ELLIPTA**  
 Planning & Design  
 100-102 London Road, Wickford, Essex SS11 6SA  
 Tel: 0202 507 001  
 Fax: 0202 507 002  
 Email: info@ellipta.co.uk

SCALE: As Noted  
 DATE: Nov 2012  
 DRAWN: PWR  
 CHECK: DB  
 A1

FOR COMMENT: PLANNING / CONSTRUCTION / AS BUILT

19299 / 11 / C

# APPENDIX B

## FLOOD MAPS



Environment  
Agency

Ms Jennifer Sturman Knapp Hicks & Partners  
jsturman@knapphicks.co.uk

**Our ref** CCE/2013/49656

**Date** 18 February 2013

Dear Ms Sturman

**Hall Farm, Wickford, SS11 8SA**

Thank you for your enquiry which was received on 30 January 2013 and subsequent payment of £60.00. Following internal consultations we are able to reply to your enquiry as below.

Please see the attached map showing the Flood Zones (outlines) for the area of the site.

This area falls within Flood Zone 3, Fluvial.

Flood Zone 1, (i.e. a less than 0.1% annual probability of flooding).

The Flood Zone 2 outline shows a 1 in 1000 chance of flooding at a location in any one given year (i.e., a 0.1% annual probability of flooding).

The Flood Zone 3 fluvial outline shows a 1 in 100 chance of flooding at a location in any one given year (i.e., a 1% annual probability of flooding).

The Flood Zone 3 tidal outline shows a 1 in 200 chance of flooding at a location in any one given year (i.e., a 0.5% annual probability of flooding).

The flood outlines show areas of potential flooding as a direct result of floodwater coming from a watercourse. No direct effects of surface runoff or surface flooding are included. The Flood Maps show areas at risk of flooding, and not the risk to individual properties. This is because we do not hold data on individual properties.

Examinations of our records of historic flooding show that the general area of Wickford was flooded in 1958. Please note that these records show flooding to the land and do not necessarily indicate that properties within the historic flood events were flooded internally. It is also possible that the pattern of flooding in this area has changed and that this area would now flood under different circumstances.

There are no Environment Agency maintained defences in this area.

**Eastern Area - Icen House**

Cobham Road, Ipswich, Suffolk, IP3 9JD

General Enquiries: 03708 506506 Fax: 01473 724205

*Weekday Daytime calls cost 8p plus up to 6p per minute from BT Weekend Unlimited.*

*Mobile and other providers' charges may vary*

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

Website: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Please also find attached:

- Fluvial flood levels
- Historic flood map
- Modelled level location map
- Detailed flood map

The purpose of the Flood Risk Assessment (FRA) is to demonstrate that any development will be safe and sustainable. The requirements and level of information required within a FRA depends on the development vulnerability and Flood Zone.

Further guidance on any development type within any of the Flood Zones can be found at the following website. Here you will find PDF documents detailing the information you will need to include in your Flood Risk Assessment. Just click on the relevant link for your proposal. <http://www.environment-agency.gov.uk/research/planning/93498.aspx>

If you would like to discuss the required content of the FRA in more detail, please email us at [Corporate.Services@environment-agency.gov.uk](mailto:Corporate.Services@environment-agency.gov.uk).

Please see the attached notice for details of the permitted use of the information provided.

If you have any specific requirements because of dyslexia, visual or other physical impairment etc, we will be able to supply the data in an alternative format.

If we can be of any further assistance, please do contact the Corporate Services Team at the number below.

