



**PROPOSED TWO-STOREY
SIDE AND REAR
EXTENSION AT 29 SUTTON
CLOSE, EASTCOTE,
HILLINGDON**

FLOOD RISK ASSESSMENT

JUNE 2021

REPORT REF: 2732/RE/06-21/01

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CONTRACT

Evans Rivers and Coastal Ltd has been commissioned by Bhakti Brahmbhatt to carry out a flood risk assessment for a proposed side and rear extension at 29 Sutton Close, Eastcote, Hillingdon.

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APPENDIX A	CORRESPONDENCE
DRAWINGS	SD1972(P)03
	SD1972(P)04-B
	SD1972(P)05-B
	SD1972(P)06-B
	SD1972(P)07

1. INTRODUCTION

1.1 Project Scope

1.1.1 Evans Rivers and Coastal Ltd has been commissioned by Bhakti Brahmhatt to carry out a flood risk assessment for a proposed side and rear extension at 29 Sutton Close, Eastcote, Hillingdon.

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

- a) Review any literature and guidance specific to this area;
- b) Assess the risks to people and property and propose mitigation measures accordingly;
- c) Review existing evacuation and warning procedures for the area;
- d) Carry out an appraisal of flood risk from all sources as required by NPPF;
- e) 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 2019. 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 – Hertfordshire and North London Area*.
- West London Strategic Flood Risk Assessment for the boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Harrow dated 2018.
- London Borough of Hillingdon Strategic Flood Risk Assessment (SFRA) dated 2008 and 2015;
- London Borough of Hillingdon Flood Investigation Report dated 28th July 2014;
- London Borough of Hillingdon Local Flood Risk Management Strategy (LFRMS) dated 2016;

- London Borough of Hillingdon Preliminary Flood Risk Assessment (PFRA) dated 2011;
- London Borough of Hillingdon Surface Water Management Plan (SWMP).

2. DATA COLLECTION

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

- Ordnance Survey 1:10,000 street view map obtained via Promap (Evans Rivers and Coastal Ltd OS licence number 100049458).
- British Geological Survey, *Online Geology of Britain Viewer*.
- 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).
- Filtered LIDAR data at 1m resolution.
- Flood level data provided by the Agency in their response (Appendix A).

3. SITE CHARACTERISTICS

3.1 Existing Site Characteristics and Location

- 3.1.1 The site is located at number 29 Sutton Close, Eastcote, Hillingdon. The approximate Ordnance Survey (OS) grid reference for the site is 510440 188588 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 an existing two-storey dwelling together with a front and rear garden. The site is accessed from Sutton Close adjacent to the north western frontage of the site. The existing site layout can be seen on Drawing Number SD1972(P)03.
- 3.1.3 Filtered LIDAR data at 1m resolution has been obtained to determine and illustrate the topography of the site and surrounding area (Figure 2). It can be seen that there is little variation in ground levels across the site.
- 3.1.4 It can be seen that ground levels across the part of the site occupied by the dwelling are set at approximately 43.50m AOD. On-site inspections and Drawing Number DS1972(P)06-B shows that the dwelling is set 471mm above existing ground level and at 43.971m AOD.



Figure 2: LIDAR survey data where higher ground is denoted as red, 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 provide a two-storey side and rear extension. The floor level of the extension will be set the same as the existing dwelling and at 43.971m AOD.
- 3.2.2 The site proposals can be seen on Drawing Numbers SD1972(P)04-B, SD1972(P)05-B and SD1972(P)06-B.
- 3.2.3 Paragraph: 066 Reference ID: 7-066-20140306 of the NPPG confirms that residential development is classified as a 'more-vulnerable' use.
- 3.2.4 Paragraph 33 (ID 7-033-20140306) of the NPPF Planning Practice Guidance (NPPG) states that the Sequential Test does not apply to minor householder development.

4. BASELINE INFORMATION

4.1 Environment Agency Flood Zone Map

- 4.1.1 The Environment Agency's Flood Zone Map (Figure 3) and the 2018 West London SFRA show that the site is located partially within the NPPF Flood Zone 3 and 2 associated with the River Pinn located 15m south east of the site.
- 4.1.2 The extent of the Flood Zone 3a 'High Probability' is defined as the 1 in 100 year return period fluvial event in this case.
- 4.1.3 Flood Zone 3b functional floodplain is defined in Table 1 of the NPPG as the area where water flows or is stored during flood events. The functional floodplain is generally defined by the limit of the 1 in 20 year flood envelope.
- 4.1.4 The Agency's modelled flood outlines in Appendix A and a comparison between the flood levels and site levels indicates that the site is not located within Flood Zone 3b. This is also confirmed on the 2018 SFRA mapping.
- 4.1.5 The Flood Zone 2 'Medium Probability' floodplain is defined as having between a 1 in 100 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.

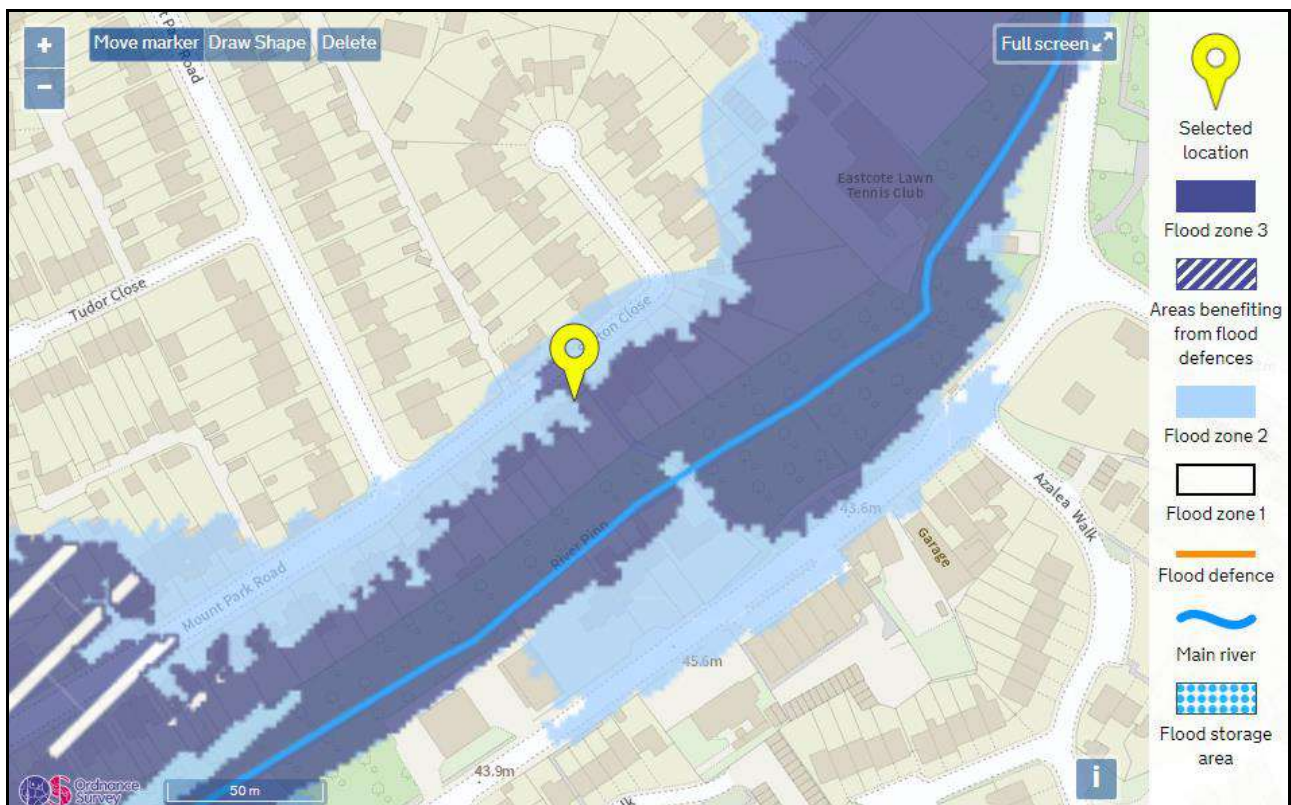


Figure 3: Environment Agency Flood Zone Map (Source: Environment Agency, 2021)

4.2 Environment Agency Flood Levels

- 4.2.1 It is understood that there are no raised flood defences along this part of the watercourse.

