



**PROPOSED CHANGE OF  
USE FROM AGRICULTURAL  
BARNs TO DWELLINGS AT  
GLEBE FARM, MARSH  
ROAD, POTTER HEIGHAM,  
NORFOLK**

**FLOOD RISK ASSESSMENT**

**JANUARY 2019**

**REPORT REF: 2213/RE/01-19/02**

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## **CONTRACT**

Evans Rivers and Coastal Ltd has been commissioned by Mr R Hall to carry out a flood risk assessment for a proposed change of use from redundant agricultural barns to four dwellings, Glebe Farm, Marsh Road, Potter Heigham, Norfolk.

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The project will follow the commitment and objectives outlined in the Health and Safety Policy operated by Evans Rivers and Coastal Ltd. All employees will be equipped with suitable personal protective equipment prior to any site visits and a risk assessment will be completed and checked before any site visit. Other factors which have been taken into consideration are the wider safety of the public whilst operating on site, and the importance of safety when working close to a water source and highway. Any designs resulting from this project and directly created by Evans Rivers and Coastal Ltd will also take into account safety measures within a "designers risk assessment".

Report carried out by:

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## 1. INTRODUCTION

### 1.1 Project Scope

1.1.1 Evans Rivers and Coastal Ltd has been commissioned by Mr R Hall to carry out a flood risk assessment for a proposed change of use from redundant agricultural barns to four dwellings, Glebe Farm, Marsh Road, Potter Heigham, Norfolk.

1.1.2 It is understood that this Flood Risk Assessment will be submitted to the Planning Authority and Environment Agency (Agency, hereafter) as part of a planning application. Specifically, this assessment intends to:

- a) Consider the impacts of the 1 in 20 year, 1 in 100/200 year and 1 in 1000 year flood events (all inclusive of climate change), in accordance with NPPF;
- b) Review any literature and guidance specific to this area;
- c) Determine the extents of the aforementioned NPPF Flood Zones across the site, together with depths of floodwater and hazard;
- d) Assess the risks to people and property and propose mitigation measures accordingly;
- e) Review existing evacuation and warning procedures for the area;
- f) Carry out an appraisal of flood risk from any other sources such as groundwater as required by NPPF;
- g) Report findings and recommendations.

1.1.3 This assessment is carried out in accordance with the requirements of the National Planning Policy Framework (NPPF) dated 2018. Other documents which have been consulted include:

- DEFRA/EA document entitled *Framework and guidance for assessing and managing flood risk for new development Phase 2 (FD2320/TR2)*, 2005;
- Communities and Local Government 2007. *Improving the Flood Performance of New Buildings*. HMSO.
- DEFRA/EA document entitled *The flood risks to people methodology (FD2321/TR1)*, 2006;
- EA *Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purpose*, 2008;
- National Planning Practice Guidance – Flood Risk and Coastal Change.
- UK Government's climate change allowances guidance dated February 2016.
- Environment Agency guidance entitled *Flood risk assessments: Climate change allowances – East Anglia; Essex, Norfolk, Suffolk, Cambridgeshire and Bedfordshire*.
- JBA Consulting 2017. *North Norfolk Strategic Flood Risk Assessment*.

## 2. DATA COLLECTION

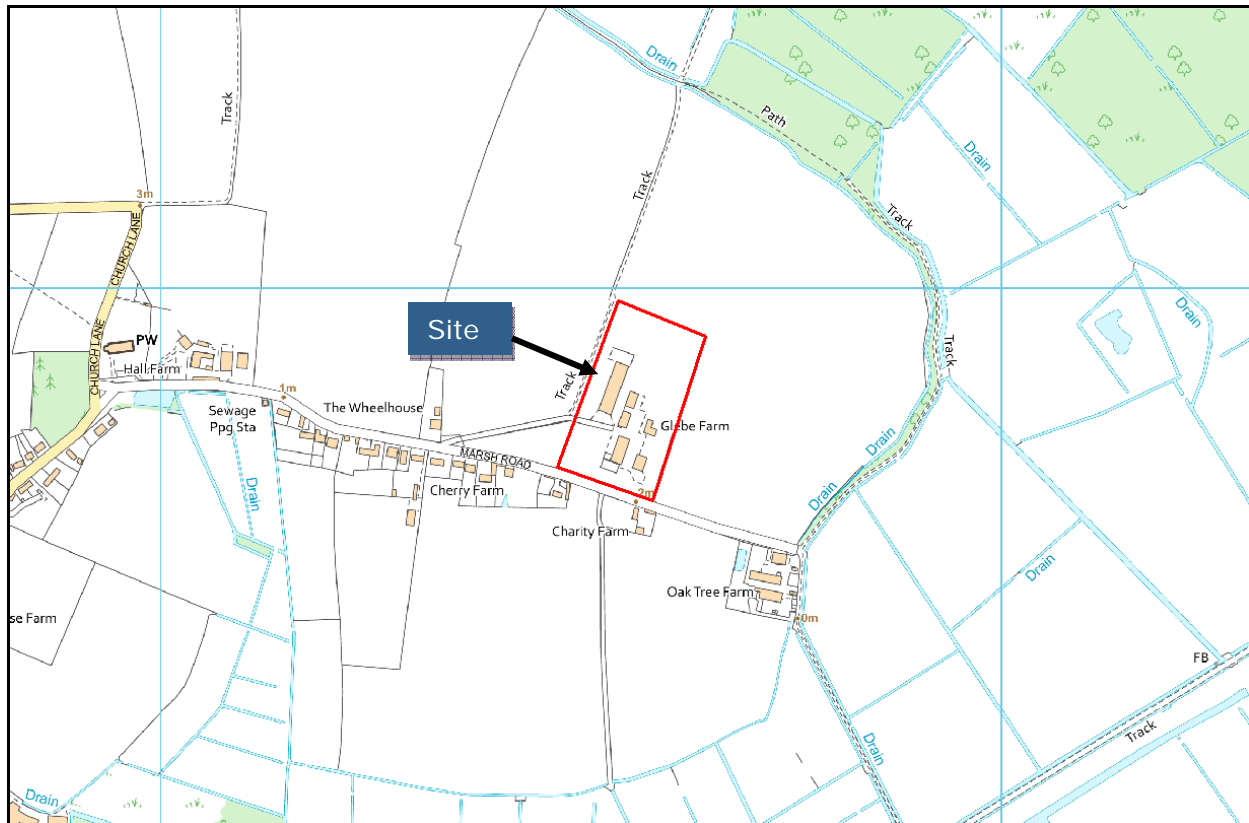
2.1 To assist with this report, the data collected included:

- Ordnance Survey 1:10,000 street view map (Evans Rivers and Coastal Ltd OS licence number 100049458).
- British Geological Survey, *Online Geology of Britain Viewer*.
- British Geological Survey, *Groundwater Susceptibility Map*.
- 1:250,000 *Soil Map of Eastern England* (Sheet 4) published by Cranfield University and Soil Survey of England and Wales 1983.
- 1:625,000 *Hydrogeological Map of England and Wales*, published in 1977 by the Institute of Geological Sciences (now the British Geological Survey).
- 1:125,000 *Hydrogeological Map of Northern East Anglia* published in 1976 by the Institute of Geological Sciences (now the British Geological Survey).
- Flood level data provided by the Agency in their response received 4<sup>th</sup> January 2019 (Appendix A) and 13<sup>th</sup> September 2017 (Appendix A).
- Filtered LIDAR data at 1m resolution.
- Topographical survey carried out by Survey Solutions (shown on Drawing Number 23343ea-01).

### 3. SITE CHARACTERISTICS

#### 3.1 Existing Site Characteristics and Location

3.1.1 The site is located at Glebe Farm, Marsh Road, Potter Heigham, Norfolk. The approximate Ordnance Survey (OS) grid reference for the site is 642560 319870 and the location of the site is shown on Figure 1.

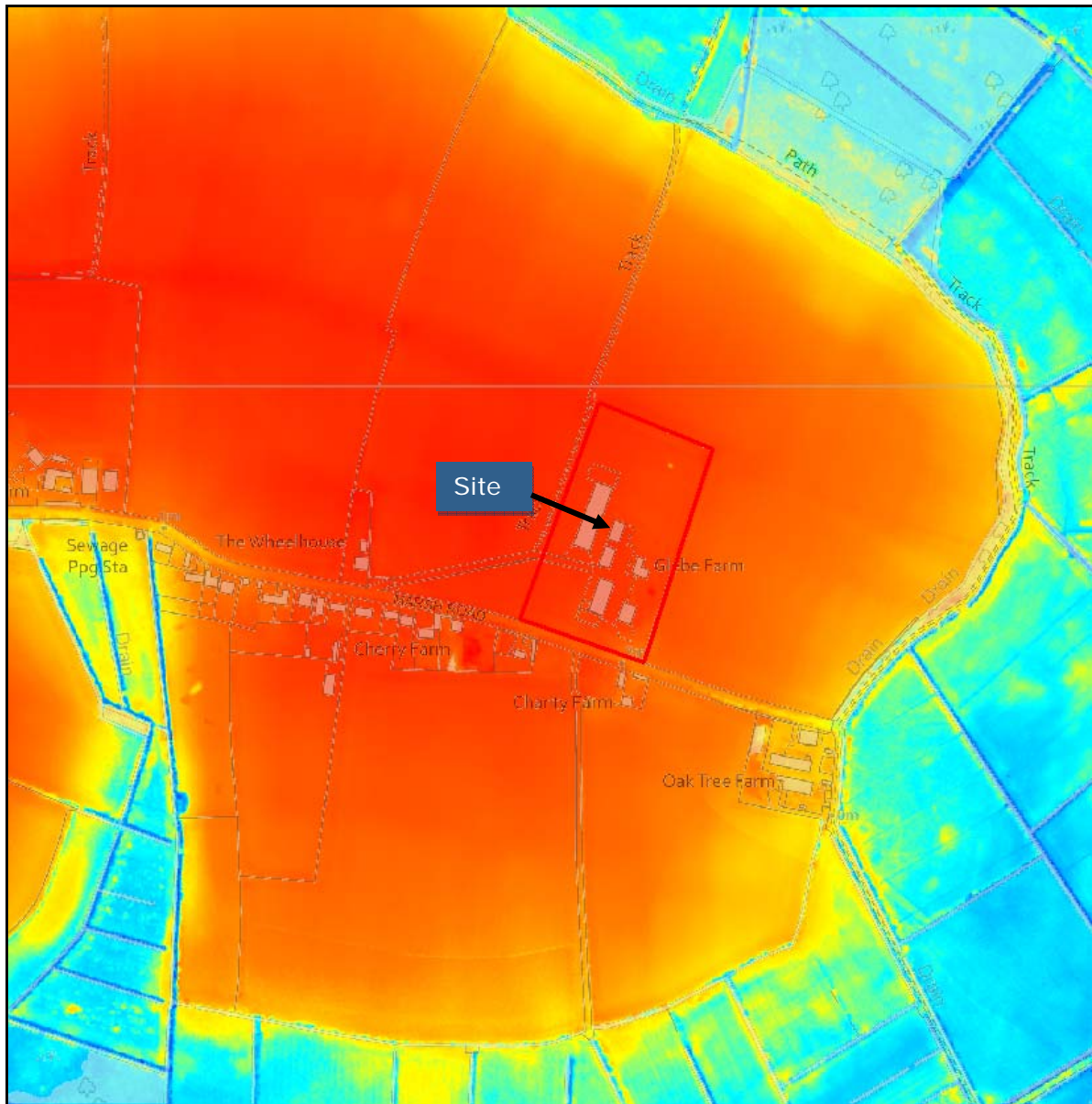


**Figure 1: Site location plan (Source: Ordnance Survey)**

3.1.2 The site comprises two existing redundant agricultural barns which forms part of the wider Glebe Farm site. The barns in question are shown on Drawing Numbers 7956-06A, 7956-07A and 7956-08 and are accessed via the existing track to Marsh Road.

3.1.3 A topographical survey has been carried out by Survey Solutions (shown on Drawing Number 23343ea-01). Ground levels are in metres above Ordnance Datum (m AOD). Filtered LIDAR data at 1m resolution has also been obtained in order to determine and illustrate the topography across the site and surrounding area (Figure 2).

3.1.4 It can be seen that ground levels across the Glebe Farm site fall in a south westerly and south easterly direction towards Marsh Road. The existing floor level of the barns is 2.80m AOD.



**Figure 2: LIDAR survey data where higher ground is denoted as orange and yellow colours and lower areas denoted by blue and green colours**

### 3.2 Site Proposals

3.2.1 It is the Client's intention to change the use of the barns to provide four dwellings as shown on Drawing Numbers 7956-06A, 7956-07A and 7956-08.

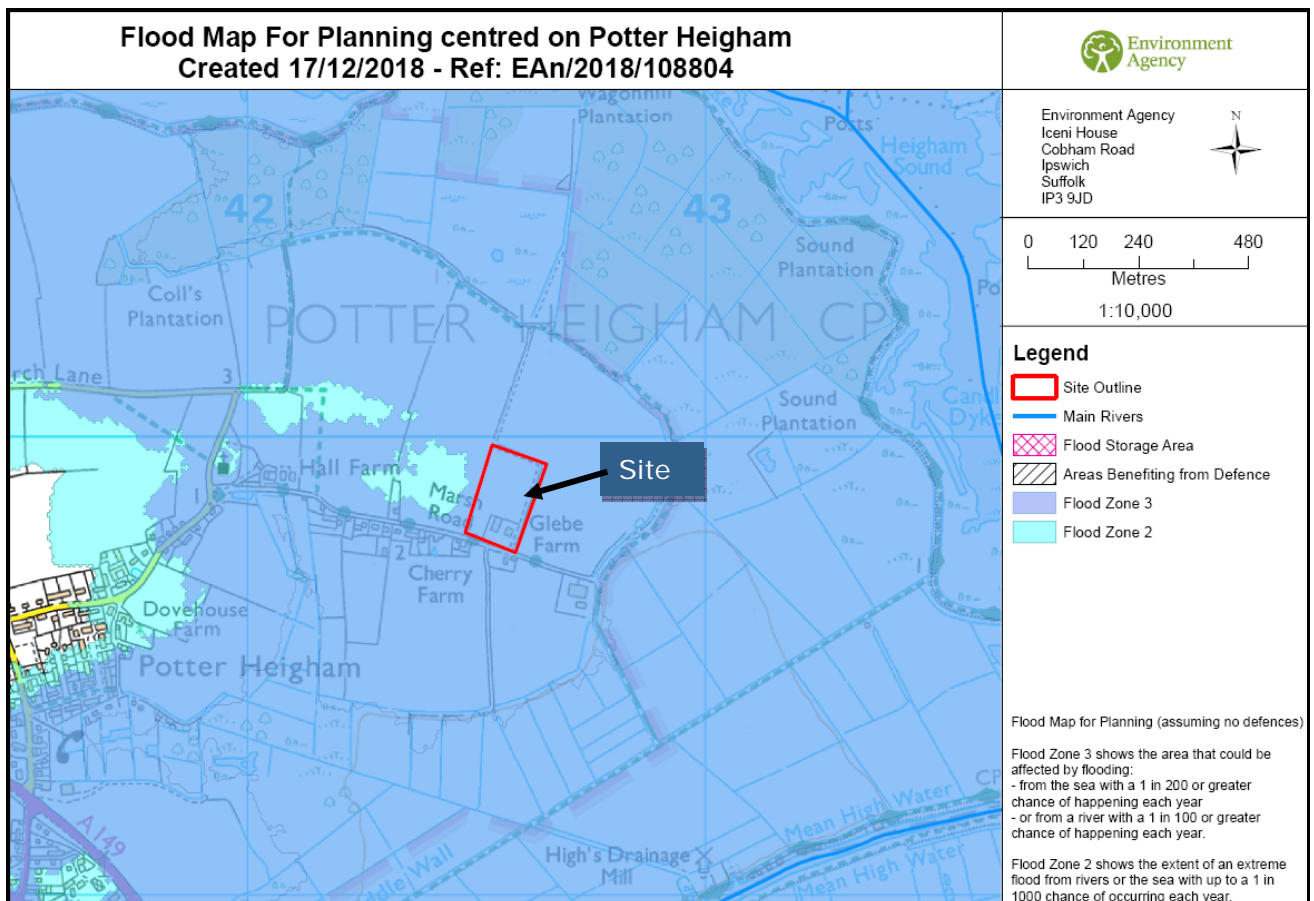
3.2.2 Paragraph 048 (ID 7-048-20140306A) of the NPPF Planning Practice Guidance states that "...change in use may involve an increase in flood risk if the vulnerability classification of the development is changed". Appropriate warning and mitigation measures outlined in this report will ensure that the risk to occupants is not increased and this assessment provides an opportunity to raise the awareness of flood risk to occupants and improve the flood resilience of the property.

3.2.3 Paragraph 33 (ID 7-033-20140306) of the NPPF Planning Practice Guidance (NPPG) states that the Sequential Test does not apply to change of use applications.

#### 4. BASELINE INFORMATION

##### 4.1 Environment Agency Flood Zone Map

- 4.1.1 The Environment Agency’s Flood Zone Map (Figure 3 and Appendix A) shows that the site is located within the NPPF defined Flood Zone 3. The updated 2017 SFRA flood map NN\_61 shows that the site is located within the NPPF defined Flood Zone 3a and Flood Zone 2.
- 4.1.2 The extent of the Flood Zone 3a ‘High Probability’ is defined as the 1 in 100 year return period fluvial event, or 1 in 200 year tidal event (or a combination of the two).
- 4.1.3 The Flood Zone 2 ‘Medium Probability’ floodplain is defined as having between a 1 in 100/200 year annual probability and 1 in 1000 year annual probability of flooding. The threshold of the Flood Zone 2 floodplain is the 1 in 1000 year extreme event.
- 4.1.4 The extent of the flood zones do not take into account the presence of any formal flood defences, or other features which also act as informal flood defences.
- 4.1.5 The site is located outside of the Broads Internal Drainage Board (IDB) area.



**Figure 3: Environment Agency Flood Zone Map (Source: Environment Agency)**



## 4.2 Flood Defences and Environment Agency Flood Levels

### Flood Defences - Coastal

- 4.2.1 After the 1953 floods new sea defences were constructed along the coastline, however the beach in front of the new sea wall was subjected to a southward longshore drift causing significant beach loss. By 1990 the pile foundation of the sea wall was subsequently exposed and vulnerable to wave attack, therefore compromising the stability of the wall.
- 4.2.2 The 14km stretch of coast from Happisburgh to Winterton has consequently seen much work to improve its defences. In 1990 the Environment Agency together with North Norfolk District Council (NNDC) implemented a 50-year sea defence strategy including proposals from consulting engineers (Halcrow) in 1991 to build offshore reefs at Sea Palling and to recharge the beach. The work was completed in early 2003. The aims of the strategy were to protect several villages including Waxham and 6,000 hectares of low-lying land from tidal inundation.
- 4.2.3 The defences now consist of a concrete wave return wall with a crest level of 5.593m AOD backed by vegetated dunes, with a crest of up to 11m AOD. The standard of protection is 1 in 1000 years. Figure 4 shows the typical arrangement of the flood defences.
- 4.2.4 This section of shoreline falls within the Kelling to Lowestoft Shoreline Management Plan (Policy Unit 6.13) adopted in 2012. The adopted defence strategy for this stretch of coast is “Hold the Existing Line”, which means “by intervention, hold the existing defence where it is”. This defence strategy is proposed for the whole length of the Eccles to Winterton Beach Road shoreline until the year 2105.