Yours sincerely

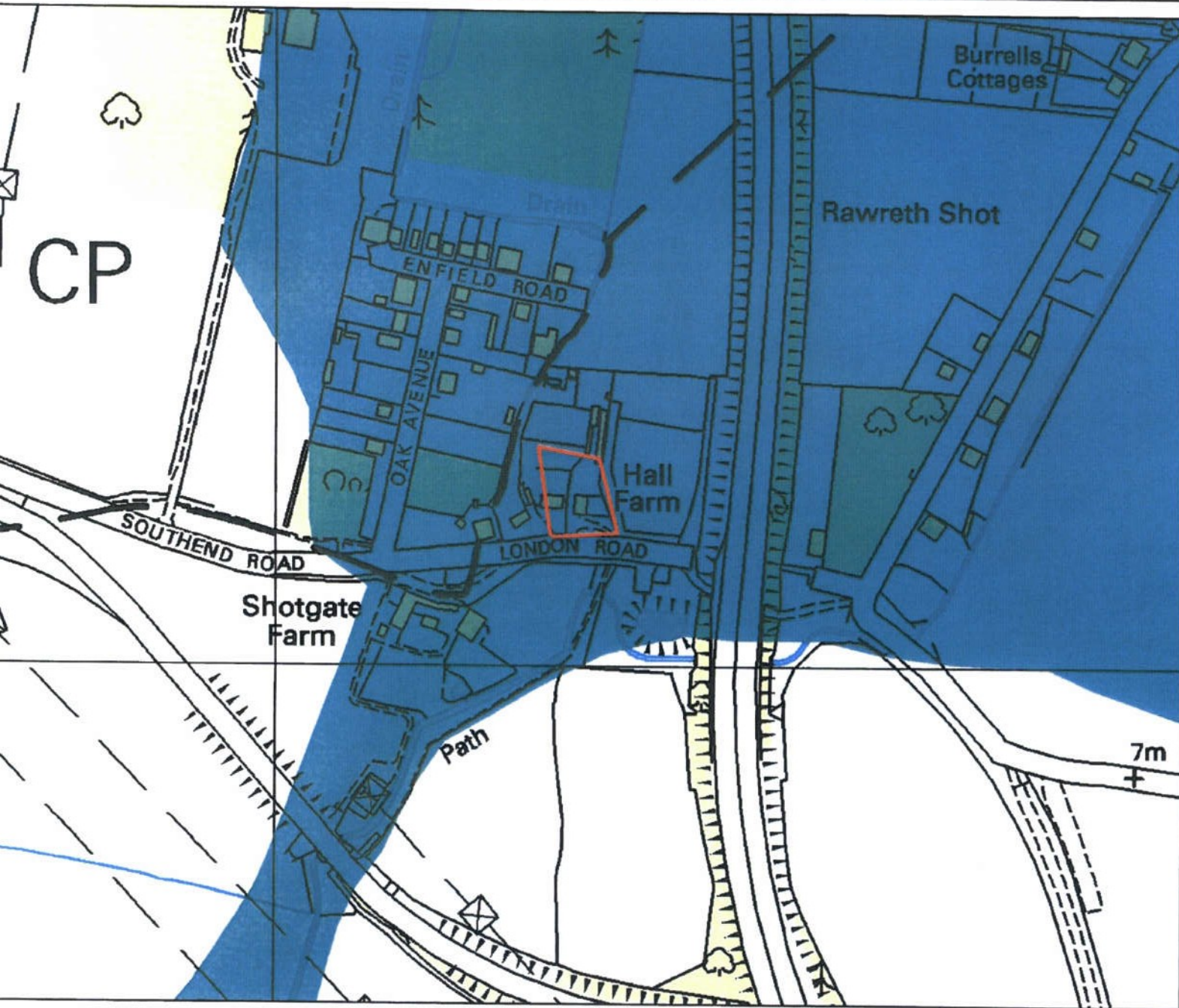


**Vicki Clemence**  
**Communications Officer**

Corporate Services Team  
01473 706720



# Historic Flood Map centred on Wickford. Created 7th February 2013.

Ref: CCE/2013/49656



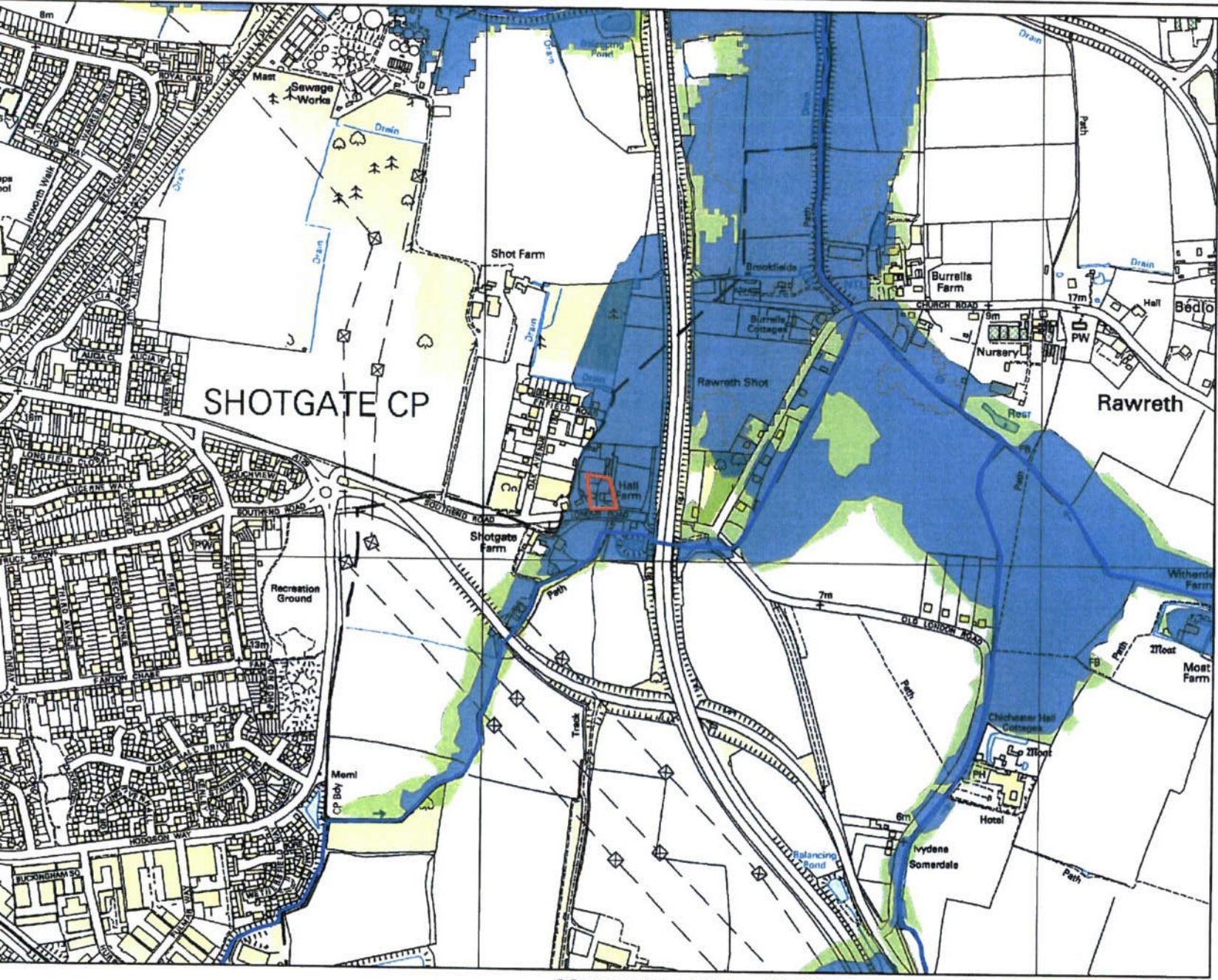
Scale 1:4,000

## Legend

-  Site outline
-  1958 Flood Outline