- 4.2.2 Two-dimensional fluvial flood data across the site and flood mapping has been provided by the Agency in their response (Appendix A) and are summarised in Table 1.
- 4.2.3 It is understood that the climate change 100 year flood level should reflect the UK Government's climate change allowances guidance dated February 2016 and Agency's guidance note entitled *Flood risk assessments: Climate change allowances – Hertfordshire and North London Area*.
- 4.2.4 It is understood from the guidance that for design purposes the "Higher Central" climate change allowance for the Thames region of 35% as outlined in Table 1 of the guidance should be applied to the peak flow rate for "more-vulnerable" development in Flood Zone 3a/2.
- 4.2.5 It is also understood that the current advice when considering the new UK Government climate change allowances, is that whilst the "Higher Central" allowances can be used for design purposes, the "Upper End" increase in peak flow rate of 70% should be considered when determining the potential increase in flood risk to people, as this will also consider the scientific uncertainty in the climate change estimates.
- 4.2.6 In this instance the Agency's modelling includes updated climate change allowances as shown in Appendix A and Table 1.

Table 1: 2D fluvial flood level data

1 in 20 year (mAOD)	1 in 100 year (mAOD)	1 in 100 year plus 35% climate change (mAOD)	1 in 100 year plus 70% climate change (mAOD)	1 in 1000 year (mAOD)
43.04	43.41	43.59	43.73	43.84

4.3 Flood Warning and Emergency Planning

- 4.3.1 The site is located within an Environment Agency Flood Alert Area 062FWF28Eastcote – River Pinn at Eastcote Village.
- 4.3.2 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).
- 4.3.3 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.** The various flood warning codes can be seen on Figure 4.

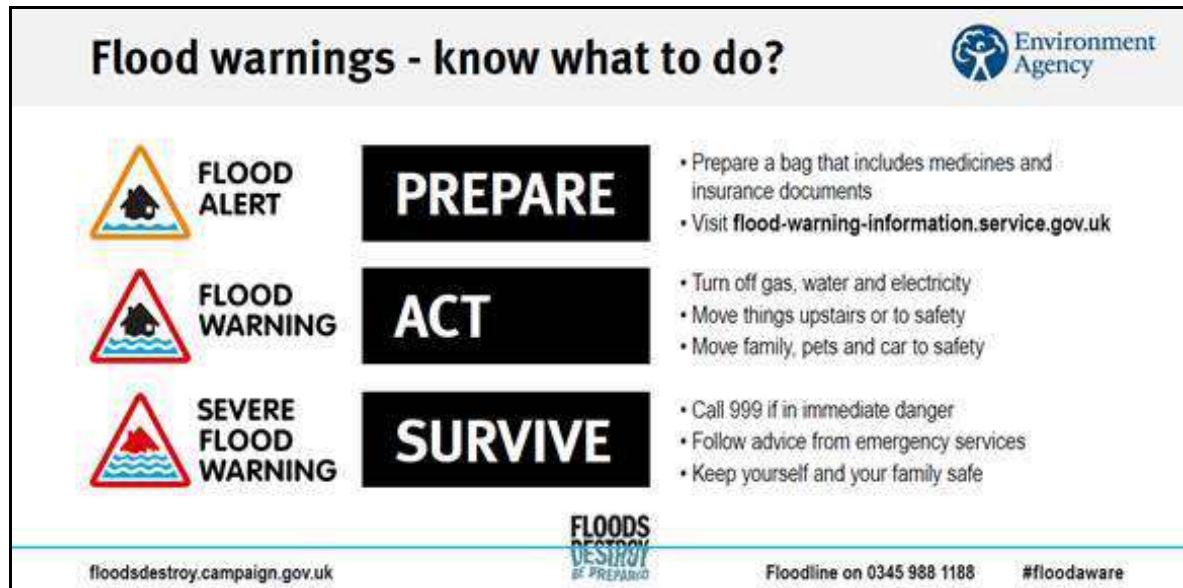


Figure 4: Flood warning codes (Source: Environment Agency)

- 4.3.4 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 FLOOD RISK

5.1 Table 2 shows the flood depth and hazard across the site.

5.2 Although a hazard rating is not provided by the Agency, in order to determine the flood hazard at the site the hazard categories outlined in Table 13.1 of *FD2320/TR2* (Figure 5 below), which is defined by the depth and velocity of the floodwater and the ability of people to evacuate once flooding occurs, has been used (assuming 0.5 m/s velocity). It should be noted that the white cells shown on Figure 5 denote a *Very low* hazard.

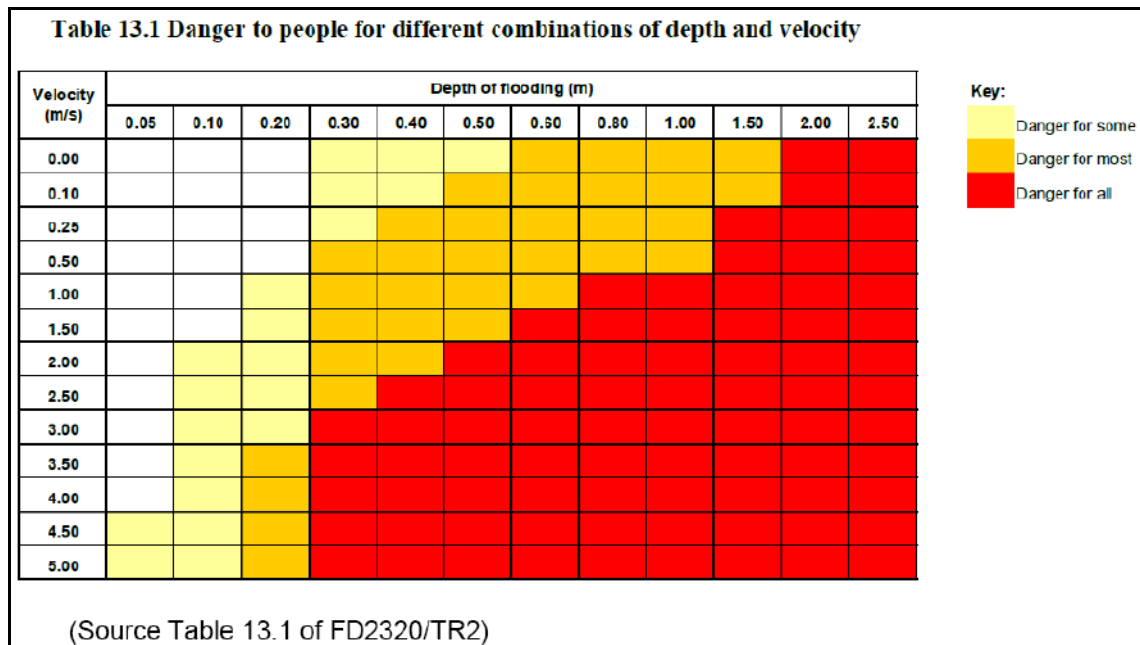


Figure 5: Hazard Classification

Table 2: Flood levels, depths and hazard at the site

	1 in 20 year	1 in 100 year	1 in 100 year plus 35% climate change	1 in 100 year plus 70% climate change	1 in 1000 year
	43.04m AOD	43.41m AOD	43.59m AOD	43.73m AOD	43.84m AOD
Flood Depth above ground floor level of 43.971m AOD (m)	0	0	0	0	0
Flood Depth above external ground level of 43.50m AOD (m)	0	0	0.09	0.23	0.34
	Very low hazard				
	Dangerous for Some				
	Dangerous for Most				
	Dangerous for All				

- 5.3 Table 2 shows that flooding across the ground floor would not occur during all modelled events thus providing safe refuge. External areas would be inundated during the present day 1 in 1000 year event and climate change (35% and 70%) 1 in 100 year event.