**Figure 4: Photo of the typical arrangement of the coastal defences between Happisburgh and Winterton-On-Sea**

### Flood Defences - River Thurne

4.2.5 The River Thurne and other watercourses such as Hickling Broad and Candle Dyke are embanked along most of their length. It is understood from the Agency's response (Appendix A) that the design crest level of the flood defences is 0.80m AOD.

### Environment Agency Flood Levels – Coastal

4.2.6 The coastal flood levels (without climate change) for the North Sea have been extracted from the Open Data (EA Geodata [www.data.gov.uk](http://www.data.gov.uk)). It should be noted that the updated open coast levels are not available from the Agency at the time of writing.

**Table 1: Open coast flood level data**

Location	1 in 20 year (mAOD)	1 in 200 year (mAOD)	1 in 1000 year (mAOD)
4130	2.99	3.57	4.04

4.2.7 The lifetime is assumed to be 100 years and the amount of climate change to be applied (i.e. increase in sea level) according to Table 3 of the UK Government's climate change allowances guidance dated February 2016, is detailed in Table 2.

**Table 2: Expected increases in sea level rise over the next 100 years**

Time period	Years within each time period (from 2019)	Increase per year at coast (mm)	Total increase at coast over period (mm)
1990-2025	6	4	24
2025-2055	30	8.5	255
2055-2085	30	12	360
2085-2115	34	15	510
<b>Totals</b>	<b>100</b>	<b>-</b>	<b>1149</b>

4.2.8 As climate change increments need to be considered from 2008 (the assessment date of the flood level), an additional 44mm (11 years x 4mm/year) needs to be applied to the total in Table 1. Therefore the coastal flood levels as shown in Table 1 are expected to increase by **1193mm** over the next 100 years, as a result of climate change and sea level rise. Table 3 shows the flood levels including an allowance for sea level rise.

**Table 3: Open coast flood level data including sea level rise**

Location	1 in 20 year plus climate change (mAOD)	1 in 200 year plus climate change (mAOD)	1 in 1000 year plus climate change (mAOD)
4130	4.183	4.763	5.233

### Environment Agency Flood Levels – River Thurne

4.2.9 In-channel flood levels have been provided by the Agency as part of their response received 13<sup>th</sup> September 2017 (Appendix A) for a nearby project undertaken by Evans Rivers and Coastal Ltd and are summarised in Table 4.

**Table 4: Flood level data for the Thurne**

Location	1 in 20 year (mAOD)	1 in 20 year plus climate change (mAOD)	1 in 100/200 year (mAOD)	1 in 100/200 year plus climate change (mAOD)	1 in 1000 year (mAOD)	1 in 1000 year plus climate change (mAOD)
Tidal at node T6800	0.71	1.40	0.77	1.41	0.81	1.41
Fluvial at node T6800	0.79	1.51	0.84	1.52	0.87	1.54

4.2.10 It is understood that the fluvial climate change 1 in 100 year event provided by the Agency should be updated to reflect the UK Government’s climate change allowances guidance dated February 2016 and the guidance document entitled *Flood risk assessments: Climate change allowances – East Anglia; Essex, Norfolk, Suffolk, Cambridgeshire and Bedfordshire*.

4.2.11 In line with the Agency’s recently published guidance entitled *Flood risk assessments: Climate change allowances – East Anglia; Essex, Norfolk, Suffolk, Cambridgeshire and Bedfordshire*, a basic approach can be adopted for this site whereby the current climate change 1 in 1000 year flood level for the Broads can be used.

4.2.12 Therefore, Table 4 indicates that this flood level is **1.54m AOD**.

### 4.3 Flood Warning and Emergency Planning

4.3.1 The site is located within Environment Agency Flood Warning area 054FWTBT1E – Outlying villages including Acle, Damgate, Billockby, Bastwick, Martham, Ludham, Hickling, Dilham, and Honing on the Bure, Ant and Thurne.

4.3.2 The Environment Agency can issue each level of warning when necessary at least 12 hours prior to the next high tide or critical estimated peak surge tide (based on a model run which is reviewed every 6 hours).

4.3.3 Sites at risk of fluvial flooding could have a minimum of 2 hours warning before any of the levels of flood warning is issued (the Agency’s warning scheme only applies to areas at risk of flooding from main rivers and not IDB controlled drains).

4.3.4 Flood Alerts, Flood Warnings and Severe Flood Warnings are issued to residents and businesses within flood risk areas by the Agency’s *Floodline Warnings Direct* (FWD) service. This system is managed by the Environment Agency and dials out a message to the recipient when a particular category of flood warning is being advised. The message is conveyed by a constant ringing of the telephone or can alternatively be communicated to mobile phones and computers. The system functions at all times, issuing flood warnings and alerts in conjunction with announcements on radio and other media. Owners and occupiers of dwellings or businesses thought to be at risk can sign up to the scheme. **The owners are encouraged to confirm details with the Agency and to sign up for these warnings.**

4.3.5 The various flood warning codes can be seen on Figure 5.

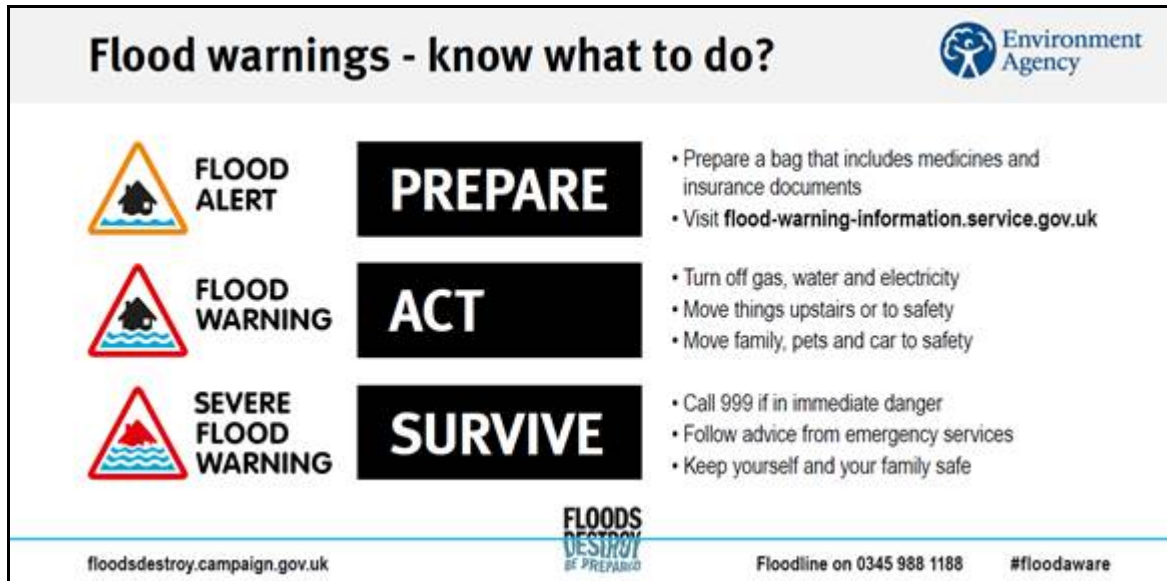


Figure 5: Flood warning codes (Source: Environment Agency)

4.3.6 It is understood that in the event of flooding, evacuation is managed by a multi-agency team in conjunction with the Police. The multi-agency team provides suitable premises for shelter, first aid, refreshments and possible transportation with consideration given to the elderly and vulnerable groups. It is essential that occupants produce robust Emergency Flood Plans to avoid putting themselves or emergency services at risk and that they do not rely solely on emergency services during the event.

## 5. FLUVIAL AND TIDAL FLOOD RISK

### 5.1 Fluvial/Tidal Actual Flood Risk

- 5.1.1 A comparison between the in-channel flood levels in Table 4 and the flood defence level has been carried out and is provided in Table 5. It can be seen that during present day flood events there would be negligible overtopping of the defences. However, during climate change events there would be overtopping of the flood defences.
- 5.1.2 Despite this, as the site is set above all fluvial and tidal flood levels it is unlikely that the site would be inundated during these events and hence the 'actual risk' to the site is low.

**Table 5: In-channel flood levels and height above defences**

Location	1 in 20 year	1 in 20 year plus climate change	1 in 100/200 year	1 in 100/200 year plus climate change	1 in 1000 year	1 in 1000 year plus climate change
Tidal at node T6800	0.71m AOD	1.40m AOD	0.77m AOD	1.41m AOD	0.81m AOD	1.41m AOD
Height of water above the defence level set at 0.80m AOD.	0m	0.60m	0m	0.61m	0.01m	0.61m
Fluvial at node T6800	0.79m AOD	1.51m AOD	0.84m AOD	1.54m AOD (updated)	0.87m AOD	1.54m AOD
Height of water above the defence level set at 0.80m AOD.	0m	0.71m	0.04m	0.74m	0.07m	0.74m

### 5.2 Coastal Actual Flood Risk

- 5.2.1 The coastal defences consist of a concrete wave return wall, backed by vegetated dunes with a crest of up to 11m AOD. When comparing the open coast flood levels shown in Table 3 to the flood defence level, it can be seen that there will be no overtopping during all modelled return period events.
- 5.2.2 Consequently, there is a low 'actual' risk of flooding to the site as the coastal surge levels are below the crest of the defences.

### 5.3 Residual Risk

#### River Thurne

- 5.3.1 In order to adopt a worst-case scenario it is assumed that the in-channel River Thurne levels would be reached across the floodplain if a breach occurred.

5.3.2 As the site is set above all fluvial and tidal flood levels it is unlikely that the site would be inundated during these events and hence the ‘residual risk’ to the site is low.

**Coastal**

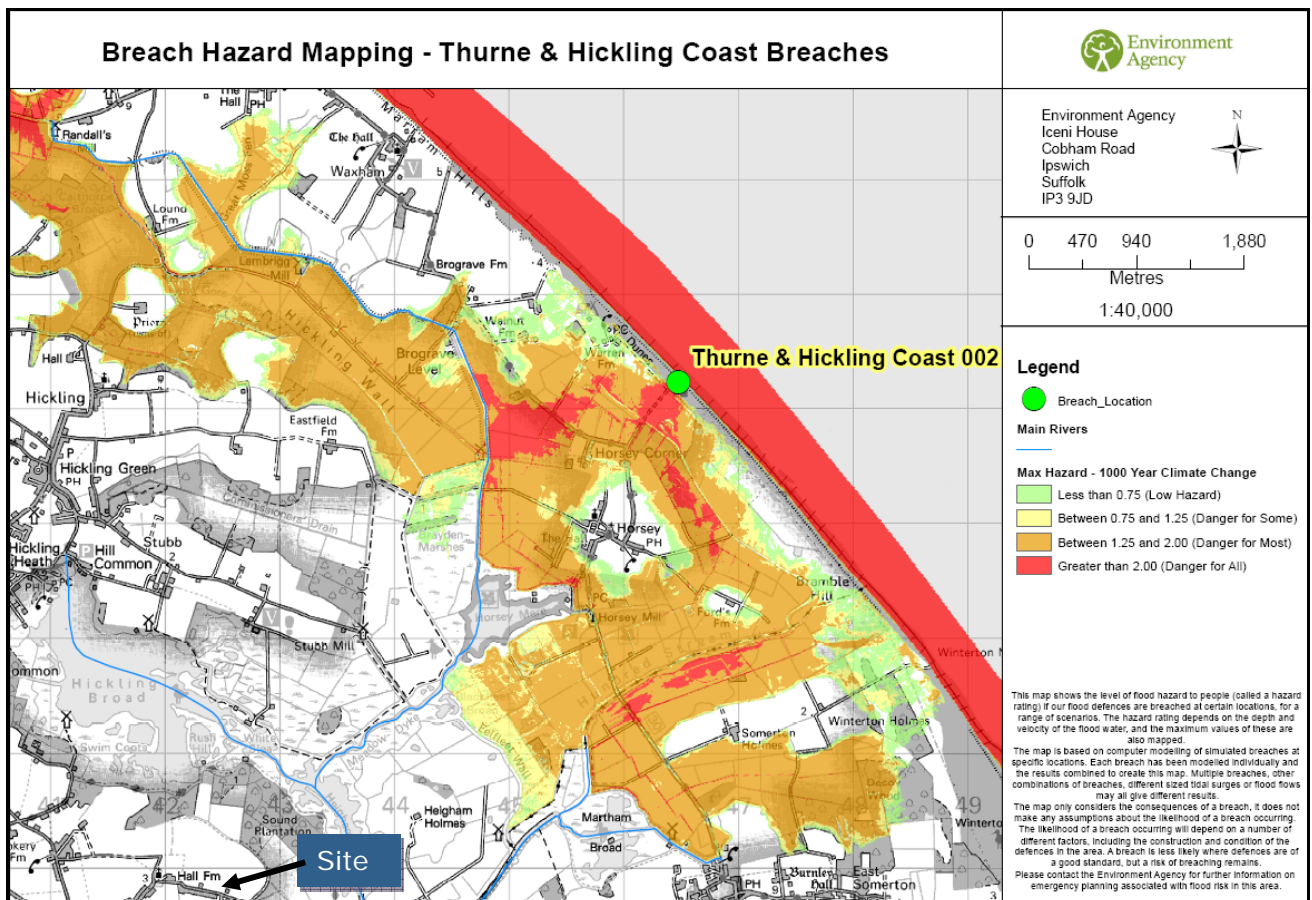
5.3.3 The Agency has provided “undefended” levels across the site as part of their response received 4<sup>th</sup> January 2019 (Appendix A). The flood levels across the barn can be seen in Table 6.

**Table 6: Undefended Flood level data at the site**

Location	1 in 20 year (mAOD)	1 in 20 year plus climate change (mAOD)	1 in 200 year (mAOD)	1 in 200 year plus climate change (mAOD)	1 in 1000 year (mAOD)	1 in 1000 year plus climate change (mAOD)
Barns	N/A	4.01	2.93	4.62	3.80	5.06

5.3.4 The floor level of the barns is 2.80m AOD and hence above the present day 1 in 20 year event.

5.3.5 Moreover, the latest breach analysis of the coastal defences carried out as part of the Agency’s modelling has been provided as part of the Agency’s response (Figure 6). The results show that during the present and climate change 1 in 20 year event and 1 in 1000 year event, the site and Marsh Road would not be inundated and hence the coastal ‘residual risk’ to the site is low.



**Figure 6: Flood extent and hazard from a breach in the defences during climate change 1 in 1000 year event (Source: Environment Agency Breach Modelling)**

## 6. FLOOD RISK MITIGATION AND EVACUATION

### 6.1 Reducing Exposure to the Hazard

- 6.1.1 In order to assess and reduce the exposure to the hazard and the vulnerability to the hazard after the site has been developed, the guidance outlined in the DCLG/DEFRA/EA document entitled *Flood Risk Assessment Guidance for New Development Phase 2; Flood Risks to People, Phase 2; Improving the Flood Performance of New Buildings* has been consulted.
- 6.1.2 Paragraph 060 (ID 7-060-20140306) of the NPPF Planning Practice Guidance states that the first preference is to avoid flood risk by raising floor levels above the design flood level.
- 6.1.3 As discussed in Chapter 5, the site is outside of the flood extent and the hazard to people would be *Very low* thus complying with the NPPG.



### 6.2 Reducing Vulnerability to the Hazard

- 6.2.1 Although people will remain safe across the site, people at the site are unlikely to have detailed knowledge of the dynamics of the flood event and the storminess of the event could result in people panicking or becoming anxious, particularly if they observe flooding across other areas.
- 6.2.2 The Agency aims to provide up to 12 hours notice before the issue of a *Flood Warning* for tidal events and 2 hours for fluvial events. People at the site will need to make a judgment themselves with regards to the flood hazard if evacuation is attempted and not solely rely on the emergency services.
- 6.2.3 It is recommended that the occupants liaise with the Agency in order to register with the Agency's Flood Warnings Direct service and ensure that they are aware of the flood risk so that they have the option to escape/evacuate upon receipt of a *Flood Warning* or upon the instruction of the emergency services.
- 6.2.4 The occupants should develop a *Family Flood Plan*. Further guidance is offered in the Environment Agency's guidance document entitled *What to do before, during and after a flood*. The *Family Flood Plan* should consider, for example, information about vital medication needed and a *Flood Kit*.
- 6.2.5 A *Flood Kit* is a useful precautionary measure especially if evacuation from the site is prolonged. The kit should be stored in an accessible location to ensure that it is not affected by floodwater. The contents should also be checked every 6 months and items replaced if necessary.
- 6.2.6 It may be sensible to compile two *Flood Kit's* to suit each eventuality. For example, a smaller kit could be compiled which would allow the occupants to carry it during evacuation. A larger kit could also be compiled which included additional food and beverage items in case of ongoing refuge within the property. Both kits should contain the necessary items as suggested below.


1. Important documents
2. Torch and batteries
3. Mobile phone (fully charged)
4. First-aid kit
5. Wind-up radio

6. Important telephone numbers
7. Bottled water
8. Non-perishable food provisions
9. Rubber Gloves and wellington boots
10. Medication or information relating to medication and its location
11. Blankets, warm clothes
12. Essential toiletries
13. Camera to record any damage
14. Emergency cash

**Table 7: Flood Event Action Plan**

Environment Agency Flood Warning Code	What to do!	Evacuate?
<p><b>Flood Alert</b> (Flooding Possible. Be aware/prepared! Watch Out).</p> 	<ul style="list-style-type: none"> <li>• Monitor flood risk through media and Floodline Warnings Direct.</li> <li>• Locate family members and inform them of risk. If away from the site make assessment on risk if considering returning to site (i.e. how long it will take to return etc).</li> <li>• Check flood kit, check occupants, check pets – BE PREPARED in case the situation gets worse.</li> </ul>	<p>Not necessary.</p> <p>Occupants can evacuate themselves if they feel unsafe providing that they make a judgement in relation to any external flood hazard. Take flood kit, occupants and pets with you.</p>
<p><b>Flood Warning</b> (Flooding of homes, businesses and main roads is expected. Act now!).</p> 	<ul style="list-style-type: none"> <li>• Maintain communication through Floodline Warnings Direct and the media.</li> <li>• Begin to implement Flood Plan.</li> <li>• Consider advice given from emergency services/Environment Agency.</li> <li>• Check insurance, Check flood kit, Check Pets.</li> <li>• Check alternative accommodation arrangements.</li> </ul>	<p>Occupants can evacuate themselves if they feel unsafe providing that they make a judgement in relation to any external flood hazard. Take flood kit, occupants and pets with you.</p> <p>People who do not evacuate should reside within the building.</p> <p>No formal evacuation or rest centre set-up will be undertaken at this warning level, however, if flooding is experienced across the area emergency services will rescue people.</p>



<p><b>Severe Flood Warning</b> (Severe flooding is expected. Imminent danger to life and property. Act now!).</p> 	<ul style="list-style-type: none"> <li>• Leave site immediately if not already done so.</li> <li>• Take flood kit, occupants and pets with you.</li> <li>• Follow advice given by Emergency Services and Council.</li> </ul>	<p>Leave site according to advice given by Emergency Services and Council. Take flood kit, occupants and pets with you.</p> <p>If evacuation cannot be undertaken, people should reside within the building with <i>flood kit</i> and maintain communication with the emergency services.</p>
<p><b>Warnings no longer in force</b> (No further flooding is expected in the area. Be careful).</p>	<ul style="list-style-type: none"> <li>• Return to site upon instruction from emergency services and assess any damage.</li> <li>• Contact insurance company depending on damage caused.</li> <li>• Beware of flood debris.</li> <li>• Do not touch sources of electricity.</li> <li>• Arrange for utilities to reconnect services.</li> <li>• Do not dispose of damaged property until your insurance company has agreed.</li> </ul>	<p>Not applicable, however site may be uninhabitable.</p> <p>Return to site upon instruction from emergency services as floodwater may not have receded.</p>

### 6.3 Vulnerable Groups

- 6.3.1 The occupants at the site may include vulnerable groups such as elderly people, those with sensory or physical disabilities, minority ethnic groups, or the infirm. Priority will need to be given to these people during the flood event.
- 6.3.2 Vulnerable groups should be identified by the occupants and priority should be given to these groups during the event.