**Detailed Flood Map centred on Wickford - Created 7th February 2013.**  
**Ref: CCE/2013/49656**



Scale 1:10,000

**Legend**

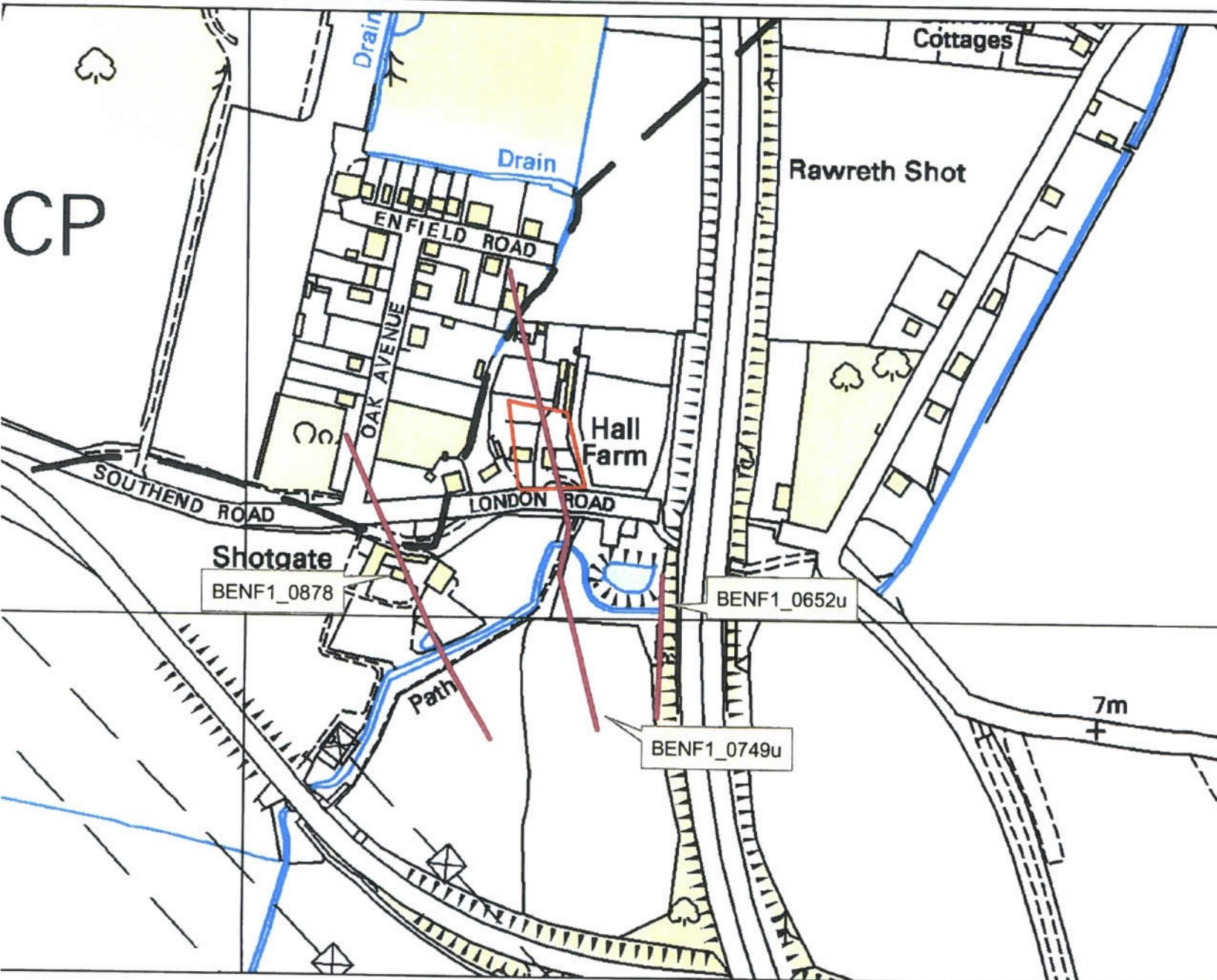
-  Site Outline
-  Main River
-  Areas Benefit Flood Defence
-  Flood Storage Area
-  Flood Map - Flood Zone 3
-  Flood Map - Flood Zone 2

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Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk



**Modelled Level Location Map centred on Wickford - Created 7th February 2013.**  
**Ref: CCE/2013/49656**



Scale 1:4,000

**Legend**

- Flood Level Cross Section
- Site Outline



Datasheet Reference CCE/2013/49656

Fluvial flood levels (mAODN)