6. FLUVIAL 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 The Agency's data shows that the ground floor is set above all modelled flood levels thus complying with the NPPG. Flood compensation is required as discussed further in Section 7.2.

6.2 Reducing Vulnerability to the Hazard

- 6.2.1 The Agency aims to provide up to 2 hours notice before the issue of a *Flood Warning* 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.
- 6.2.2 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.
- 6.2.3 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*.
- 6.2.4 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.
- 6.2.5 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 3: Flood Event Action Plan

Environment Agency Flood Warning Code	What to do!	Evacuate?
Flood Alert (Flooding Possible. Be aware/prepared! Watch Out). 	• Monitor flood risk through media and Floodline Warnings Direct. • 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). • Check flood kit, check occupants, check pets – BE PREPARED in case the situation gets worse.	Not necessary. 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.
Flood Warning (Flooding of homes, businesses and main roads is expected. Act now!). 	• Maintain communication through Floodline Warnings Direct and the media. • Begin to implement Flood Plan. • Consider advice given from emergency services/Environment Agency. • Check insurance, Check flood kit, Check Pets. • Check alternative accommodation arrangements.	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. People who do not evacuate should reside within the building. 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.

Severe Flood Warning (Severe flooding is expected. Imminent danger to life and property. Act now!). 	• Leave site immediately if not already done so. • Take flood kit, occupants and pets with you. • Follow advice given by Emergency Services and Council.	Leave site according to advice given by Emergency Services and Council. Take flood kit, occupants and pets with you. If evacuation cannot be undertaken, people should reside within the building with <i>flood kit</i> and maintain communication with the emergency services.
Warnings no longer in force (No further flooding is expected in the area. Be careful).	• Return to site upon instruction from emergency services and assess any damage. • Contact insurance company depending on damage caused. • Beware of flood debris. • Do not touch sources of electricity. • Arrange for utilities to reconnect services. • Do not dispose of damaged property until your insurance company has agreed.	Not applicable, however site may be uninhabitable. Return to site upon instruction from emergency services as floodwater may not have receded.

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 and priority should be given to these groups.

6.4 Safe Access/Egress

6.4.1 Safe refuge is available during all flood events.

6.4.2 The information in Chapter 5 and the Agency's maps in Appendix A show that safe access/egress would be available during the climate change (35% and 70%) 1 in 100 year event.

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.



Figure 6: Preferred evacuation route for fluvial events.

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 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 ground floor is set above the climate change 1 in 100 year event and 1 in 1000 year event. Therefore, the ABI's requirement of protection during a 1 in 100 year event will be met 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, silt, sand and gravel.

Groundwater Flooding Potential at the Site

- 7.1.3 There have been no recorded groundwater flood events across the site between 2000 and 2003, as indicated by the Jacobs study. Figure 10.1 of the SWMP and the 2018 SFRA mapping shows that there have been no recorded groundwater flooding incidents across the site and that there is a <25% susceptibility to groundwater flooding.
- 7.1.4 It is considered that there is an overall low groundwater flooding risk across the site, particularly due to the low infiltration capacity of the soils and building footprint which will be confining the water table.

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 2018 SFRA mapping shows that the site is not located within a Critical Drainage Area (CDA). Figure 9.1 of the SWMP and the 2018 SFRA indicates on the interactive mapping that the site is located in an area where there have been a low number of previous sewer flood events.
- 7.2.3 The site did not form part of the LLFA Section 19 Flood Investigation Report dated 2014 and 2016.
- 7.2.4 The Agency's Surface Water Flooding Map (Figure 7) and the 2018 SFRA mapping indicates that there is a low surface water flood risk across the site (i.e. between a 1 in 1000 year event and 1 in 100 year event).
- 7.2.5 It is generally accepted that the low risk flood event (i.e. between 1 in 1000 years and 1 in 100 years) on the Agency's map is used as a substitute for the climate change 1 in 100 year event to provide a worst-case scenario.
- 7.2.6 Figure 8 shows that the flood depth across the site during worst-case low risk events would be between 0.3m and 0.9m, and the velocity would be over 0.25 m/s (Figure 9). The flow path is in a south westerly direction as shown on the Agency's map.

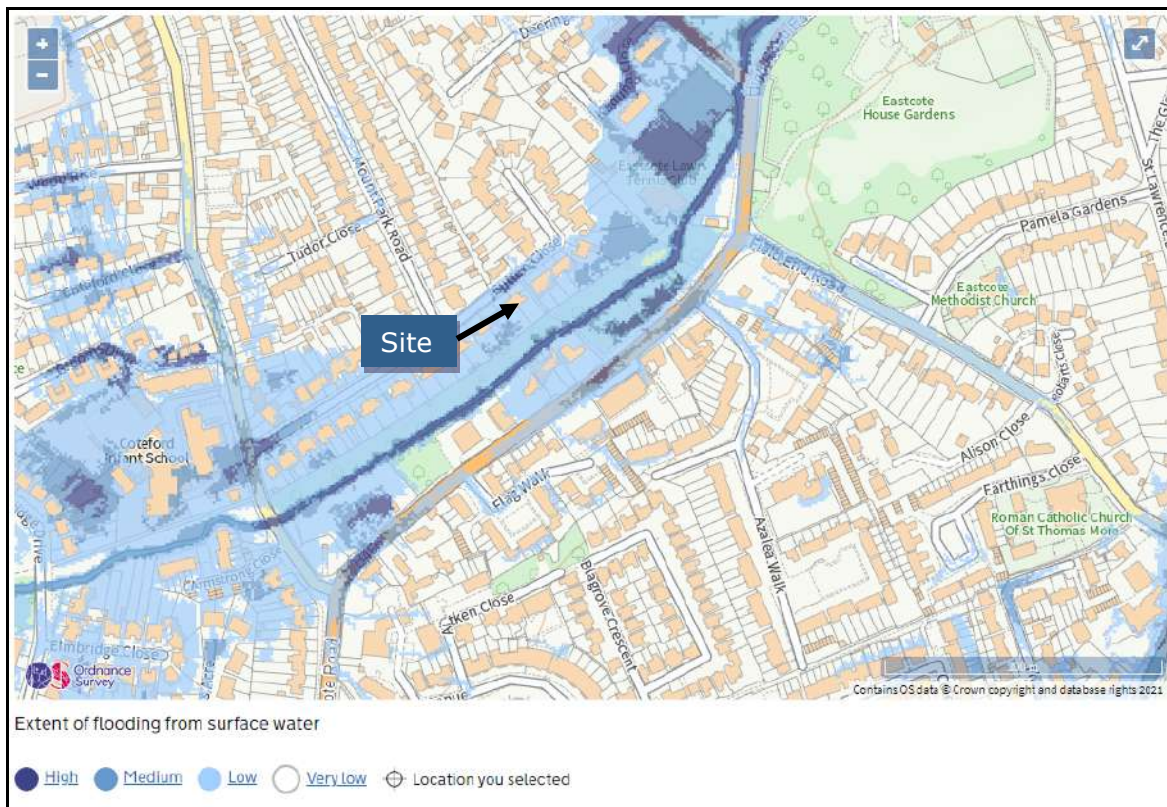


Figure 7: Environment Agency Surface Water Flooding Map (Source: Environment Agency, 2021)