### 6.4 Safe Access/Egress

#### Overtopping Scenario

- 6.4.1 When considering overtopping of the defences only (i.e. no breaching), there will be a very low hazard across the site. Safe access/egress will also be available at all times.

#### Breach Scenario

- 6.4.2 When considering breaching of the defences safe access/egress would be available from the site via Marsh Road.
- 6.4.3 A flood response plan will be compiled to ensure that the occupants are aware of the flood risk and procedures to take before, during and after a flood.

- 6.4.4 Research provided in paragraph 6.13 of the superseded 2009 DCLG document entitled *PPS 25 Development and Flood Risk Practice Guide* states that cars can be unstable in depths greater than 300mm. The DEFRA/EA document FD2321/TR1 and FD2321/TR2 suggests that fire engines become unstable in 0.9m of still water and this value reduces as the velocity increases.
- 6.4.5 People will be able to access (or leave) the site by vehicle via Marsh Road during the peak of the event, and emergency services will be able to access the site in these circumstances.

## **6.5 Insurance**

- 6.5.1 The Association of British Insurers (ABI) published a guidance document in 2012 entitled *Guidance on Insurance and Planning in Flood Risk Areas for Local Planning Authorities in England*.
- 6.5.2 The ABI guidance sets out the requirements of the insurance industry when considering flood risk and insurability of the property. The guidance suggests that properties should be protected for flood events up to the climate change 1 in 100 year event in order to access insurance at a competitive price.
- 6.5.3 The guidance also states that insurers would of course prefer to cover properties which are not at risk of flooding, however, for those properties which are at risk of flooding insurers would prefer that the properties are raised above the flood level, over resistance measures which prevent floodwater from entering the building, or resilience measures which allows floodwater to enter the building.
- 6.5.4 The site is set outside of the flood extents, therefore, the ABI's requirement of protection during a climate change 1 in 100 year event will be exceeded and there will be a good chance of the property being insured at a competitive rate.

## **7. OTHER SOURCES OF FLOODING**

### **7.1 Groundwater Flooding**

- 7.1.1 In order to assess the potential for groundwater flooding during higher return period rainfall events, the Jacobs/DEFRA report entitled *Strategy for Flood and Coastal Erosion Risk Management: Groundwater Flooding Scoping Study*, published in May 2004, was consulted, together with the guidance offered within the document entitled *Groundwater flooding records collation, monitoring and risk assessment (ref HA5)*, commissioned by DEFRA and carried out by Jacobs in 2006.

#### **Soil and Geology at the Site**

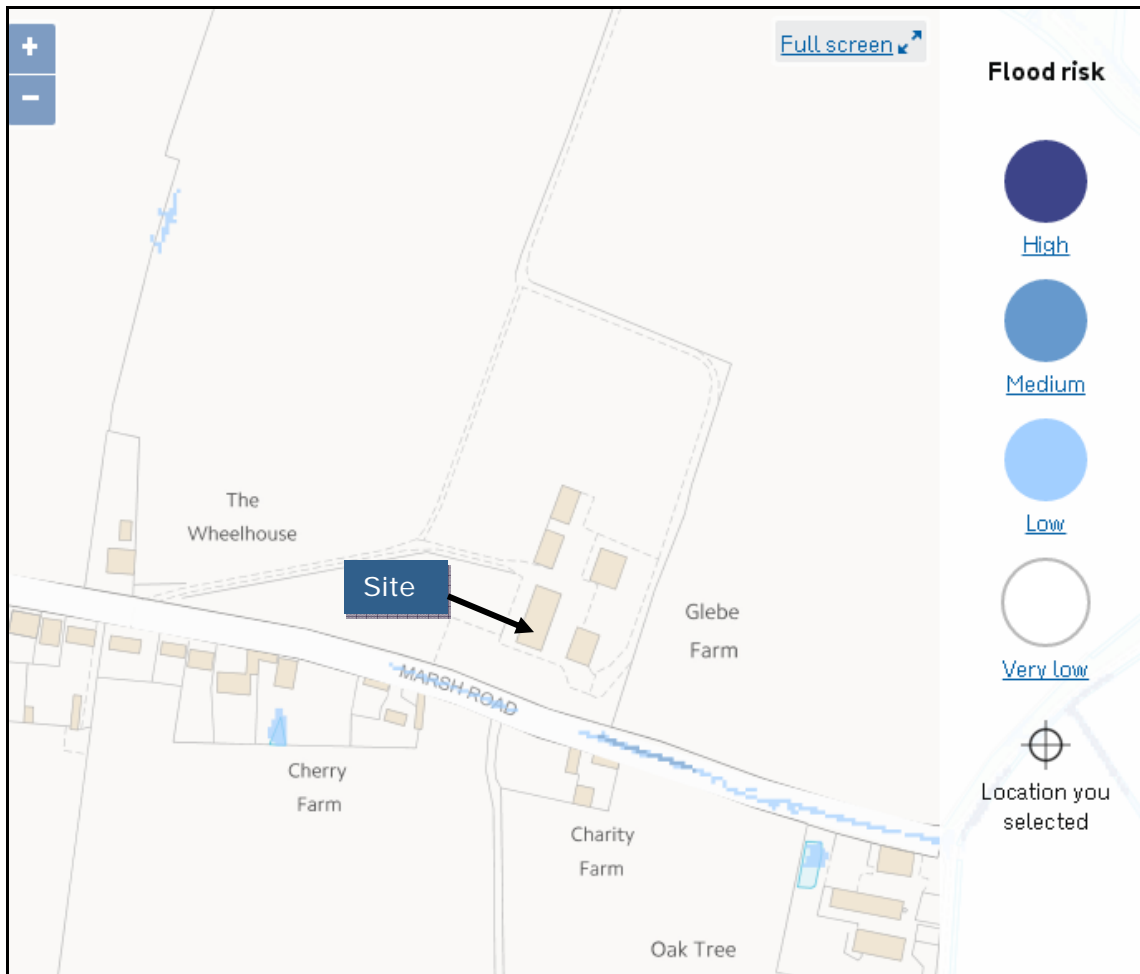
- 7.1.2 It can be seen from the various soil and hydrogeological data, listed in Section 2, that the soils beneath the site comprise clay deposits overlying sand and gravel.

#### **Groundwater Flooding Potential at the Site**

- 7.1.3 Reference to the *Hydrogeological Map Northern East Anglia* indicates that the water table associated with the Crag deposits is likely to be set at approximately 0m AOD. Therefore, groundwater is likely to be present at a depth of 2.80m.
- 7.1.4 There have been no recorded groundwater flood events across the area between 2000 and 2003, as indicated by the Jacobs study. Figure NN\_61 of the updated 2017 SFRA and the BGS Groundwater Flooding Susceptibility Map indicates that there is "Limited Potential for Groundwater Flooding".
- 7.1.5 Therefore the evidence suggests an overall low groundwater flooding risk.

### **7.2 Surface Water Flooding and Sewer Flooding**

- 7.2.1 Surface water and sewer flooding across urban areas is often a result of high intensity storm events which exceed the capacity of the sewers thus causing them to surcharge and flood. Poorly maintained sewer networks and blockages can also exacerbate the potential for sewer flooding.
- 7.2.2 The Agency's Surface Water Flooding Map (Figure 7) indicates that there is a very low surface water flooding risk across the site (i.e. less than 1 in 1000 year chance). The updated 2017 SFRA flood map NN\_61 shows a very low risk during the climate change 1 in 100 year event.



**Figure 7: Environment Agency Surface Water Flooding Map (Source: Environment Agency)**

### 7.3 Reservoirs, Canals And Other Artificial Sources

7.3.1 The failure of man-made infrastructure such as flood defences and other structures can result in unexpected flooding. Flooding from artificial sources such as reservoirs, canals and lakes can occur suddenly and without warning, leading to high depths and velocities of flood water which pose a safety risk to people and property.

7.3.2 The Environment Agency's "Risk of flooding from reservoirs" map suggests that the site is not at risk from reservoirs or other artificial sources.

## 8. CONCLUSIONS

- The site is located within Flood Zone 3a.
- The 'actual risk' of flooding from the River Thurne is low. The 'actual risk' of flooding from the open coast is also low.
- There is a low "residual risk" of flooding from a breach in the coastal defences and from a breach in the River Thurne defences.
- As a precaution a warning and evacuation strategy has been developed within this assessment. It is proposed that the occupants register with the *Agency's Flood Warnings Direct* and prepare a *Family Flood Plan*.
- Safe (dry) refuge at the site is available during the flood event.
- Safe access/egress can be achieved via Marsh Road.
- It is considered that there is a low risk of groundwater flooding at the site from underlying deposits and a very low risk of surface water flooding and artificial sources.

## 9. BIBLIOGRAPHY

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## **APPENDIX A – CORRESPONDENCE**



## Rupert Evans

---

**From:** Enquiries\_EastAnglia [Enquiries\_EastAnglia@environment-agency.gov.uk]  
**Sent:** 04 January 2019 09:13  
**To:** 'rupert.evans@evansriversandcoastal.co.uk'  
**Subject:** FW: EAN/2018/108804 Glebe Farm, Marsh Road, Potter Heigham  
**Attachments:** 108804 2019 01 04 Response.pdf; 108804 P4 Combined.pdf

Apologies I missed the following defence information off my original email -

This property is protected by flood defences located on the banks of Hickling Broad, Candle Dyke and the River Thurne which have a general minimum crest level of 0.8m AOD.

Victoria Clemence  
Customers & Engagement Officer, Customers & Engagement Team, East Anglia Area  
**Environment Agency** | Bromholme Lane, Brampton, Huntingdon, Cambridgeshire, PE28 4NE  
**Environment Agency** | Icen House, Cobham Road, Ipswich IP3 9JD

[enquiries\\_eastanglia@environment-agency.gov.uk](mailto:enquiries_eastanglia@environment-agency.gov.uk)  
External: 0203 02 55472



---

**From:** Enquiries\_EastAnglia  
**Sent:** 04 January 2019 09:11  
**To:** 'rupert.evans@evansriversandcoastal.co.uk' <[rupert.evans@evansriversandcoastal.co.uk](mailto:rupert.evans@evansriversandcoastal.co.uk)>  
**Subject:** EAN/2018/108804 Glebe Farm, Marsh Road, Potter Heigham

Dear Rupert

Please find attached response as requested.

Kind regards

Victoria Clemence  
Customers & Engagement Officer, Customers & Engagement Team, East Anglia Area  
**Environment Agency** | Bromholme Lane, Brampton, Huntingdon, Cambridgeshire, PE28 4NE  
**Environment Agency** | Icen House, Cobham Road, Ipswich IP3 9JD

[enquiries\\_eastanglia@environment-agency.gov.uk](mailto:enquiries_eastanglia@environment-agency.gov.uk)  
External: 0203 02 55472

**Our ref** EAn/2018/108804

**Date** 04 January 2019

Dear Mr Evans

**Enquiry regarding Product 4 for Glebe Farm, Marsh Road, Potter Heigham, NR29 5LN**

Thank you for your enquiry which was received on

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

The information we hold and a copy of the Flood Risk Assessment (FRA) advisory note is attached to my email.

Name	Product 4
Description	Detailed Flood Risk Assessment Map for Glebe Farm, Marsh Road, Potter Heigham, NR29 5LN
Licence	<a href="#">Open Government Licence</a>
Information Warnings	None
Information Warning - OS background mapping	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.</i>

**Coastal Modelling**

Our New Coastal Hydraulic Modelling 2018 is now available for external practice. Please be advised, the flood zones derived from this model will not show on our external website until our next publication date of Thursday 31 January 2019.

You may be aware that some Local Planning Authorities have updated their Strategic Flood Risk Assessments (SFRA's) using data from this modelling study. As SFRA's are not

**East Anglia Area**

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD  
 Bampton Office, Bromholme Lane, Bampton, Huntingdon, PE28 4NE  
 General Enquiries: 03708 506506  
 Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
 Website: <https://www.gov.uk/government/organisations/environment-agency>

updated regularly we agreed that they could use draft outputs as we wanted to ensure that the SFRA's were not out of date as soon as they were published.

### **Data Available Online**

Many of our flood datasets are available online:

- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)

### **What's In Your BackYard (WIYBY) is no longer available**

Most of the data is still available via other sharing services such as [DATA.GOV.UK](#), [MAGIC map](#) and new [GOV.UK digital services](#). Where the datasets are no longer available as maps, you will be able to download and use within specialist applications.

To find out all the services the Environment Agency have available, please click [here](#).

For any other enquiries please send your request to us at:

[Enquiries\\_EastAnglia@environment-agency.gov.uk](mailto:Enquiries_EastAnglia@environment-agency.gov.uk).

### Additional information

Please be aware that we now charge for planning advice provided to developers, agents and landowners. If you would like advice to inform a future planning application for this site then please complete our <https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion> and email it to our Sustainable Places team at: [planning.ipswich@environment-agency.gov.uk](mailto:planning.ipswich@environment-agency.gov.uk). They will initially provide you with a free response identifying the following:

- the environmental constraints affecting the proposal;
- the environmental issues raised by the proposal;
- the information we need for the subsequent planning application to address the issues identified and demonstrate an acceptable development;
- any required environmental permits.

If you require any further information from them (for example, a meeting or the detailed review of a technical document) they will need to set up a charging agreement. Further information can be found on our [website](#).

Please note we have published revised climate change allowances, which are available online. These new allowances will need to be reflected in your Flood Risk Assessment. If you want to discuss this please call our Sustainable Places team on 0203 025 5475.

TEAM2100: delivering the first 10 years of investment in tidal flood defences for the Thames Estuary 2100 Plan. For more information, visit [the TEAM2100 website](#) or email [team2100@jacobs.com](mailto:team2100@jacobs.com)

### **East Anglia Area**

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD

Brampton Office, Bromholme Lane, Brampton, Huntingdon, PE28 4NE

General Enquiries: 03708 506506

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

Website: <https://www.gov.uk/government/organisations/environment-agency>

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours sincerely

**Vicki Clemence**

**Customers and Engagement Officer**

Direct dial: 02030 255472

**East Anglia Area**

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD

Brampton Office, Bromholme Lane, Brampton, Huntingdon, PE28 4NE

General Enquiries: 03708 506506

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

Website: <https://www.gov.uk/government/organisations/environment-agency>

**Reference:** EAn/2018/108804  
**Site Address:** Marsh Road, Potter Heigham, NR29 5LN  
**Date:** 17/12/2018

**Included:**

- Flood Map
- Historic Flood Outlines Map

**Coastal Modelling (Thurne & Hickling) 2018**

- Undefined Key Outlines – Current Day
- Undefined Key Outlines – Climate Change
- 2D Nodes Map & Levels – Undefined Only

**Important information to note with your Product:**

**Flood Risk Assessments (FRAs)**

If you are obtaining this information for use within a Flood Risk Assessment (FRA) required for a planning application, please include our unaltered Product 4 data within an appendix of your FRA.

**Flood Zones**

Please see the attached map showing the Flood Zones (outlines) for the area of the site. Our maps show the site is located in tidal Flood Zone 3. For further information with regards to Flood Zones, please see below:

**Table 1: Flood Zones**

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences.

<b>Flood Zone</b>	<b>Definition</b>
<b>Zone 1 Low Probability</b>	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
<b>Zone 2 Medium Probability</b>	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
<b>Zone 3a High Probability</b>	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)

Paragraph: 065 Reference ID: 7-065-20140306

**Un-Modelled Watercourses**

We have not undertaken any detailed modelling for the nearby un-named drainage channels, so this source of flood risk has not been assessed for the purpose of the flood map. This will need to be investigated further in any FRA. Normally, in these circumstances, an FRA will need to undertake a modelling exercise in order to derive flood levels and extents, both with and without allowances for climate change, for the watercourse, in order to inform the design for the site. Without this information, the risk to the development from fluvial flooding associated with the ordinary watercourse is unknown.

### **Open Coast Modelling**

The flood zones derived from this model will not show on our product 4s or external website until our next publication date of Thursday 31<sup>st</sup> January 2019.

### **Historic Flood Events**

Examinations of our records of historic flooding show that the general area has previously flooded. 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. Please see the attached PDF for flood history information.