**Undefended**

<b>Node</b>	<b>10% (1:10)</b>	<b>5% (1:20)</b>	<b>2% (1:50)</b>	<b>1.3% (1:75)</b>	<b>1% (1:100)</b>	<b>1% (1:100) +CC</b>	<b>0.1% (1:1000)</b>
BENF1_0652u	4.72	4.83	4.99	5.03	5.05	5.08	5.16
BENF1_0878	5.00	5.10	5.19	5.21	5.23	5.26	5.31
BENF1_0749u	4.87	5.00	5.10	5.13	5.14	5.16	5.22

CC = Climate Change

Source of information: South Essex Flood Risk Study (2008) by JBA Consultant for the Environment Agency

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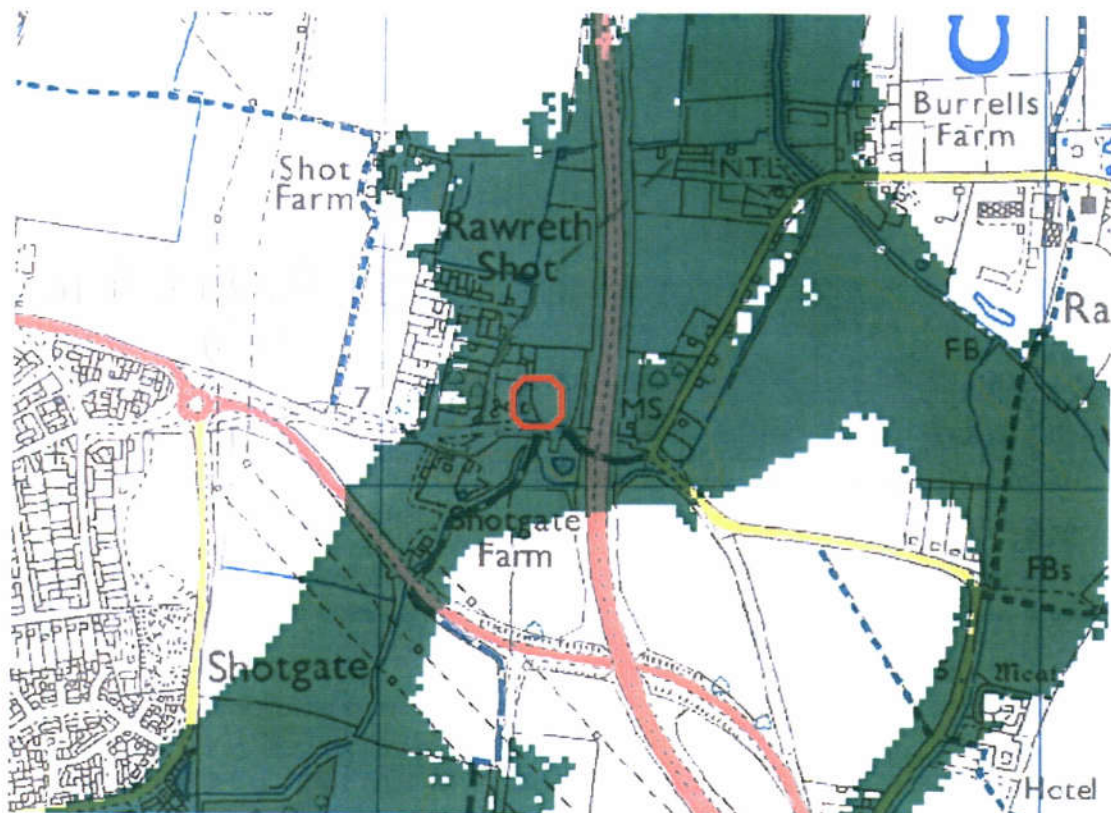
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ENVIRONMENT AGENCY FLOOD MAP FOR  
HALL FARM, LONDON ROAD, RAWRETH, SS11 8SA

FLOODING FROM RESERVOIR BREACH



■ Maximum extent of  
flooding