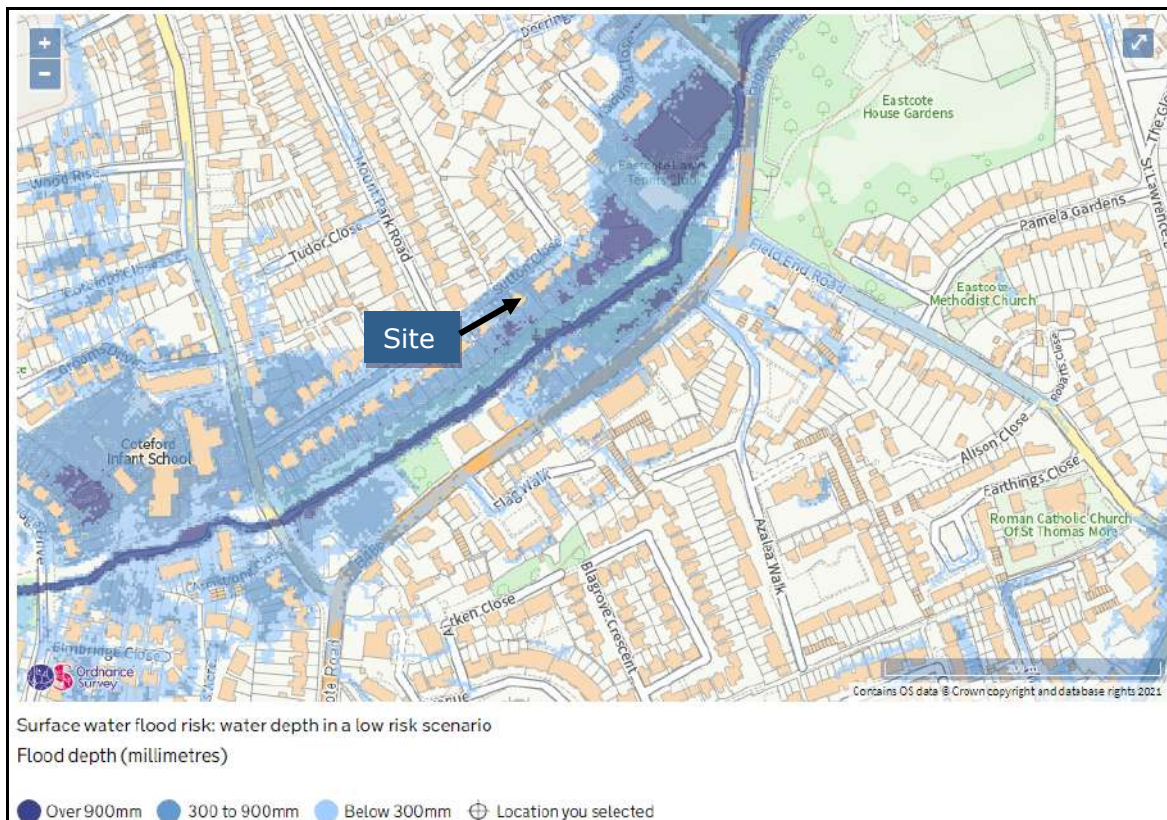


Figure 8: Environment Agency Surface Water Flooding Map during low risk events (Source: Environment Agency, 2021)

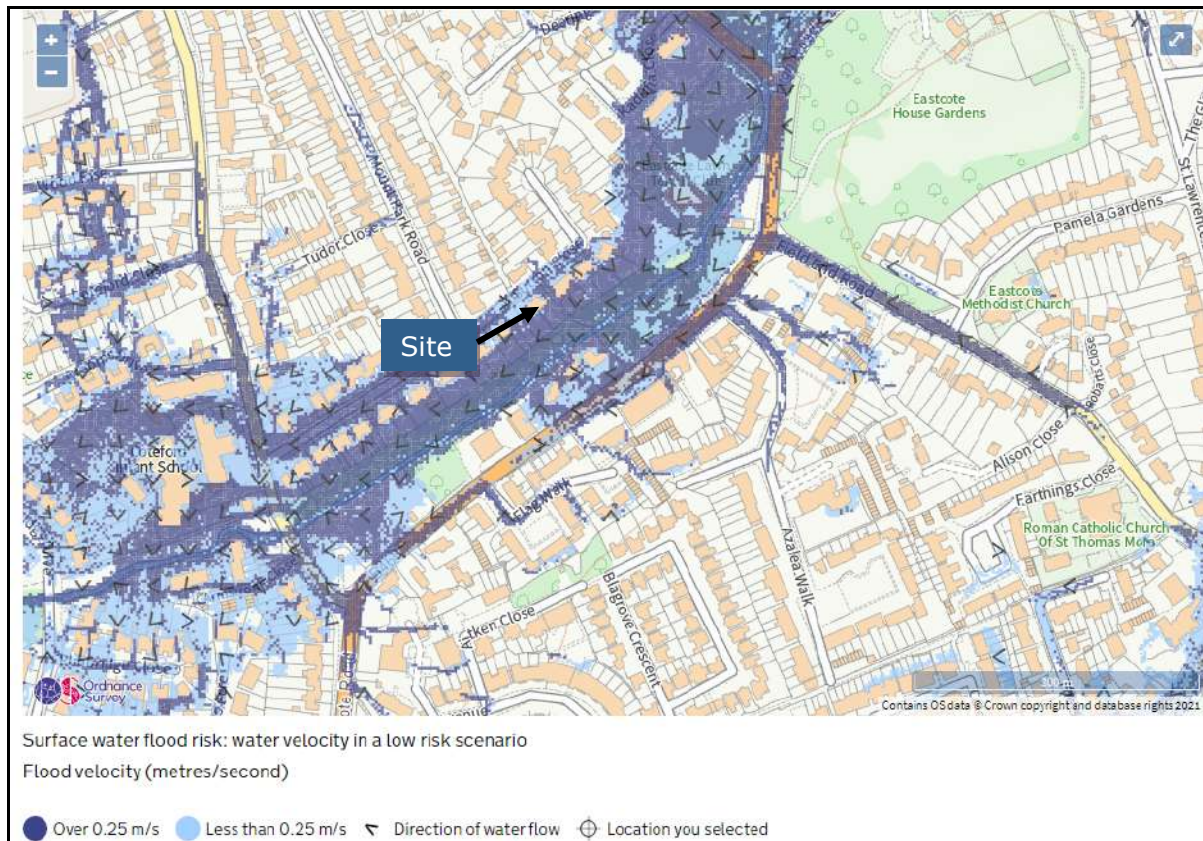


Figure 9: Environment Agency Surface Water Flooding Velocity Map during low risk events (Source: Environment Agency, 2021)

- 7.2.7 Further more detailed data has been obtained via the Data.gov.uk site (<https://environment.data.gov.uk/DefraDataDownload/?Mode=rofsw>). The flood extent, depth and hazard GIS *shape file* was downloaded from Data.gov.uk (for tile TQ_18).
- 7.2.8 The depth across the external area intended for the proposed extension is confirmed to be 0.30m-0.60m. This is also shown on the 2018 SFRA via the interactive mapping.
- 7.2.9 Therefore, during the low risk event (i.e. between 1 in 1000 years and 1 in 100 years/climate change 1 in 100 year event) the flood level would be 44.10m AOD.
- 7.2.10 It is understood that the floor level of the extension will be set the same as the dwelling and at 43.971m AOD. This will reduce the internal flood depth during low risk events to 0.129m. Mitigation measures have been developed on this basis.
- 7.2.11 The flood hazard is calculated based on different combinations of floodwater depth and velocity, and subsequently by using the hazard equation as cited in the DEFRA/EA R&D Document *Framework and guidance for assessing and managing flood risk for new development Phase 2 (FD2320/TR2)*. The numerical hazard rating is then categorised into four degrees of flood hazard in accordance with *FD2320/TR2*, shown on Table 4 overleaf.
- 7.2.12 The hazard rating across the area intended for the extension has been extracted from the surface water hazard map which was downloaded from Data.gov.uk and is identified as being 1.25-2.00 during worst-case low risk events.

7.2.13 Therefore, according to Table 4 below the hazard to people would therefore be *Dangerous for Most*.

Table 4: Hazard to people categories (based on FD2320/TR2)

Hazard Rating	Degree of Flood Hazard	Description
< 0.75	Very low hazard	Caution "Flood zone with shallow flowing water or deep standing water"
0.75 – 1.25	Danger for Some	Dangerous for some (i.e. children) "Danger: Flood zone with deep or fast flowing water"
1.25 – 2.0	Danger for Most	Dangerous for most people (i.e. general public) "Danger: Flood zone with deep fast flowing water"
> 2.0	Danger for All	Dangerous for all "Extreme danger: flood zone with deep fast flowing water"

Surface Water Flood Risk Mitigation

7.2.14 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.