### **Surface Water**

Please be aware that in recent years, there has been an increase in flood damage caused by surface water flooding or drainage systems that have been overwhelmed. We have worked with Lead local Flood Authorities (LLFAs) to develop a map which incorporates the best local and national scale information on surface water flood risk. These maps can be viewed on our website at the following:-

<https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

### **Reservoir Flooding**

You can obtain a map which shows the extent of flooding if a reservoir was to fail and release the water that it holds. The map shows the worst case scenario. These maps can be viewed on our website at the following:-

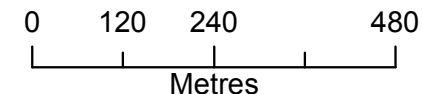
<https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

# Flood Map For Planning centred on Potter Heigham

Created 17/12/2018 - Ref: EAn/2018/108804



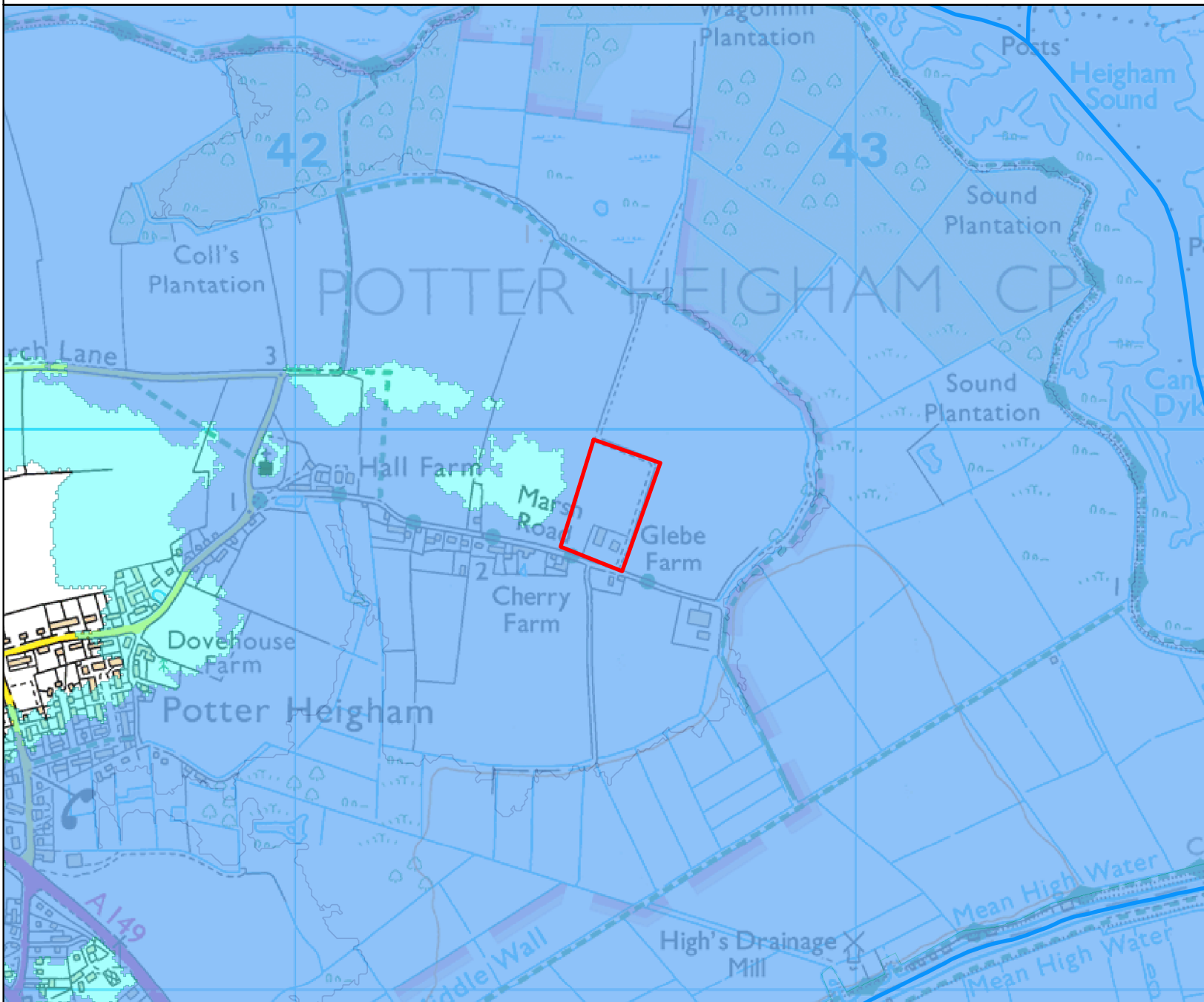
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



1:10,000

## Legend

- Site Outline
- Main Rivers
- Flood Storage Area
- Areas Benefiting from Defence
- Flood Zone 3
- Flood Zone 2



Flood Map for Planning (assuming no defences)

Flood Zone 3 shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

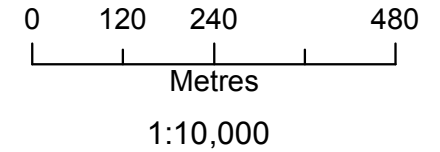
Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

# Recorded Flood Events Outlines Map centred on Potter Heigham




Created 17/12/2018 - Ref: EAn/2018/108804

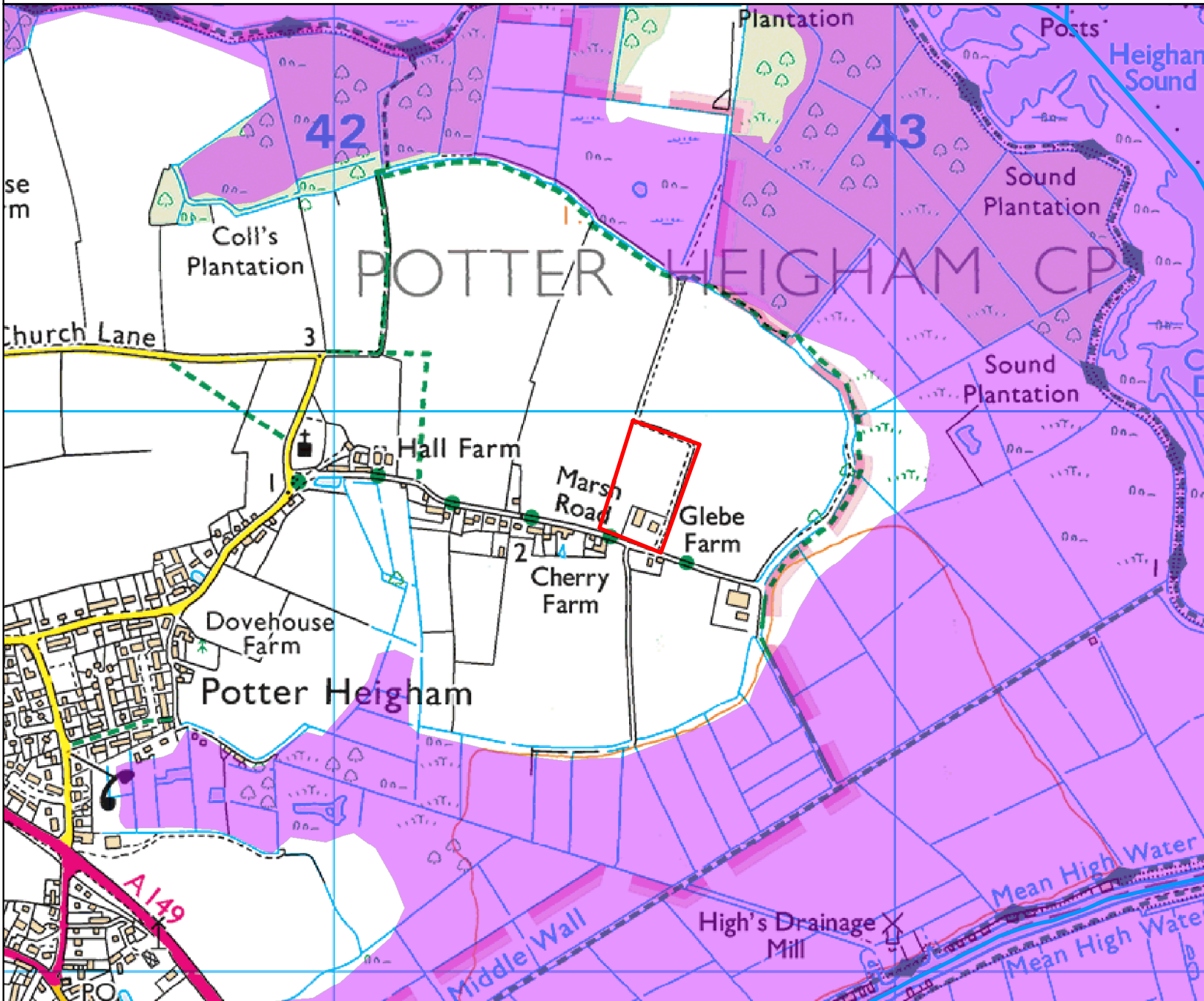


Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



## Legend

-  Site Outline
-  Main Rivers
-  1938 Flood Outline



The historic flood event outlines are based on a combination of anecdotal evidence, Environment Agency staff observations and survey. Our historic flood event outlines do not provide a definitive record of flooding. It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

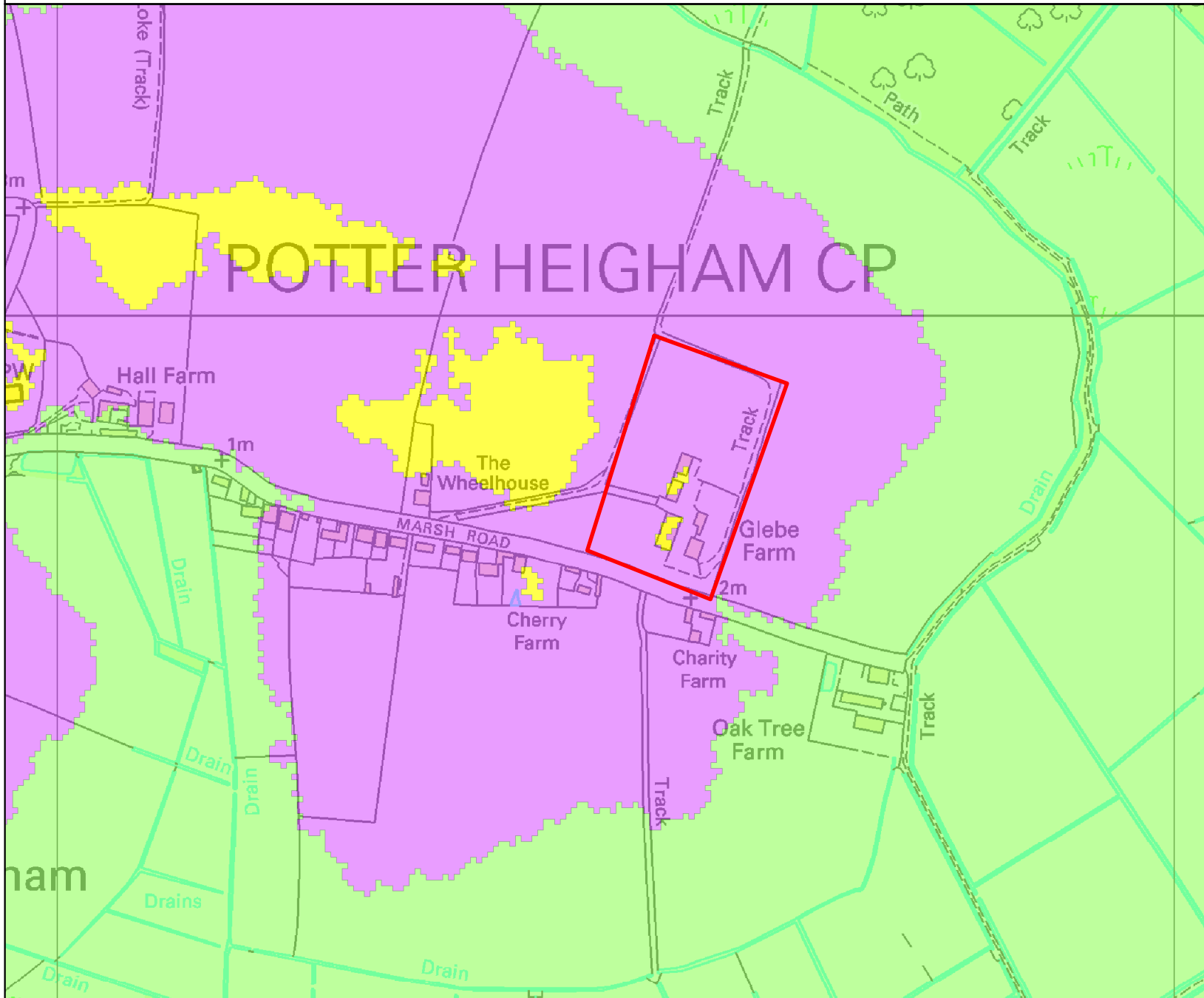
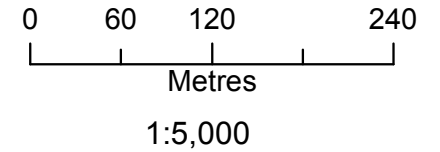


# Undefended Tidal Modelled Outlines Location Map

Created 17/12/2018 - Ref: EAn/2018/108804



Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



## Legend

- Site Outline
- Main Rivers
- 1 in 20 (5%)
- 1 in 200 (0.5%)
- 1 in 1000 (0.1%)

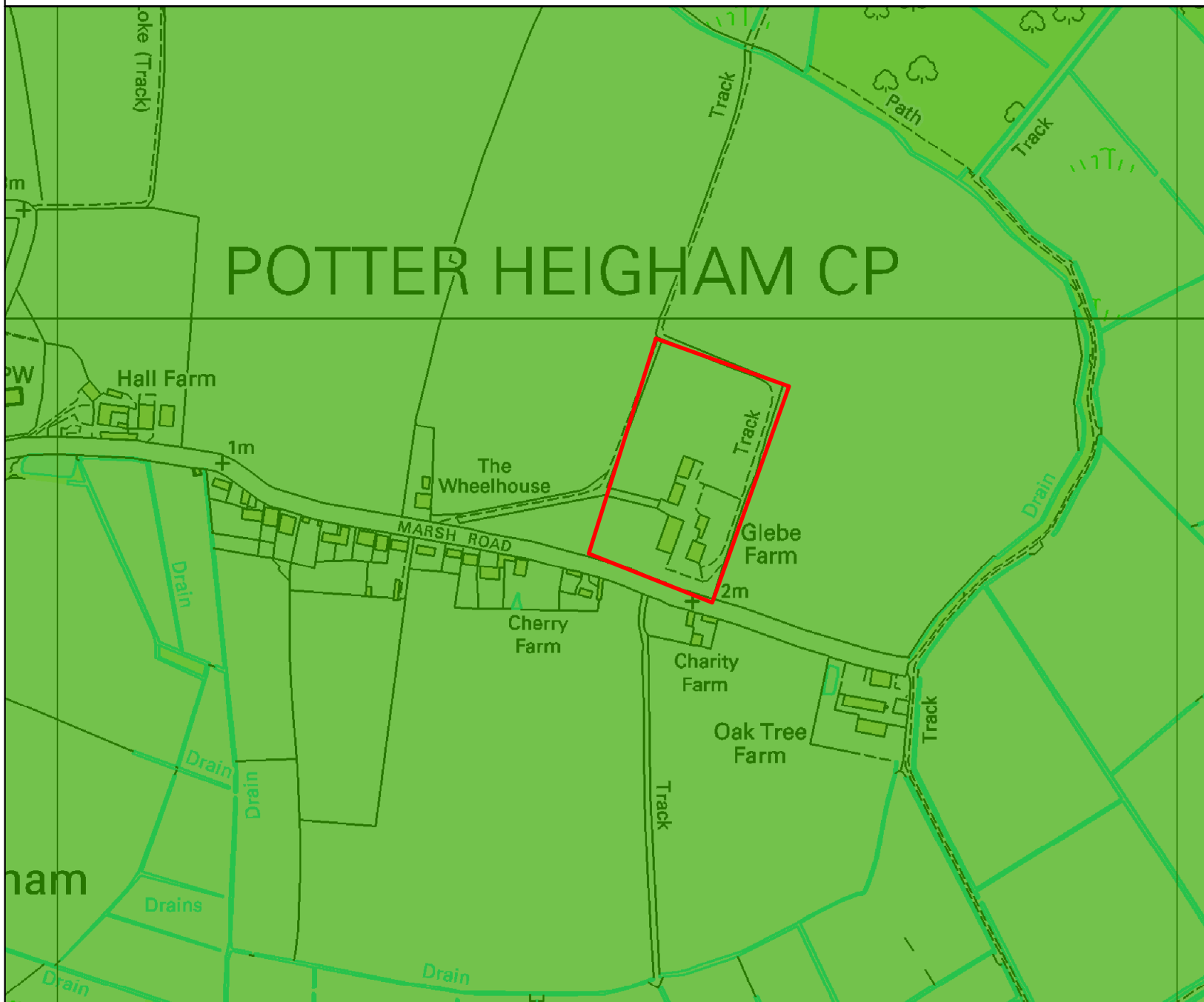
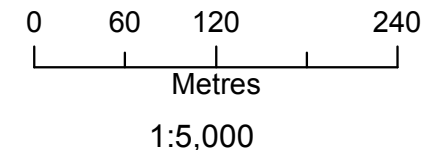
This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

# Undefended Tidal Modelled Outlines with CC Location Map

Created 17/12/2018 - Ref: EAn/2018/108804



Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



## Legend

- Site Outline
- Main Rivers
- 1 in 20 (+CC)
- 1 in 200 (+CC)
- 1 in 1000 (+CC)

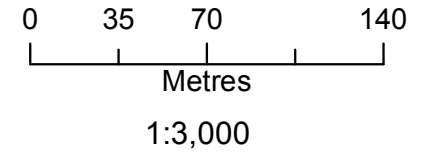
This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

# Undefended Tidal Levels (mAODN) Location Map

Created 17/12/2018 - Ref: EAn/2018/108804



Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD

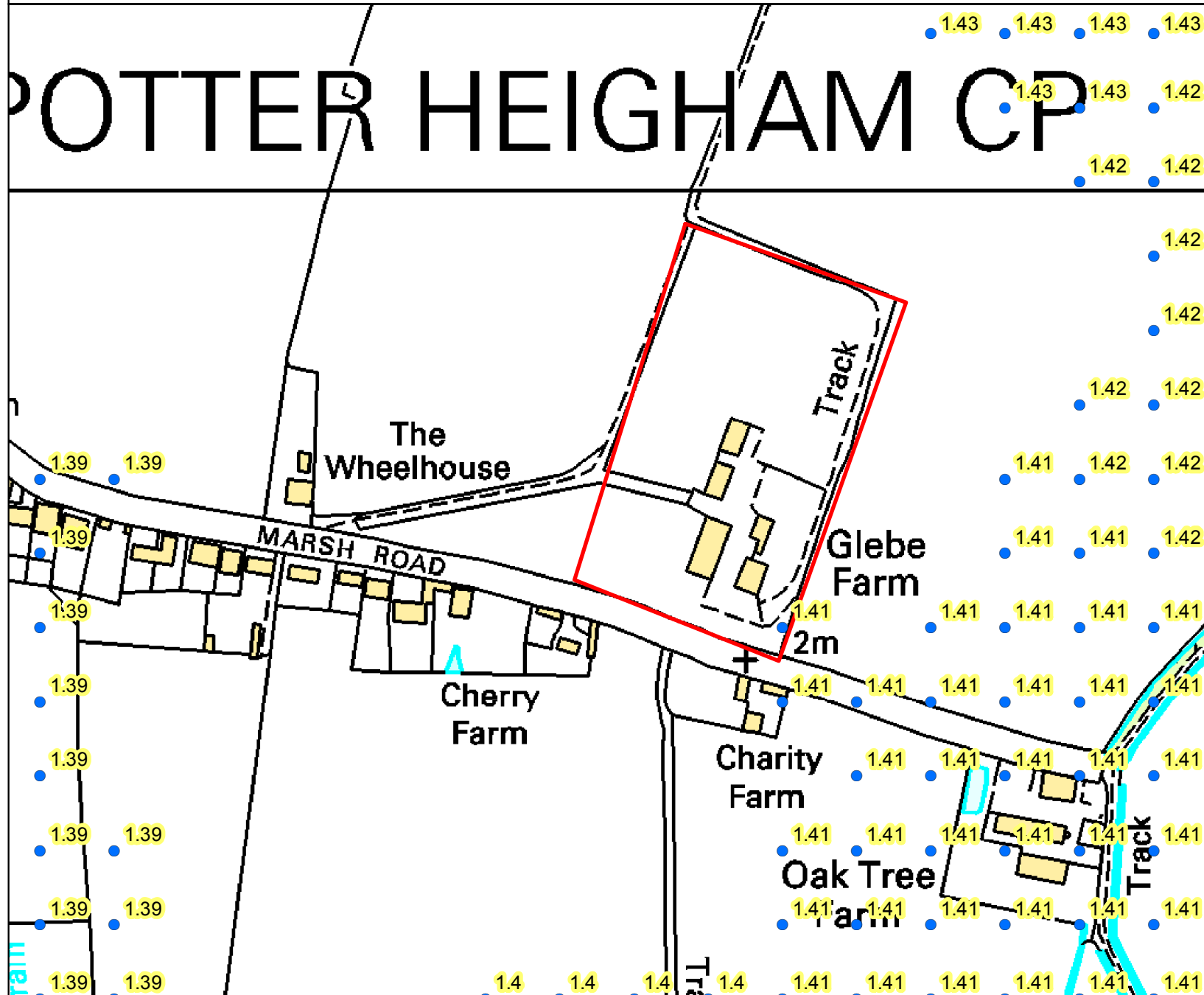


## Legend

- Site Outline
- Main Rivers
- 1 in 20 (5%)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