7.2.15 It has been established that the low risk (1000yr/100yr plus climate change) surface water flood level is approximately 44.10m AOD.

7.2.16 The ground floor level of the extension will be set the same as the existing dwelling and at 43.971m AOD. It is not practical to set the proposed floor level above the flood level.

7.2.17 The DEFRA/EA document entitled *Improving the Flood Performance of New Buildings*, dated 2007, suggests that there is some damage to buildings if the depth differential between the outside and inside water levels exceeds 0.6m. Severe damage can occur if this reaches 1m even if the buildings are flood proofed.

7.2.18 Therefore, as the internal differential depth of up to 0.129m is within safe limits, it is proposed that floodwater is prevented from entering the property by implementing a *Water Exclusion Strategy*.

Water Exclusion Strategy

7.2.19 According to the ODPM guidance document *Preparing for Floods* and Figure 4.1 of the aforementioned DEFRA/EA document, a *Water Exclusion Strategy* in this instance aims to prevent floodwater from entering the building by using flood resistant techniques (dry-proofing) up to the flood level of 44.10m AOD (i.e. 0.129m above the ground floor).

Floors

7.2.20 A damp-proof membrane should be included within the floor construction and suitable floor finished such as ceramic or concrete based floor tiles are recommended.

Walls

- 7.2.21 Mortar joints should be thoroughly filled and water-resistant paints should be used across the external walls to reduce water penetration.

Doors and Windows

- 7.2.22 Moveable flood barriers should be installed across doorways and windows up to 0.129m above ground floor level. Alternatively, flood resilient doors could be used to prevent water entry and less reliance on human implementation during the event
- 7.2.23 Sealed PVC internal and external framed doors could be used rather than timber doors which are not fully resistant.

Services

- 7.2.24 It will be practical to raise electrical sockets above the flood level (i.e. 0.129m higher than ground floor level), however, the mains supply of electric should be turned off in the event of a flood. Wiring for communications should also be insulated to prevent damage.
- 7.2.25 Closed cell insulation should be used for pipes below the flood level. Non-return valves are recommended to prevent back-flow of foul water.

Reducing Vulnerability to the Hazard

- 7.2.26 Flood Warnings for surface water flooding do not currently exist, however, the occupants should sign up to the Met Office weather warning system <https://www.metoffice.gov.uk/public/weather/warnings> and safe refuge is available at all times.
- 7.2.27 There are additional ways in which the residents can reduce the risk themselves. 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*.

Table 5: Flood Event Action Plan

Alert	Level Definition	Action	Responsibility
Yellow: be aware	Yellow warnings can be issued for a range of weather situations.	Monitor flood risk through media.	Occupants
	Many are issued when it is likely that the weather will cause some low level impacts, including some disruption to travel in a few places.	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).	
	Other yellow warnings are issued when the weather	Check flood kit, check occupants, check pets –	

	could bring much more severe impacts to many people but the certainty of those impacts occurring is much lower. It is important to read the content of yellow warnings to determine which weather situation is being covered by the yellow warning.	BE PREPARED in case the situation gets worse.	
Amber: be prepared	There is an increased likelihood of impacts from severe weather, which could potentially disrupt your works plans. This means there is the possibility of travel delays, road and rail closures, power cuts and the potential risk to life and property.	Monitor weather through media and local observations. Consider advice given from authorities including Council, Environment Agency and emergency services. Begin to implement Flood Plan. Check insurance, Check flood kit, Check Pets.	Occupants
Red: Take Action	Dangerous weather is expected and, if you haven't already done so, you should take action now to keep yourself and your works force safe from the impact of the severe weather.	Follow advice given by Emergency Services, Environment Agency and Council. Maintain communication through the media.	Occupants

	It is very likely that there will be a risk to life, with substantial disruption to travel, energy supplies and possibly widespread. You should avoid travelling, where possible, and follow the advice of the emergency services and local authorities.	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. People who do not evacuate should reside across building.	
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Safe Access/Egress

7.2.28 The EA surface water flood map on Figure 7 shows that Sutton Close would be affected during low to high surface water flood events.

7.2.29 By reviewing the flood hazard GIS *shape file* downloaded from Data.gov.uk in the same way as above, the hazard to people leaving the site via the evacuation route on Figure 6 above during the peak of the low risk event could be *Dangerous for Most* for 23m, then *Dangerous for Some* for 15m then *Very low* thereafter.

7.2.30 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.

Flood Displacement

7.2.31 The total area of the extension equates to 61.30 sq m.

7.2.32 During the fluvial design climate change (35%) 1 in 100 year event, the external flood depth across the area intended for the extension is 0.09m. Therefore, the flood displacement is 5.517 cu m.

7.2.32 During the low risk surface water flood event the external flood depth across the area intended for the extension is up to 0.60m. Therefore, the flood displacement is 36.78 cu m.

7.2.33 It is evident that the surface water flood volume is greater than the fluvial flood volume across the area intended for the extension.

7.2.34 Level-for-level compensation is not viable and therefore it is proposed that in order to provide sufficient flood compensation for the lost volume of up to 36.78 cu m, part of the rear garden of 177 sq m would need to be regraded by 0.21m as shown on Drawing Number SD1972(P)07.

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 at risk from reservoirs. The maps provide details on how deep the floodwater could reach at the site if failure of the reservoir occurred. This depth has been estimated to be <0.3m.
- 7.3.3 However, as the information associated with the maps suggest, it is considered that reservoir flooding is extremely unlikely to happen and such features are regularly inspected by qualified engineers under the Reservoir Act 1975.

8. CONCLUSIONS

- The site is located within Flood Zone 3a and 2.
- The design climate change (35%) 1 in 100 year flood extent is 43.59m AOD. The climate change (70%) 1 in 100 year flood level is 43.73m AOD. The extreme 1 in 1000 year flood level is 43.84m AOD.
- The ground floor is set at 43.971m AOD and higher than all modelled fluvial flood levels thus providing safe refuge.
- 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*.
- There is a low groundwater flood risk and low risk from reservoirs.
- There is a low to high surface water flood risk. A more detailed analysis of the flood risk has been undertaken using the Data.gov.uk GIS data. The low risk (1000yr/100yr plus climate change) flood depth across the area intended for the extension will be between 0.30m and 0.60m. The flood level has been estimated to be 44.10m AOD.
- The ground floor will be affected to a flood depth of up to 0.129m during the worst-case low risk event and the risk will be mitigated by the proposed *Water Exclusion Strategy*.
- Safe access/egress can be achieved during the peak of the fluvial design event but not during the low risk surface water flood event.
- The proposals will result in flood displacement during the design fluvial event and low risk surface water flood event. Flood compensation will be provided by lowering 177 sq m of the rear garden area by 0.21m.

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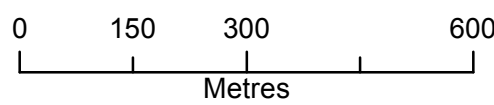
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APPENDIX A – CORRESPONDENCE

Flood Map for Planning centred on: 29 Sutton Close, Ruislip, HA5 2JX - 27/01/2020 - HNL 158082 AS



Environment Agency
Alchemy,
Bessemer Road,
Welwyn Garden City,
Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location

Flood Map for Planning

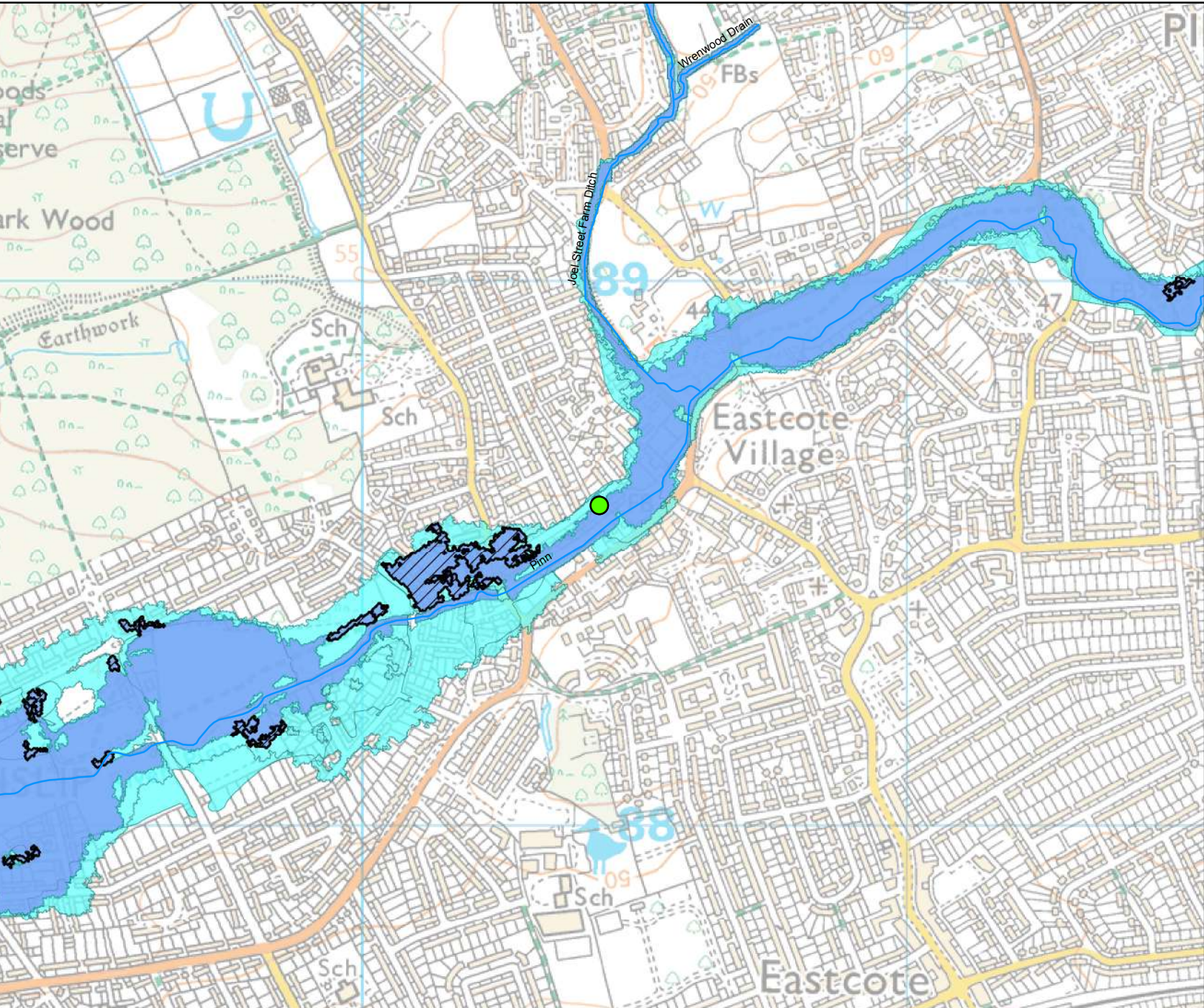
- Flood Storage Area
- Areas Benefiting from Flood Defences
- Flood Zone 3
- Flood Zone 2

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.

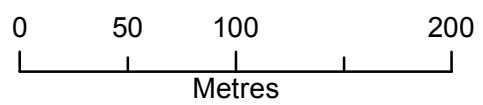
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Legend

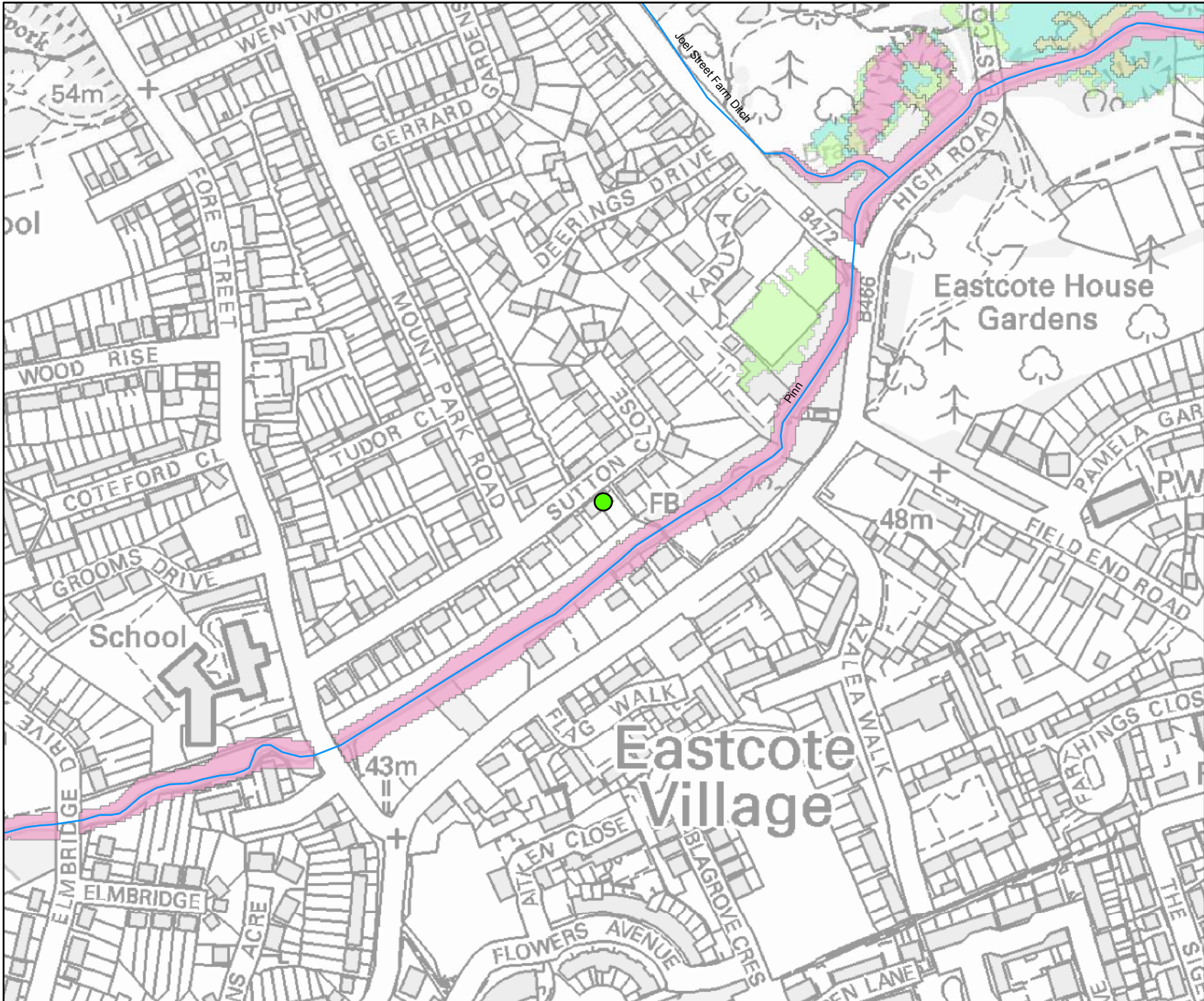
- Main Rivers
- Site location

Defended Flood Outlines

- 1 in 2 year (50%) Defended
- 1 in 5 year (20%) Defended
- 1 in 10 year (10%) Defended
- 1 in 20 year (5%) Defended

The data in this map has been extracted from the River Pinn Mapping Study (JBA, 2015). 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. Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence. <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

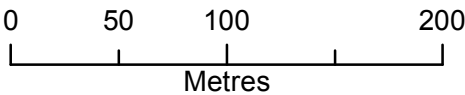
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Legend