# POTTER HEIGHAM CP

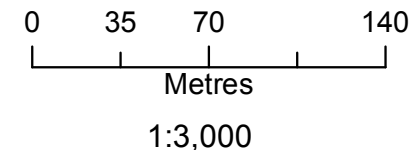


# Undefended Tidal Levels (mAODN) Location Map

## Created 17/12/2018 - Ref: EAn/2018/108804



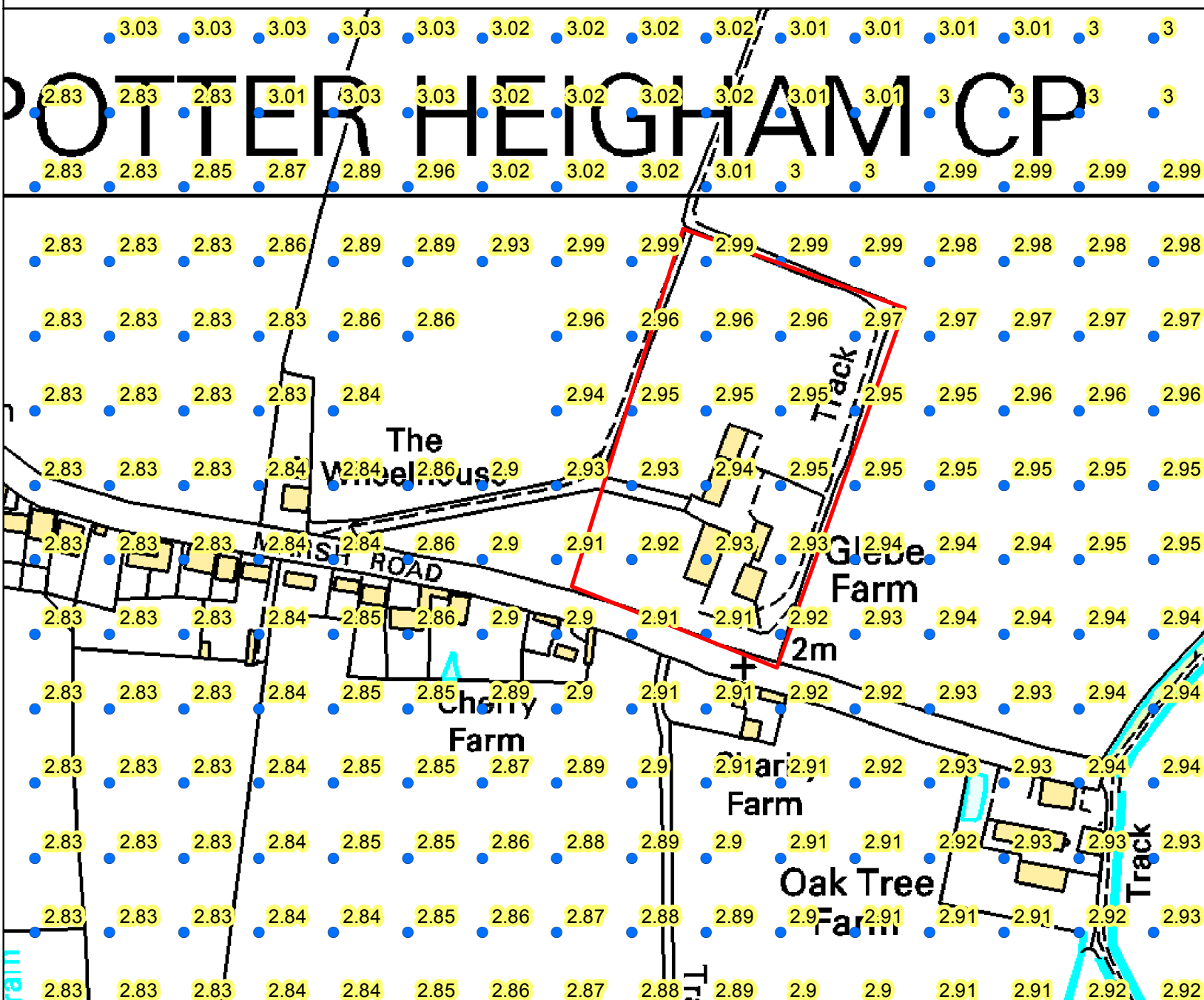
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



### Legend

- Site Outline
- Main Rivers
- 1 in 200 (0.5%)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

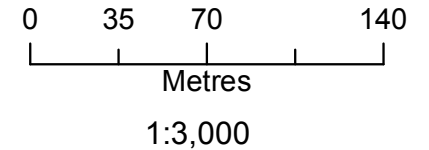


# Undefended Tidal Levels (mAODN) Location Map

## Created 17/12/2018 - Ref: EAn/2018/108804



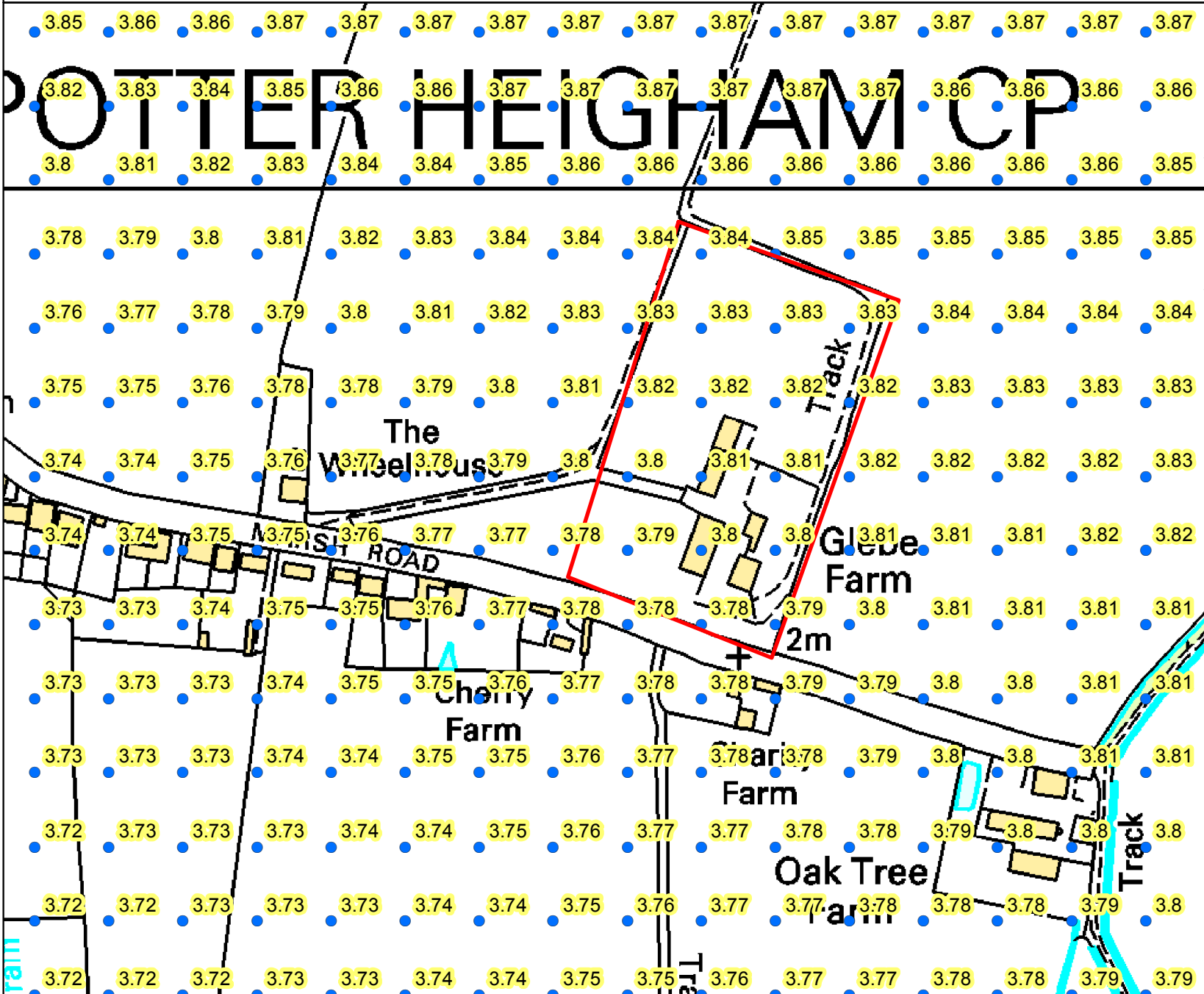
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



### Legend

- Site Outline
- Main Rivers
- 1 in 1000 (0.1%)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

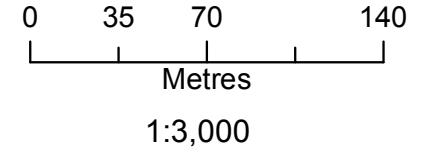


# Undefended Tidal Levels (mAODN) Location Map

## Created 17/12/2018 - Ref: EAn/2018/108804



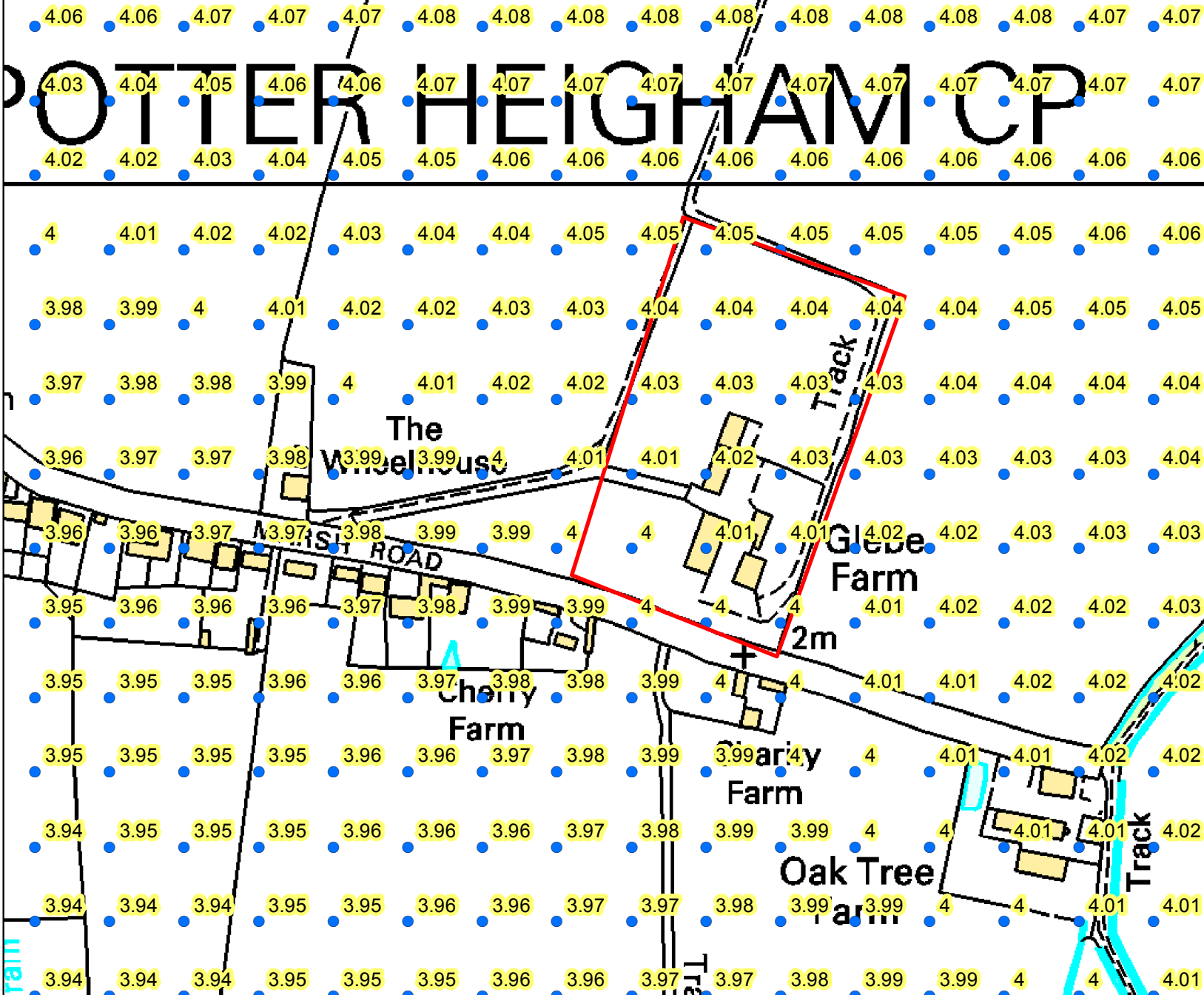
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



### Legend

- Site Outline
- Main Rivers
- 1 in 20 (+CC)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

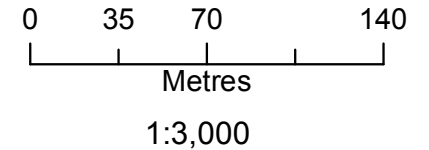


# Undefended Tidal Levels (mAODN) Location Map

## Created 17/12/2018 - Ref: EAn/2018/108804



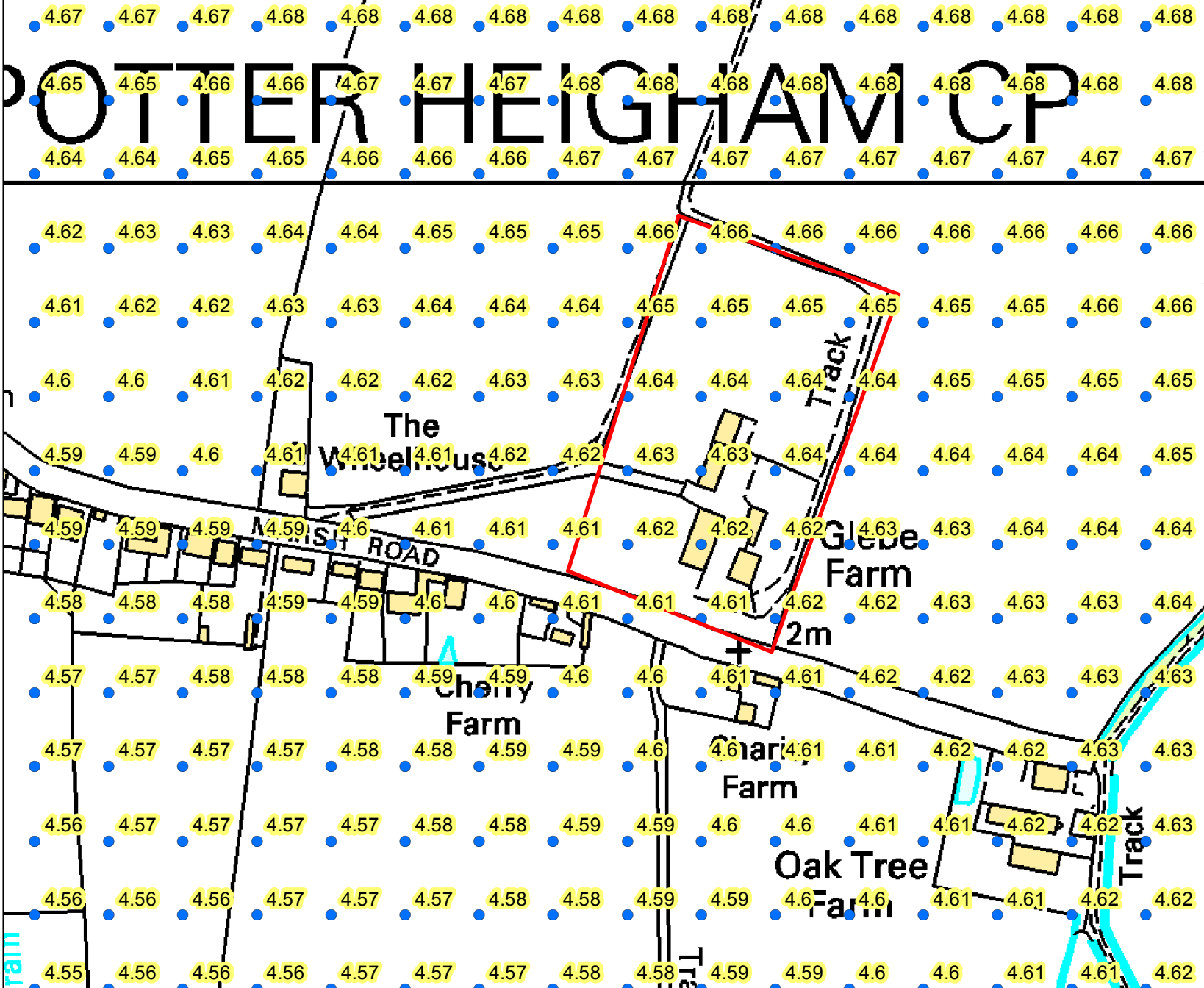
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



### Legend

- Site Outline
- Main Rivers
- 1 in 200 (+CC)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.

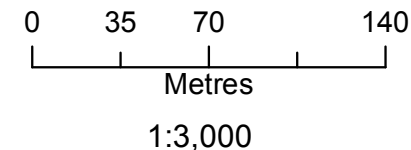


# Undefended Tidal Levels (mAODN) Location Map

## Created 17/12/2018 - Ref: EAn/2018/108804



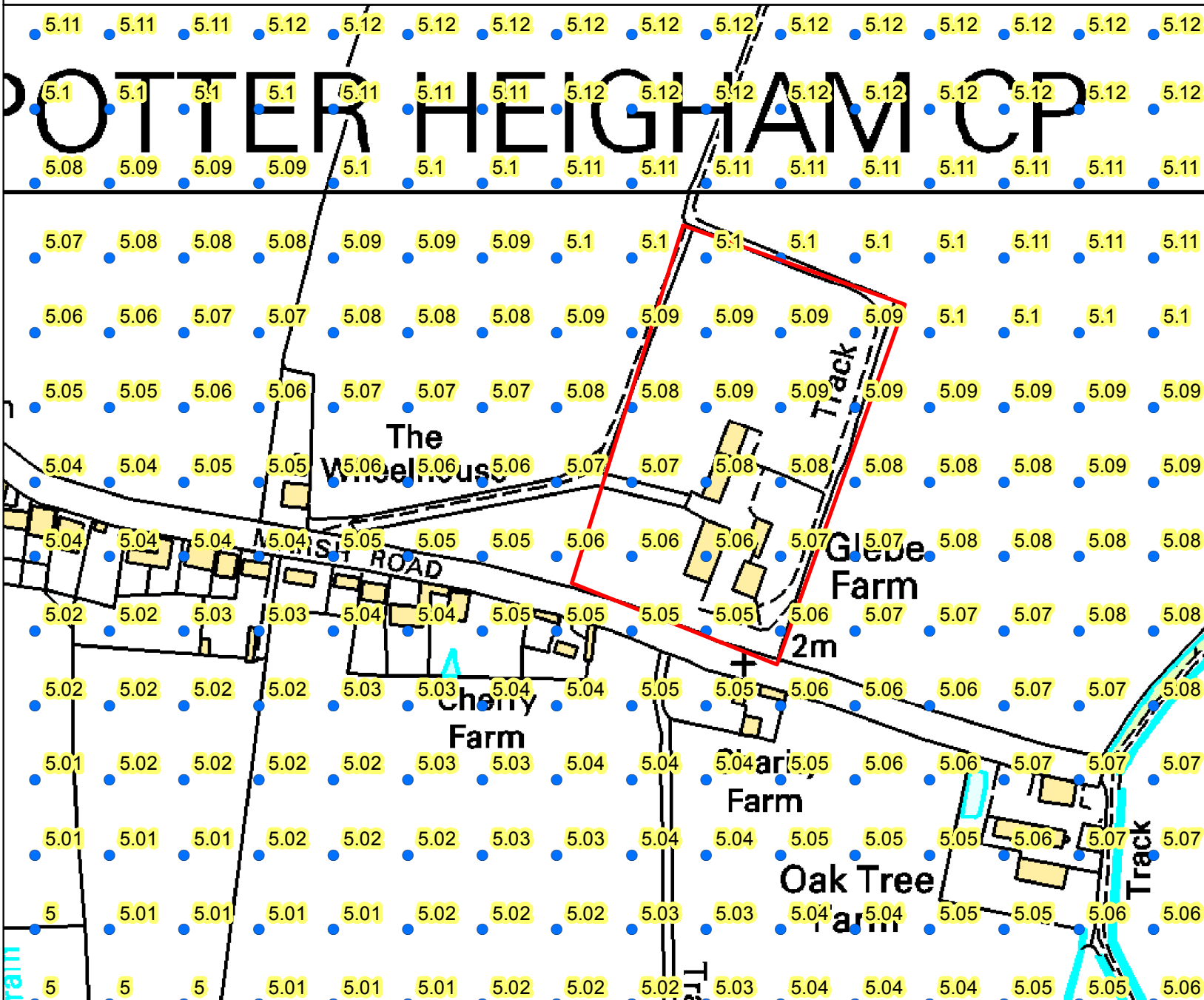
Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



### Legend

- Site Outline
- Main Rivers
- 1 in 1000 (+CC)

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences if present.