- Main Rivers
- Site location

Defended Flood Outlines

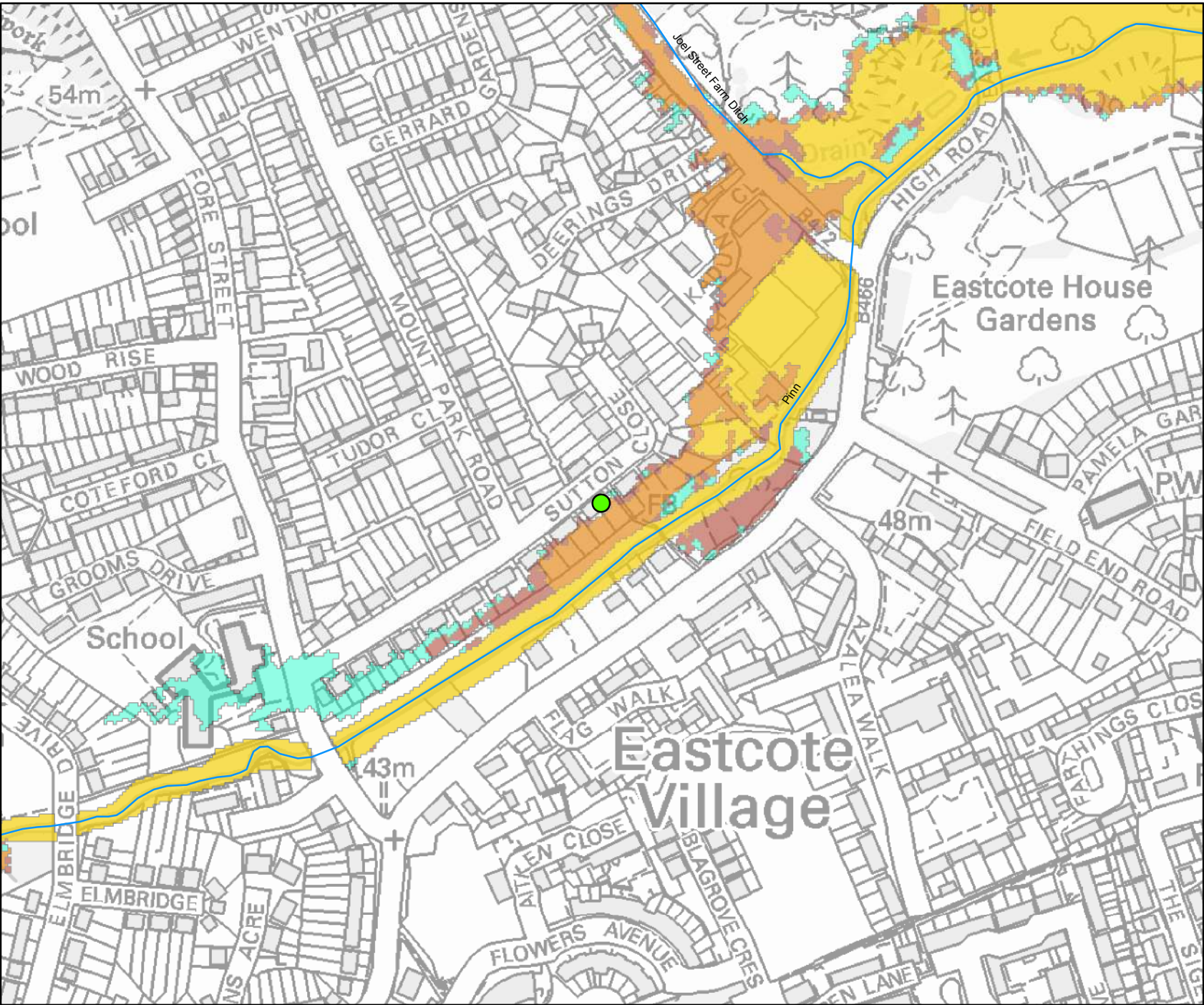
- 1 in 30 year (3.33%) Defended
- 1 in 50 year (2%) Defended
- 1 in 75 year (1.33%) Defended
- 1 in 100 year (1%) Defended

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<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

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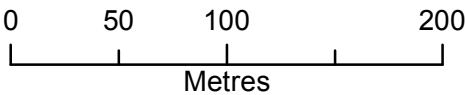


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Legend

- Main Rivers
- Site location

Defended Flood Outlines

- 1 in 100 year + 20% (*CC) Defended
- 1 in 100 year + 25% (*CC) Defended
- 1 in 100 year + 35% (*CC) Defended
- 1 in 100 year + 70% (*CC) Defended

The data in this map has been extracted from the River Pinn Mapping Study (JBA, 2015). 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.

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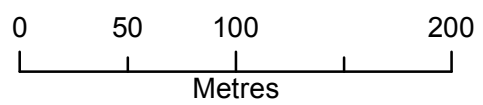
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Legend

- Main Rivers
- Site location

Defended Flood Outlines

- 1 in 250 year (0.4%) Defended
- 1 in 1000 year (0.1%) Defended

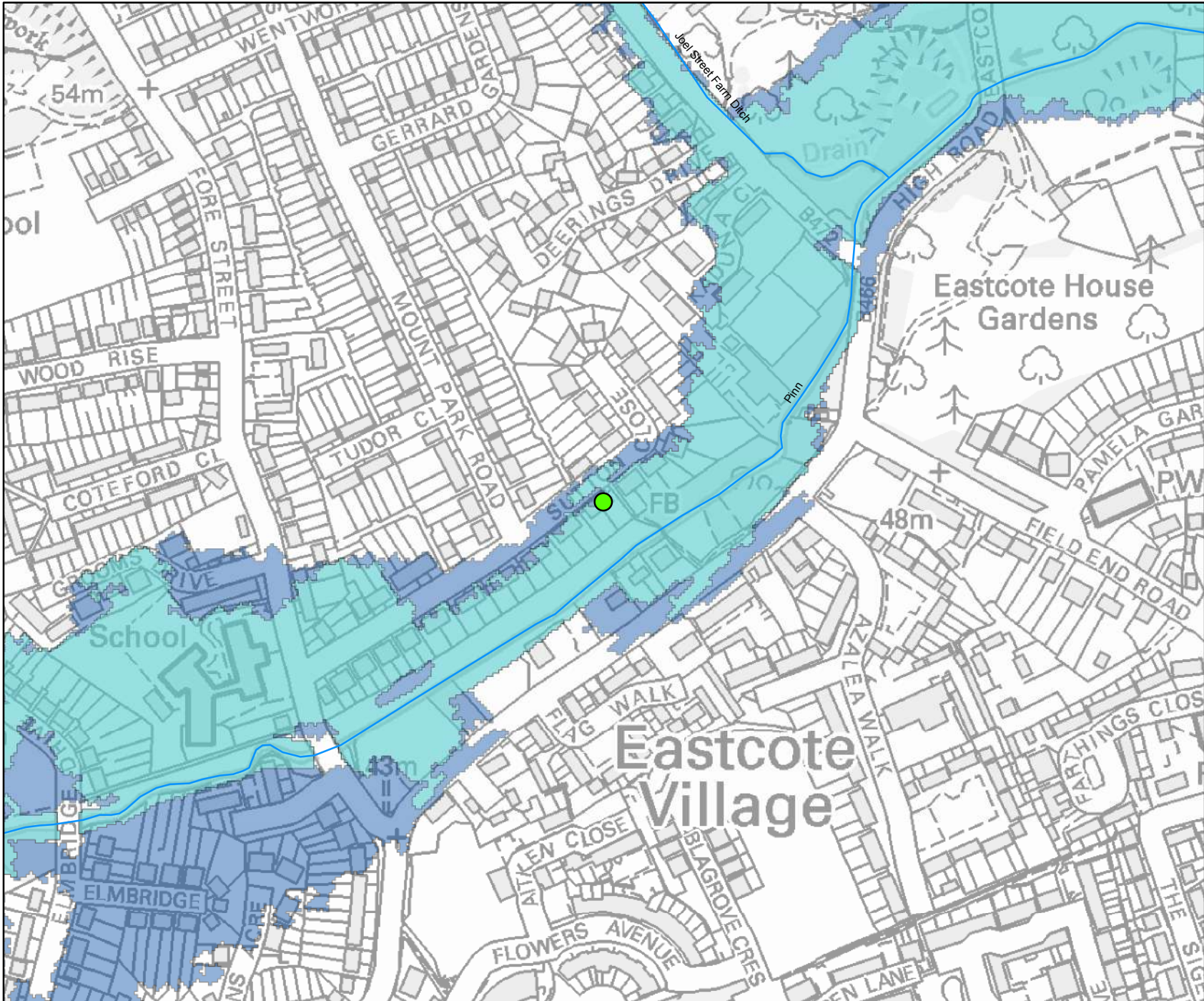
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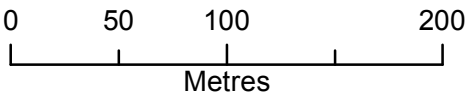
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Legend

- Main Rivers
- Site location

1D Node Results

- Nodes

The data in this map has been extracted from the River Pinn Mapping Study (JBA, 2015). 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.