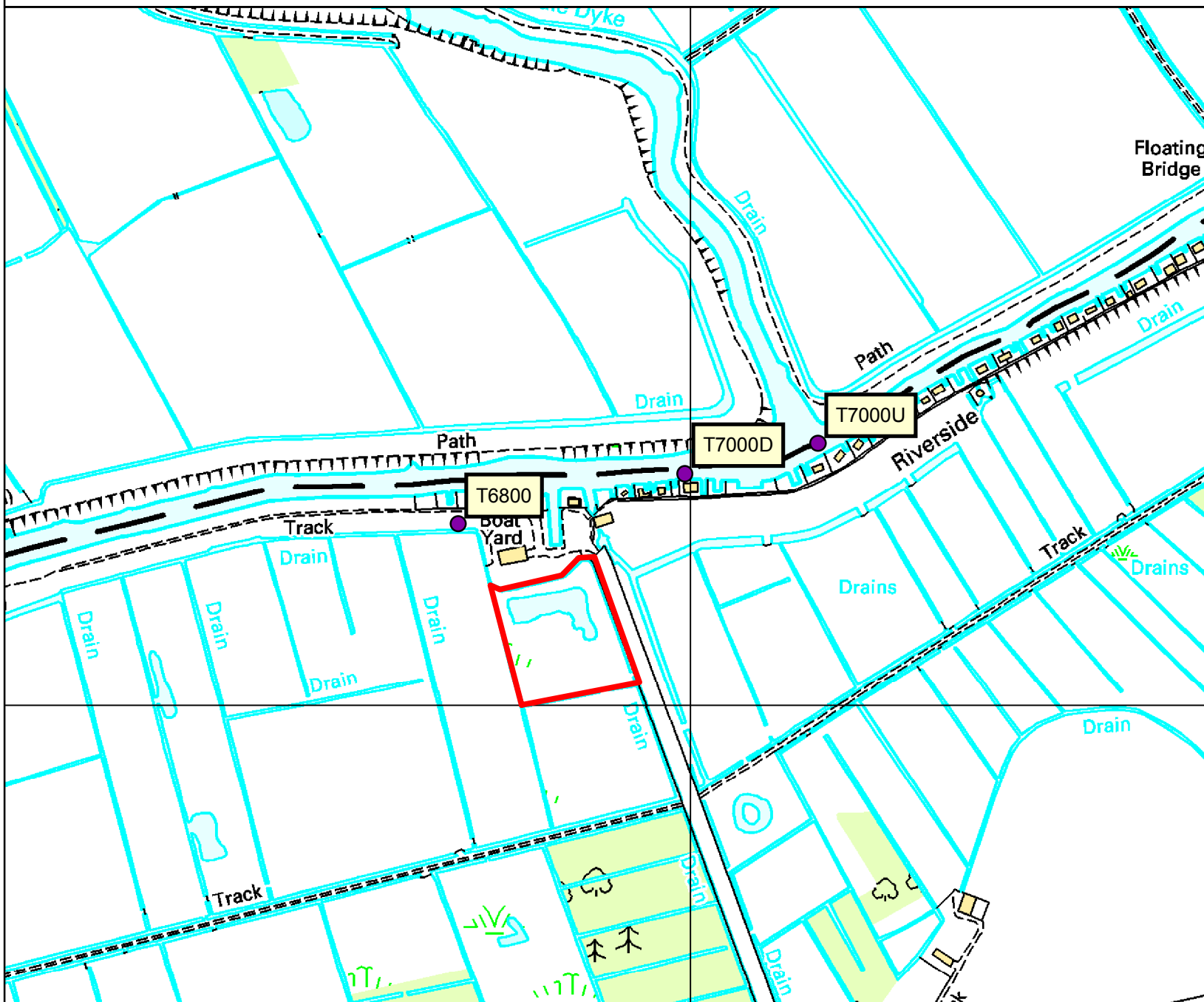
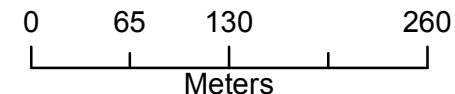


# Modelled Level Location Map centred on Martham



Created 08/09/2017 - Ref: EAn/2017/58224



Environment Agency  
Iceni House  
Cobham Road  
Ipswich  
Suffolk  
IP3 9JD



## Legend

-  Modelled Flood Node Points
-  Site Location

Flood Map for Planning (assuming no defences)

Flood Zone 3 shows the area that could be affected by flooding:  
 - from the sea with a 1 in 200 or greater chance of happening each year  
 - or from a river with a 1 in 100 or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.



**Datasheet Reference:** EAn/2017/58224  
**Source of information:** Broads Flood Risk Study 2011  
 CH2M Hill (Halcrow) for the Environment Agency  
**Source of Flooding** Fluvial/Tidal  
**Flood Levels Provided** In-Channel

**Key**  
**CC** Climate Change  
**AEP** Annual Exceedance Probability  
**mAODN** Metres Above Ordnance Datum Newlyn  
**m<sup>3</sup>s<sup>-1</sup>** Cubic Metres Per Second (Cumecs)

**Defended - Fluvial**

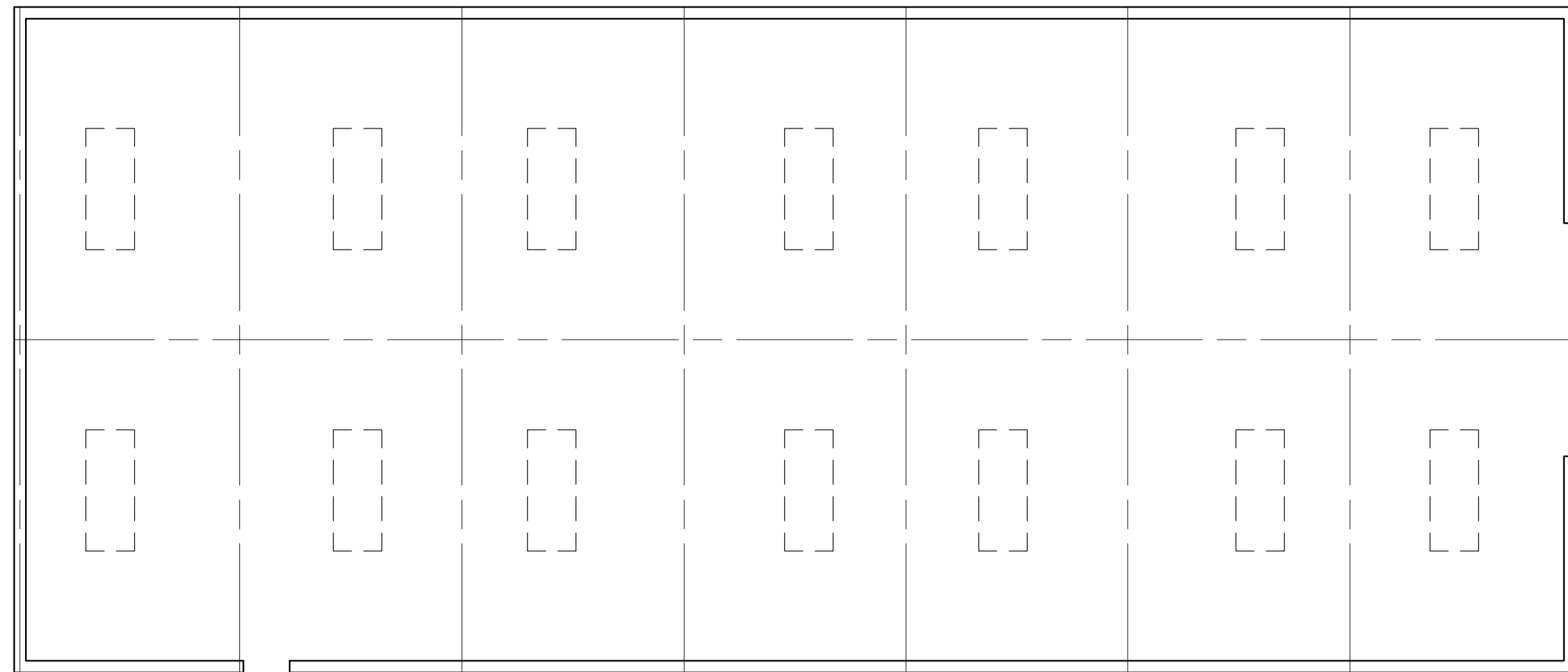
<b>Levels (mAODN)</b>	<b>AEP</b>								
<b>Node</b>	<b>10% (1:10)</b>	<b>5% (1:20)</b>	<b>5% (1:20)+CC</b>	<b>2% (1:50)</b>	<b>1% (1:100)</b>	<b>1% (1:100)+CC</b>	<b>0.1% (1:1000)</b>	<b>0.1% (1:1000)+CC</b>	
T7000U	0.77	0.79	1.51	0.82	0.84	1.52	0.87	1.54	
T7000D	0.77	0.79	1.51	0.82	0.84	1.52	0.87	1.54	
T6800	0.77	0.79	1.51	0.82	0.84	1.52	0.87	1.54	

**Defended - Tidal**

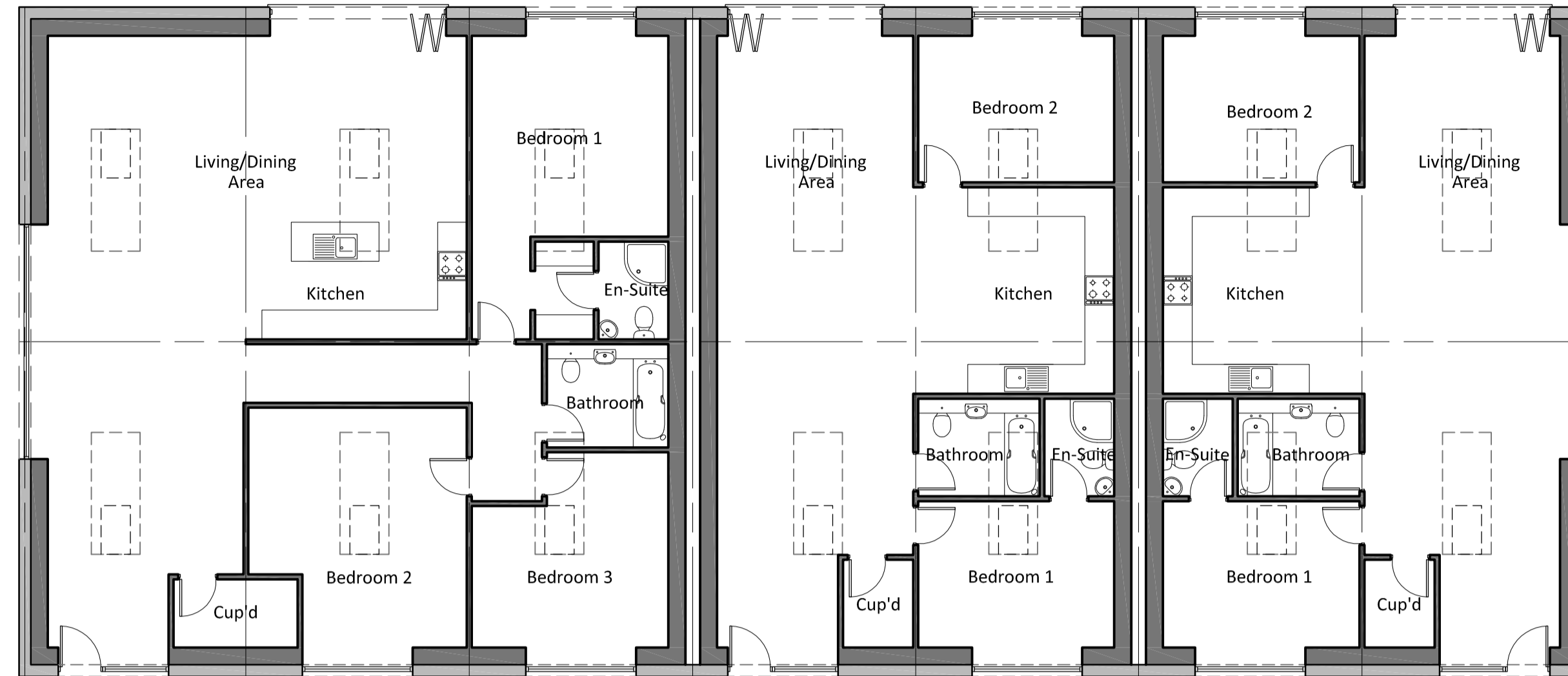
<b>Levels (mAODN)</b>	<b>AEP</b>									
<b>Node</b>	<b>10% (1:10)</b>	<b>5% (1:20)</b>	<b>5% (1:20)+CC</b>	<b>2% (1:50)</b>	<b>1% (1:100)</b>	<b>0.5% (1:200)</b>	<b>0.5% (1:200)+CC</b>	<b>0.1% (1:1000)</b>	<b>0.1% (1:1000)+CC</b>	
T7000U	0.68	0.70	1.40	0.73	0.75	0.77	1.41	0.81	1.41	
T7000D	0.68	0.70	1.40	0.73	0.75	0.77	1.41	0.81	1.41	
T6800	0.68	0.71	1.40	0.74	0.76	0.77	1.41	0.81	1.41	

## **DRAWINGS**

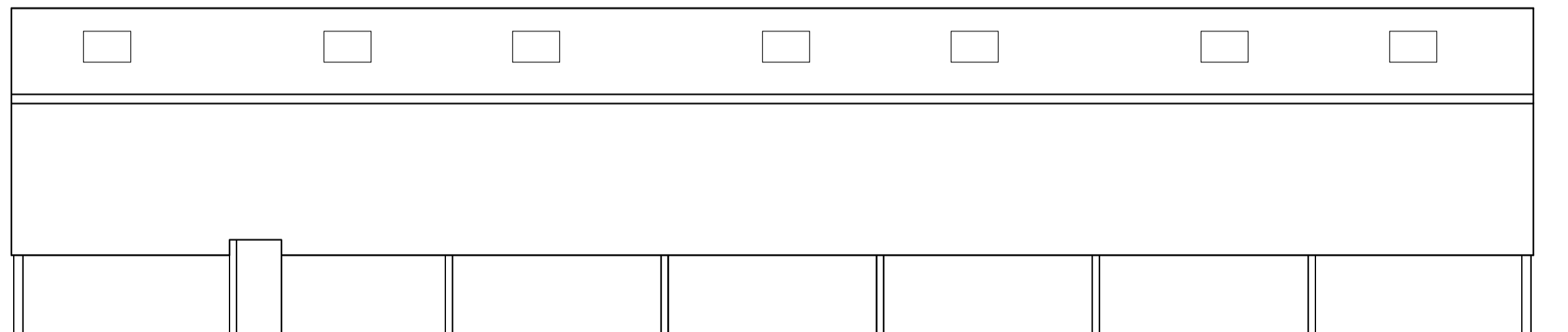




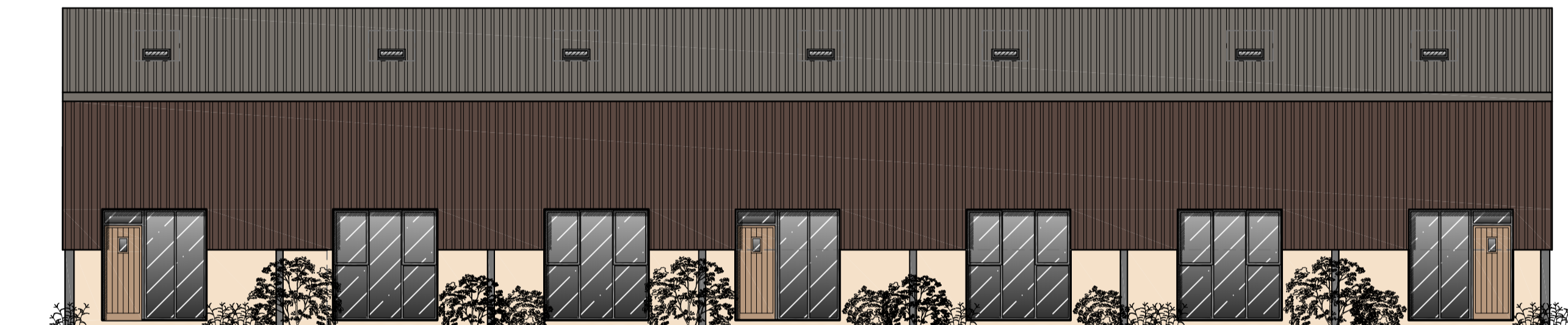
**Existing Floor Plan**  
scale 1:100



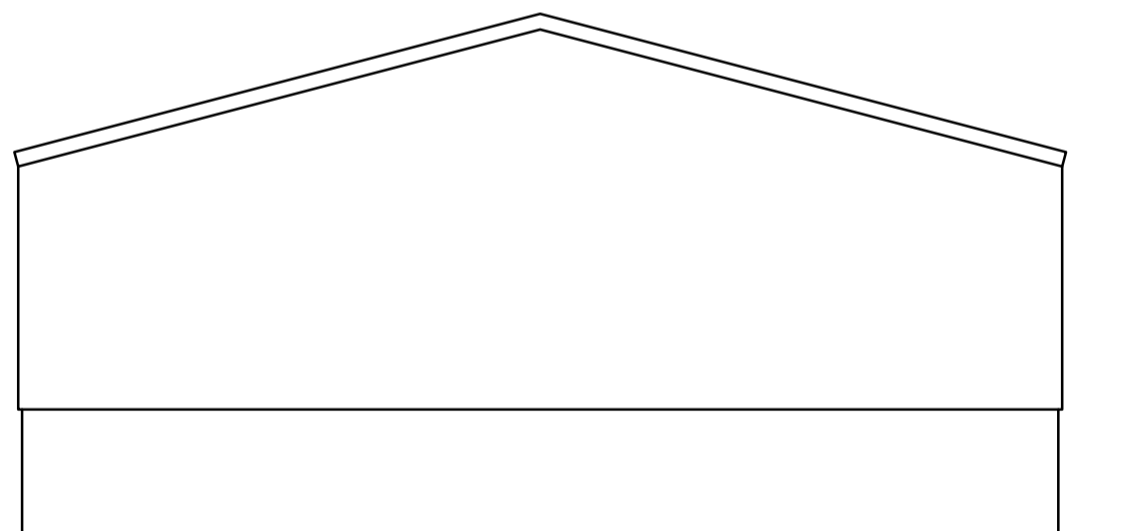
**Proposed Floor Plan**  
scale 1:100



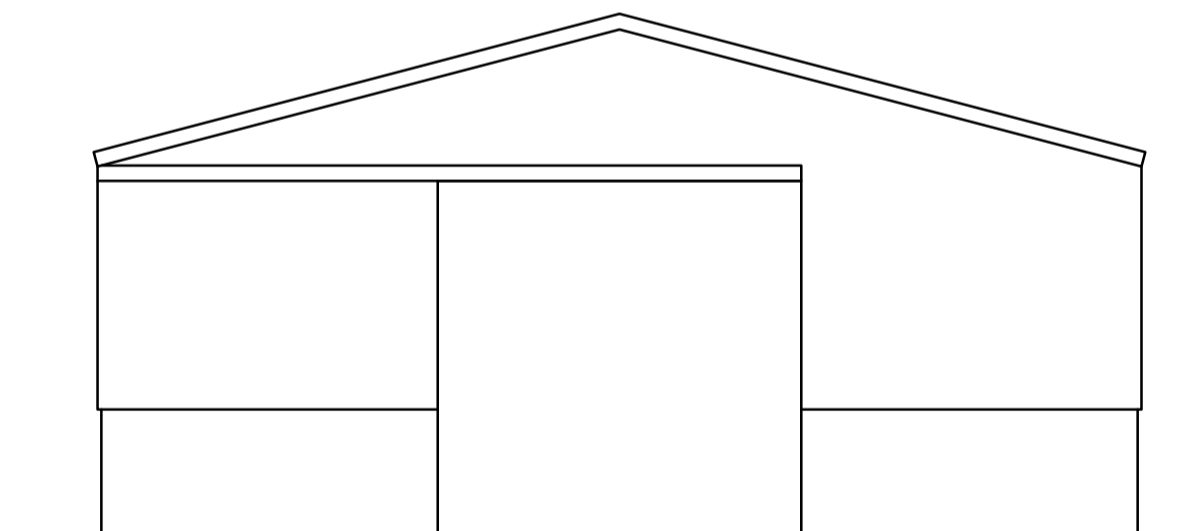
**Existing Front Elevation (East)**  
scale 1:100



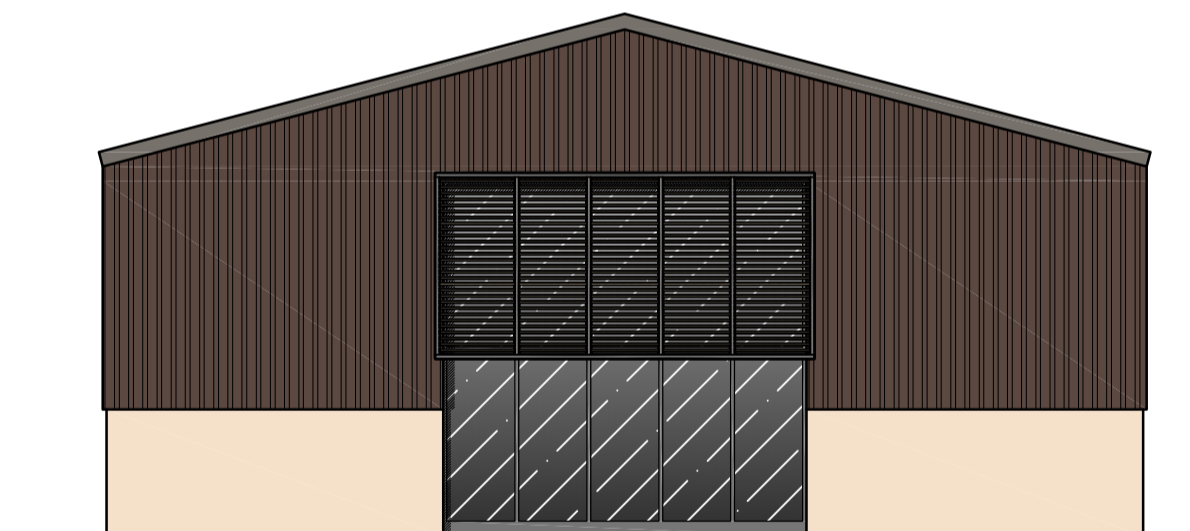
**Proposed Front Elevation (East)**  
scale 1:100



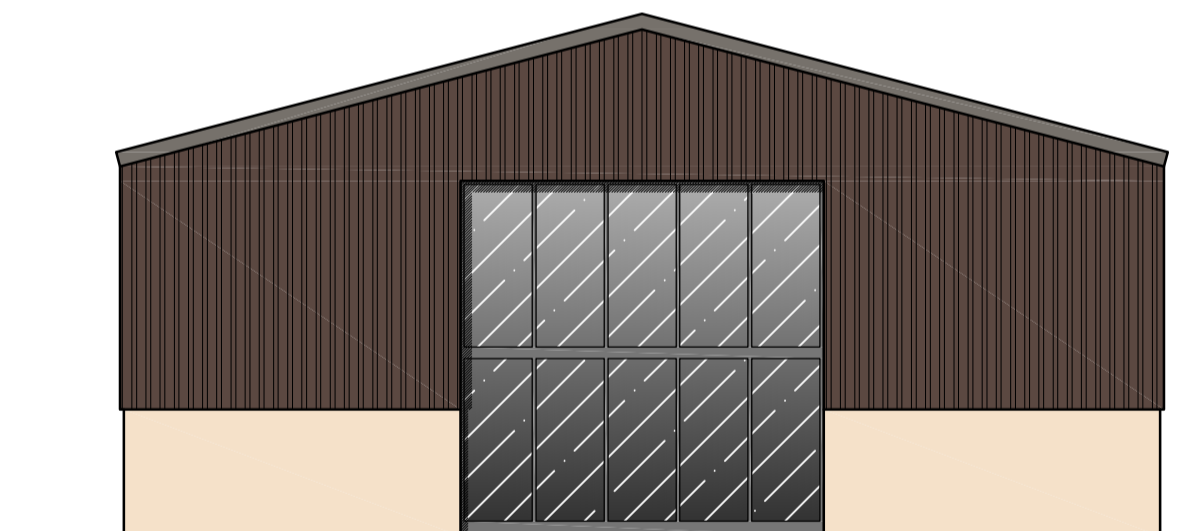
**Existing Side Elevation (South)**  
scale 1:100



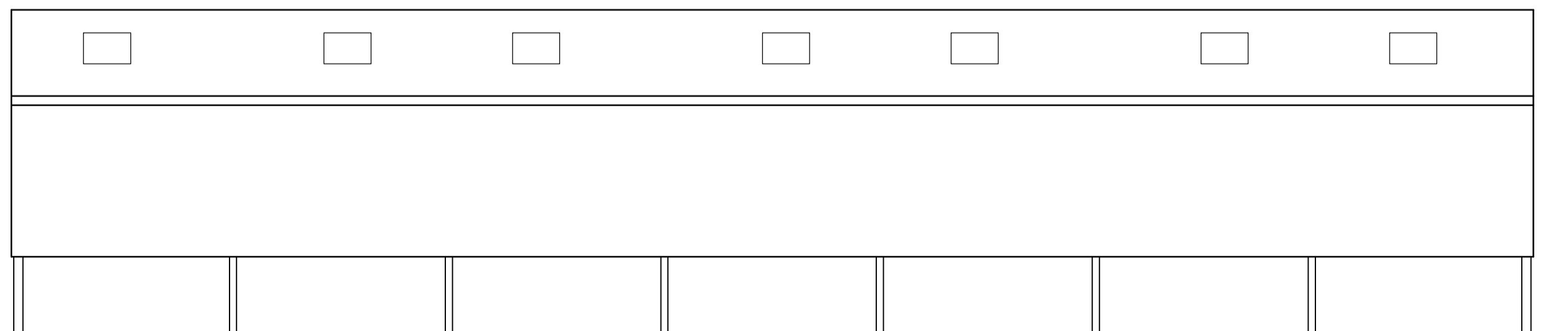
**Existing Side Elevation (North)**  
scale 1:100



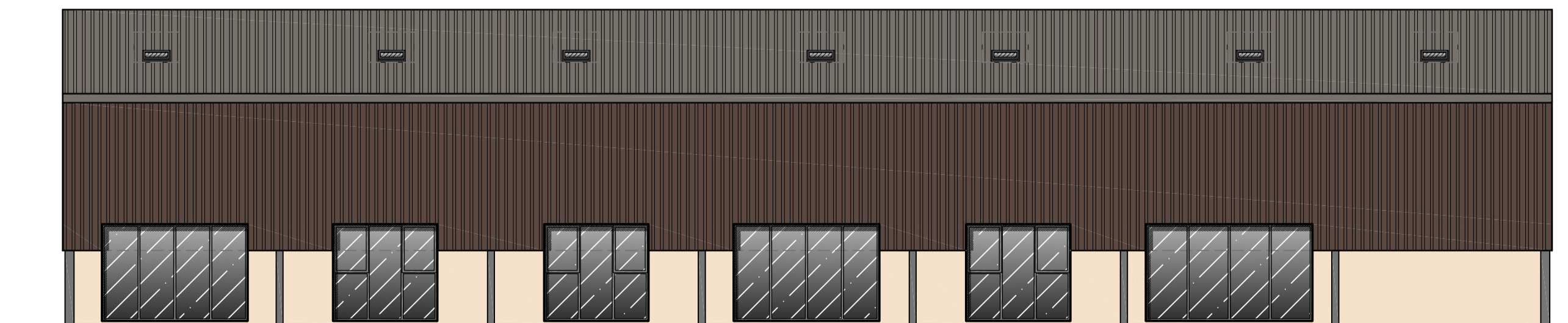
**Proposed Side Elevation (South)**  
scale 1:100



**Proposed Side Elevation (North)**  
scale 1:100



**Existing Rear Elevation (West)**  
scale 1:100



**Proposed Rear Elevation (West)**  
scale 1:100

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A	02/11/2018 Title amended to 'Building B'	JY
rev:	date:	description:
		by:



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e-mail: design@prparchitecture.com  
web: www.paulrobinsonpartnership.co.uk

client:  
**R&B Norfolk Ltd**

location:  
**Glebe Farm, Marsh Road  
Potter Heigham NR29 5LN**

title:  
**Proposed Conversion of Former  
Agricultural Building  
Building B**

scale @ A1:  
1:100

date:  
October 2018

project no:  
7956

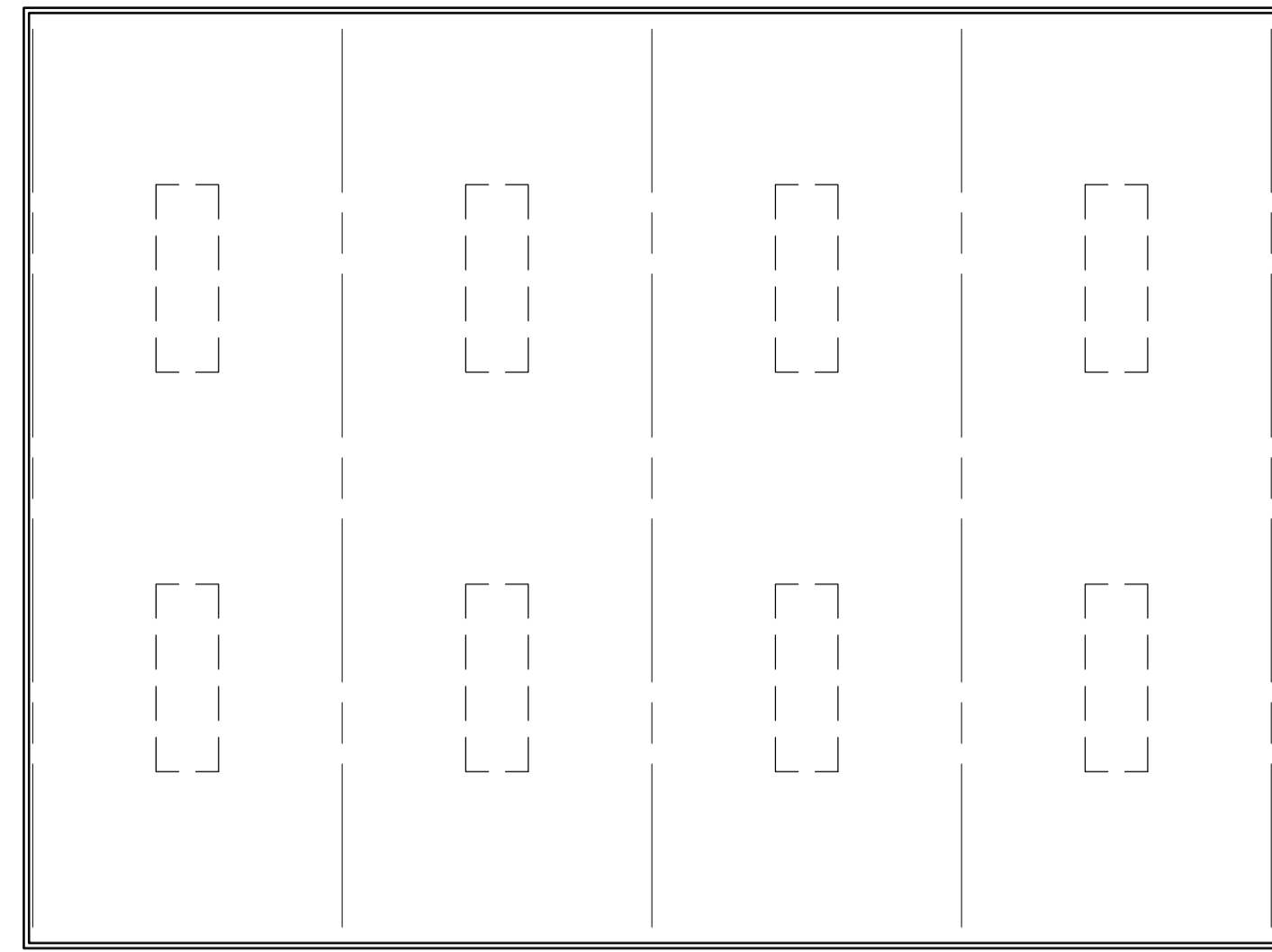
drawn by:  
JY

approved:  
JY

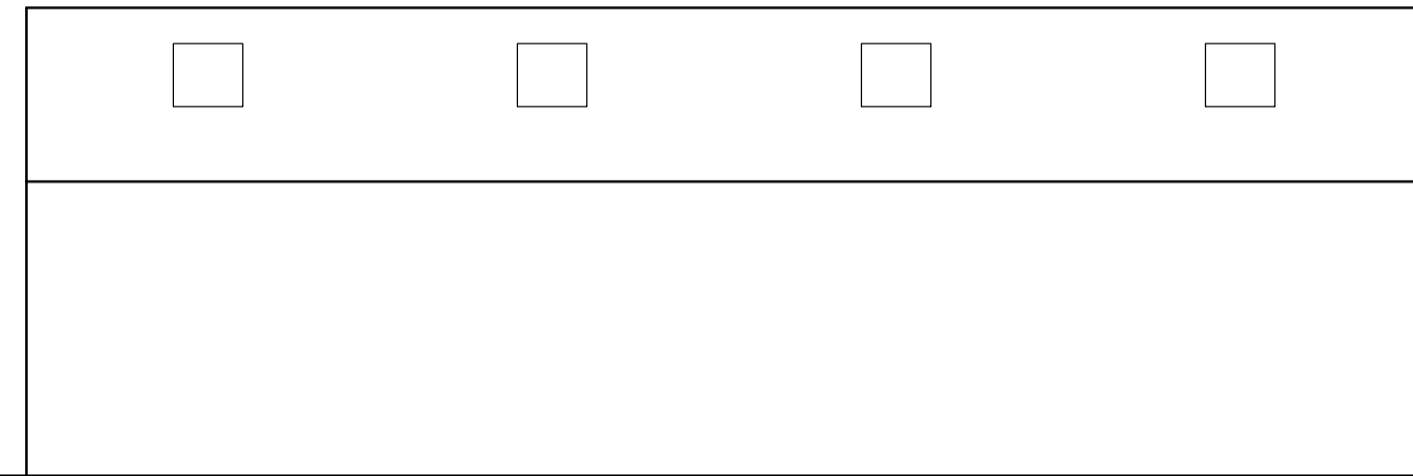
dwg no:  
06

revision:  
A

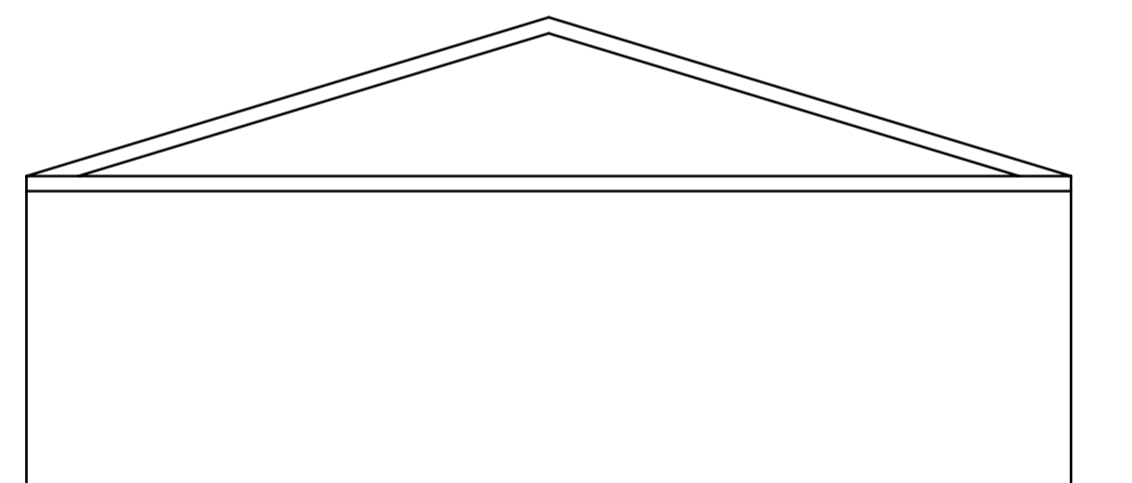
**PLANNING**



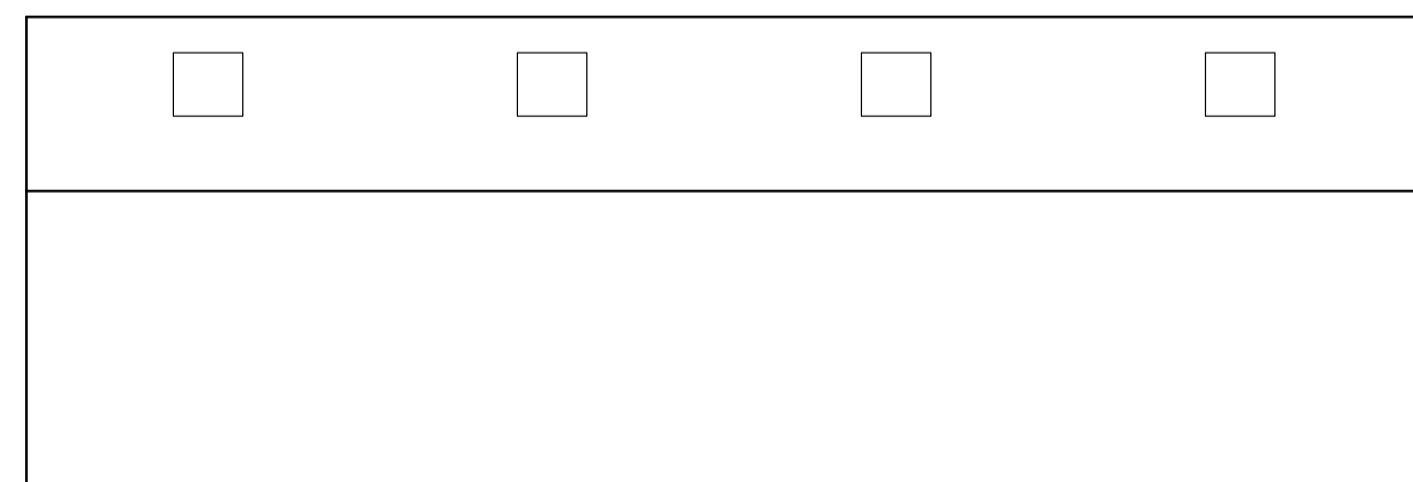
**Existing Floor Plan**  
scale 1:100



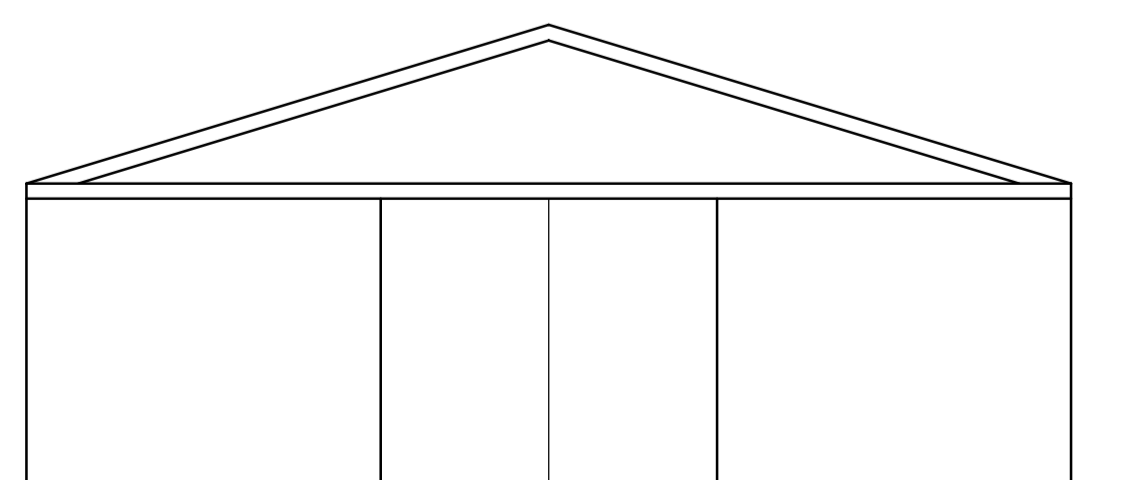
**Existing Front Elevation (West)**  
scale 1:100



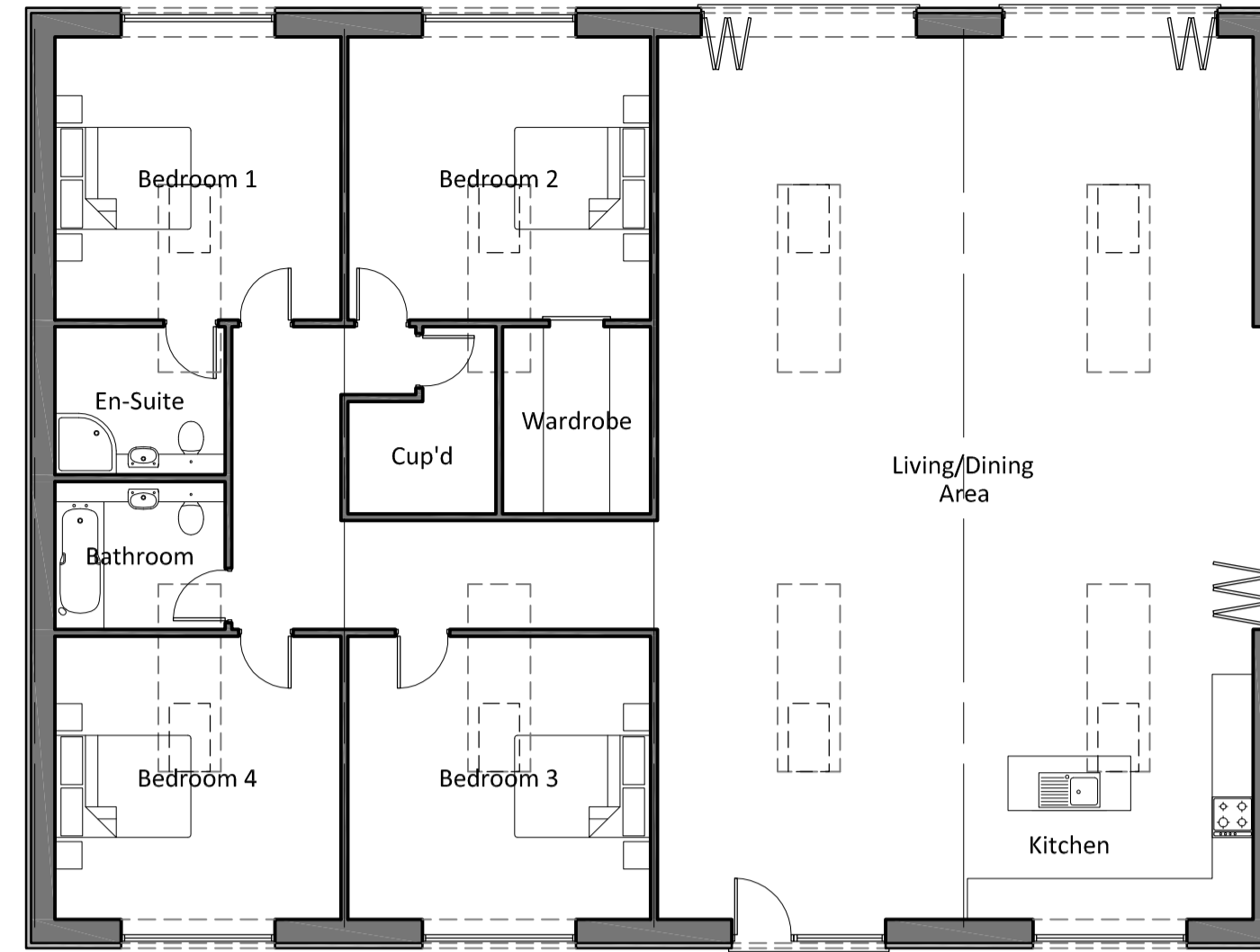
**Existing Side Elevation (North)**  
scale 1:100



**Existing Rear Elevation (South)**  
scale 1:100



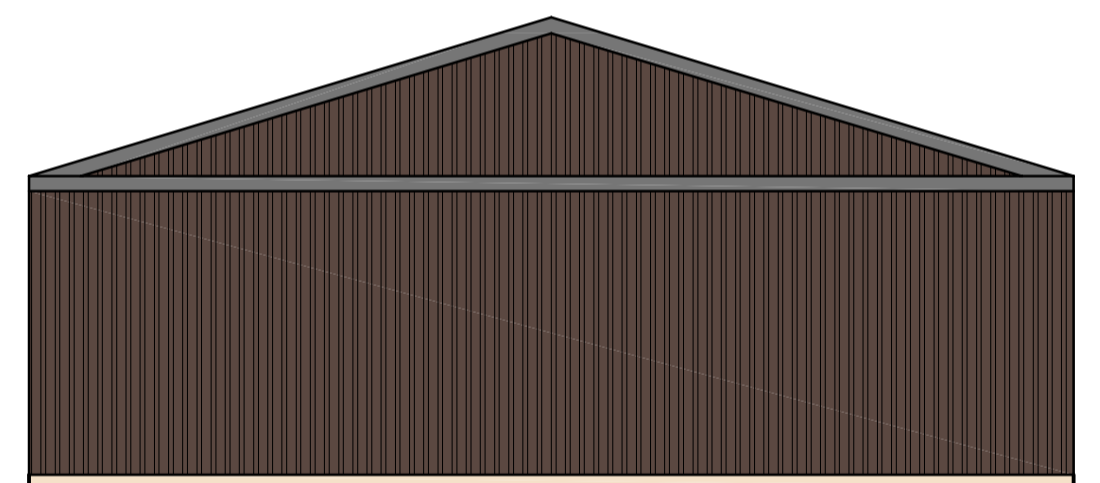
**Existing Side Elevation (South)**  
scale 1:100



**Proposed Floor Plan**  
scale 1:100



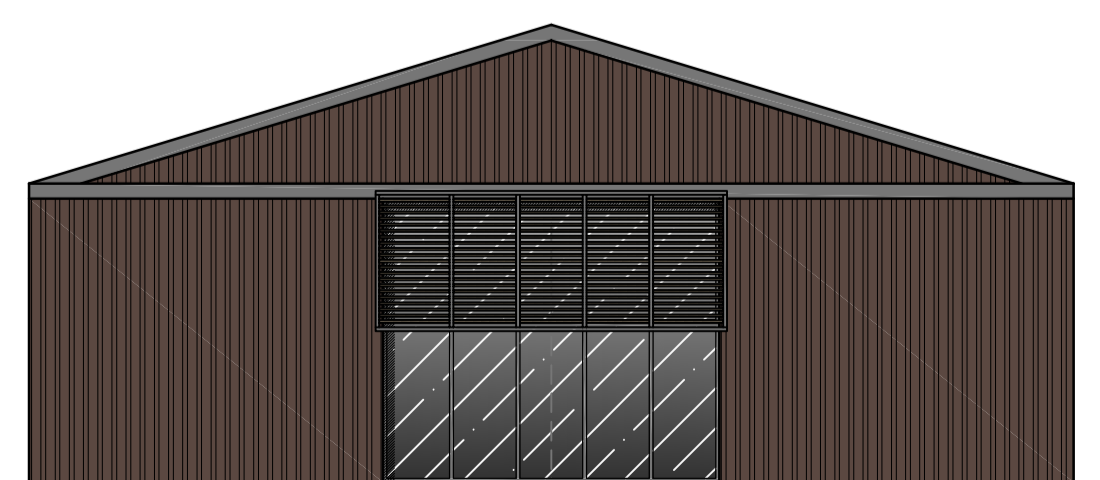
**Proposed Front Elevation (West)**  
scale 1:100



**Proposed Side Elevation (North)**  
scale 1:100



**Proposed Rear Elevation (South)**  
scale 1:100



**Proposed Side Elevation (South)**  
scale 1:100

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A	02/11/2018	Title amended to 'Building A'	JY
rev:	date:	description:	by:



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e-mail: design@prpartnership.com  
web: www.paulrobinsonpartnership.co.uk

**PLANNING**

client:  
**R&B Norfolk Ltd**

location:  
**Glebe Farm, Marsh Road  
Potter Heigham NR29 5LN**

title:  
**Proposed Conversion of Former  
Agricultural Building  
Building A**

scale @ A1:  
**1:100**

date:  
**October 2018**

project no:  
**7956**

drawn by:  
**JY**

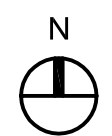
approved:  
**JY**

dwg no:  
**07**

revision:  
**A**

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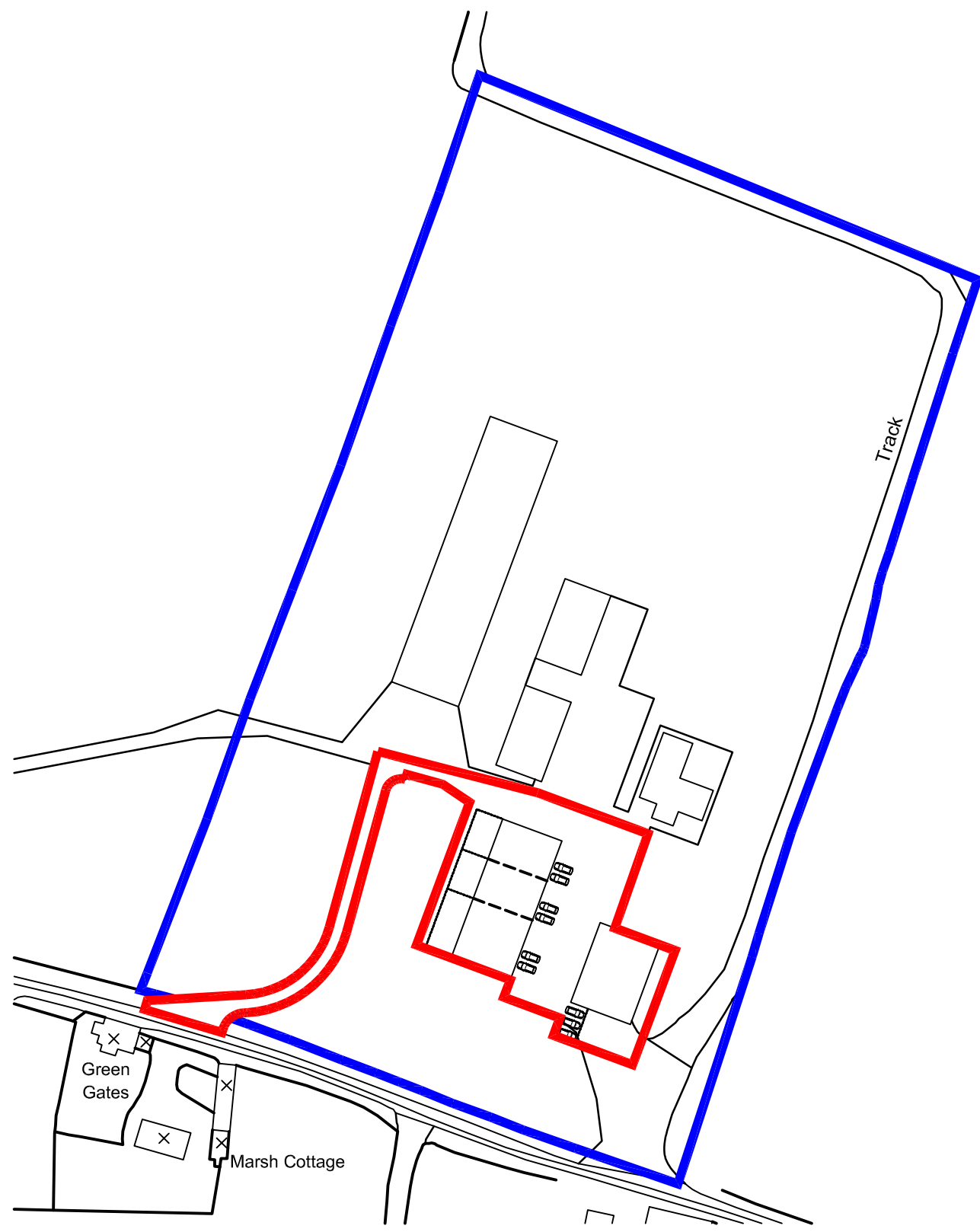
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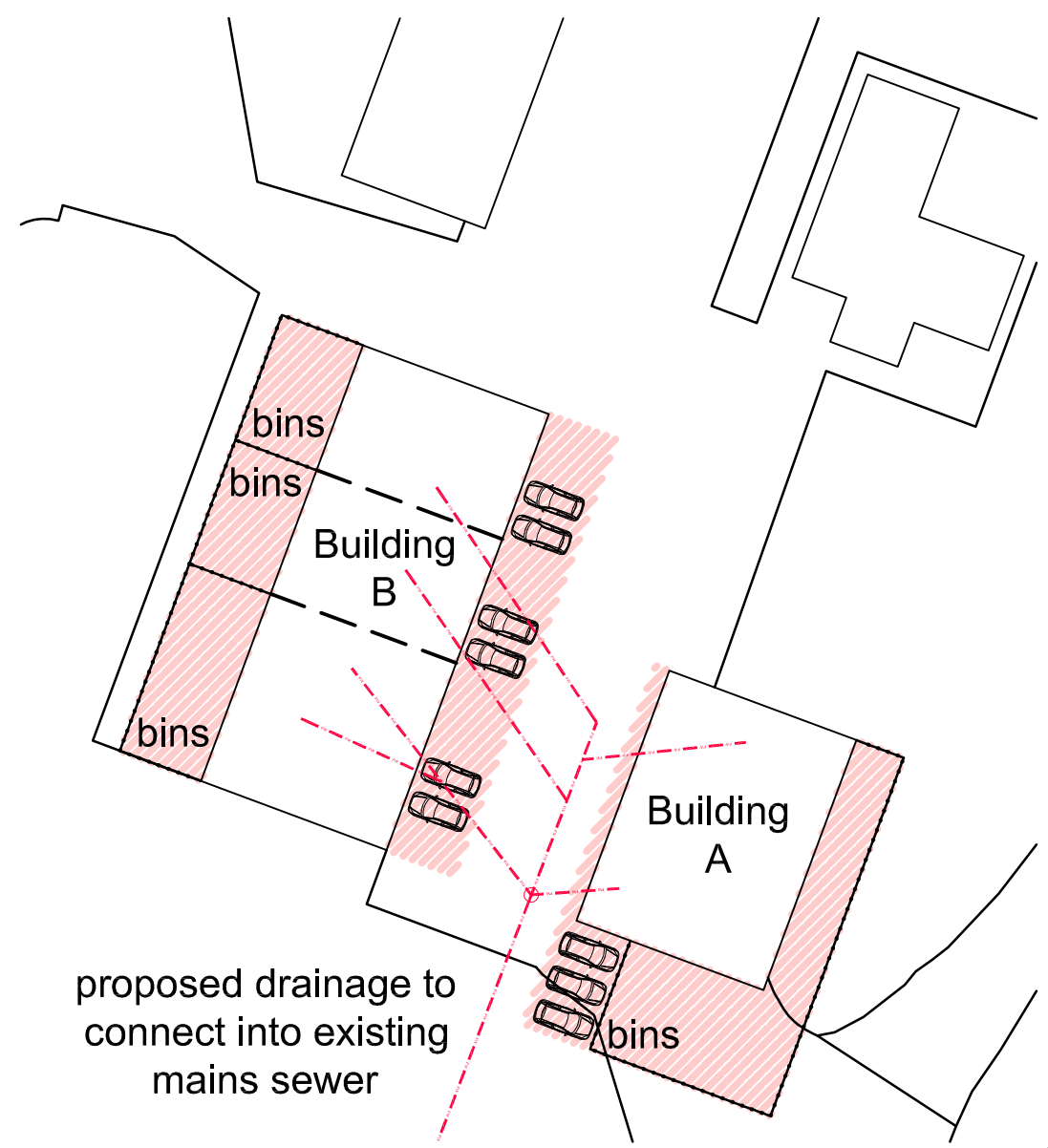
**Legend**

- ▬ Application area
- ▬ Adjacent area within client's ownership
- ▨ Area of curtilage

rev:	date:	description:	by:



**Site Location Plan**  
Scale 1:1250



proposed drainage to connect into existing mains sewer

**Block Plan**  
Scale 1:500



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PARTNERSHIP  
ARCHITECTURE + SURVEYING

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e-mail: design@prpartnership.com  
web: www.paulrobinsonpartnership.co.uk

**PLANNING**

client:	R&B Norfolk Ltd		
location:	Glebe Farm, Marsh Road Potter Heigham NR29 5LN		
title:	Proposed Conversion of Former Agricultural Building Site Location Plan and Block Plan		
scale @ A1:	1:1250, 1:500	drawn by:	JY
date:	November 2018	approved:	JY
project no:	7956	dwg no:	08
		revision:	