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

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Environment Agency ref: HNL 158082 AS

The following information has been extracted from the River Pinn Mapping Study (JBA, 2015)

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Caution:

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 across the entire catchment.

All flood levels are given in metres Above Ordnance Datum (mAOD)

All flows are given in cubic metres per second (cumecs)

MODELLED FLOOD LEVEL

Node Label	Easting	Northing	2 yr	Return Period												
				5 yr	10 yr	20 yr	30 yr	50 yr	75 yr	100 yr	100yr + 20%	100yr + 25%	100yr + 35%	100yr + 70%	250 yr	1000yr
P329	510779	188893	43.21	43.47	43.58	43.69	43.78	43.89	43.97	44.02	44.12	44.14	44.18	44.31	44.18	44.43
P329a	510767	188888	43.19	43.45	43.56	43.67	43.77	43.88	43.96	44.02	44.11	44.14	44.18	44.31	44.17	44.42
P328	510695	188858	43.13	43.38	43.50	43.62	43.72	43.83	43.92	43.98	44.08	44.10	44.15	44.29	44.14	44.41
P325	510682	188852	43.11	43.36	43.47	43.58	43.67	43.78	43.86	43.91	44.01	44.03	44.08	44.23	44.07	44.35
P324	510628	188802	43.07	43.32	43.44	43.55	43.65	43.76	43.84	43.89	43.98	44.00	44.05	44.20	44.04	44.33
P324D	510619	188794	43.07	43.32	43.44	43.55	43.65	43.76	43.84	43.89	43.98	44.00	44.05	44.20	44.04	44.33
P323	510600	188755	42.98	43.24	43.35	43.47	43.57	43.68	43.76	43.81	43.89	43.90	43.94	44.07	43.93	44.21
P320	510596	188742	42.98	43.23	43.34	43.46	43.56	43.66	43.74	43.78	43.85	43.87	43.90	44.01	43.89	44.13
P320In1	510573	188665	42.86	43.10	43.22	43.34	43.43	43.54	43.63	43.68	43.76	43.78	43.81	43.92	43.80	44.03
P319	510553	188624	42.76	43.00	43.12	43.24	43.33	43.43	43.51	43.58	43.68	43.70	43.75	43.87	43.74	43.98
P319In1	510528	188605	42.68	42.94	43.05	43.16	43.26	43.36	43.44	43.51	43.64	43.66	43.71	43.85	43.70	43.95
P318	510477	188569	42.61	42.87	42.98	43.09	43.18	43.28	43.37	43.45	43.58	43.61	43.67	43.82	43.65	43.93
P316	510471	188566	42.59	42.83	42.94	43.05	43.12	43.22	43.31	43.38	43.51	43.54	43.59	43.74	43.58	43.85
P315	510428	188533	42.50	42.74	42.85	42.96	43.04	43.14	43.22	43.30	43.43	43.46	43.52	43.67	43.51	43.77
P314	510356	188485	42.40	42.63	42.74	42.84	42.92	43.01	43.09	43.16	43.29	43.31	43.38	43.52	43.37	43.61
P314In1	510312	188456	42.33	42.56	42.66	42.76	42.83	42.92	43.00	43.07	43.19	43.22	43.30	43.46	43.29	43.54
P313	510266	188427	42.28	42.50	42.59	42.69	42.76	42.85	42.92	42.99	43.11	43.14	43.23	43.40	43.21	43.50
P310	510249	188423	42.27	42.49	42.59	42.68	42.75	42.83	42.91	42.97	43.08	43.11	43.19	43.36	43.18	43.44
P309	510210	188419	42.16	42.37	42.47	42.56	42.63	42.71	42.78	42.85	42.95	42.98	43.06	43.25	43.05	43.34
P308	510180	188409	42.11	42.32	42.41	42.51	42.57	42.65	42.72	42.78	42.87	42.90	42.98	43.18	42.96	43.28
P307	510143	188398	42.08	42.29	42.39	42.48	42.55	42.62	42.69	42.75	42.85	42.87	42.94	43.11	42.93	43.21
P306	510098	188378	41.92	42.12	42.21	42.30	42.36	42.43	42.50	42.55	42.64	42.66	42.71	42.84	42.70	42.93
P303	510084	188377	41.91	42.10	42.19	42.28	42.34	42.41	42.47	42.52	42.59	42.61	42.66	42.75	42.65	42.81
JS1.001	510553	188814	43.19	43.38	43.48	43.60	43.68	43.79	43.86	43.91	44.00	44.02	44.07	44.21	44.06	44.34
JS1.001I-1	510571	188800	43.10	43.34	43.46	43.58	43.67	43.78	43.86	43.91	44.01	44.03	44.07	44.22	44.07	44.34
JS1.001ext	510617	188801	43.07	43.32	43.44	43.55	43.65	43.76	43.84	43.89	43.98	44.00	44.05	44.20	44.04	44.33

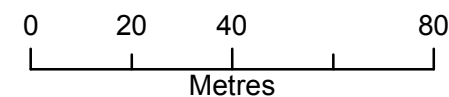
MODELLED FLOWS

				Return Period												
Node Label	Easting	Northing	2 yr	5 yr	10 yr	20 yr	30 yr	50 yr	75 yr	100 yr	100yr + 20%	100yr + 25%	100yr + 35%	100yr + 70%	250 yr	1000yr
P329	510779	188893	3.94	5.17	5.50	5.52	5.45	5.44	5.43	5.43	5.43	5.41	5.42	5.42	5.43	5.42
P329a	510767	188888	3.94	5.17	5.50	5.52	5.45	5.44	5.43	5.43	5.43	5.41	5.42	5.42	5.43	5.42
P328	510695	188858	3.94	5.18	5.86	6.61	7.22	7.88	8.15	8.31	8.53	8.54	8.55	8.67	8.54	8.68
P325	510682	188852	3.94	5.18	5.86	6.61	7.22	7.88	8.15	8.31	8.53	8.54	8.55	8.67	8.54	8.68
P324	510628	188802	3.96	5.04	5.53	6.02	6.48	7.04	7.52	7.98	8.89	9.11	9.42	9.86	9.38	9.96
P324D	510619	188794	4.89	6.53	7.36	8.32	8.94	9.96	10.69	11.50	13.06	13.35	13.82	14.24	13.76	14.16
P323	510600	188755	4.89	6.53	7.36	8.32	8.94	9.96	10.70	11.55	13.43	13.86	14.78	17.36	14.63	18.57
P320	510596	188742	4.89	6.53	7.36	8.32	8.94	9.96	10.70	11.55	13.43	13.86	14.78	17.36	14.63	18.57
P320In1	510573	188665	4.89	6.53	7.36	8.21	8.89	9.65	9.84	10.22	11.24	11.46	12.00	13.93	11.91	15.98
P319	510553	188624	4.89	6.53	7.36	8.21	8.93	9.80	10.07	10.40	10.78	10.81	10.99	12.03	10.95	14.01
P319In1	510528	188605	4.89	6.52	7.36	8.21	8.93	9.80	9.99	10.12	10.25	10.28	10.36	10.89	10.32	12.88
P318	510477	188569	4.89	6.52	7.36	8.21	8.93	9.80	10.06	10.47	11.37	11.52	11.83	12.15	11.79	12.84
P316	510471	188566	4.89	6.52	7.36	8.21	8.93	9.80	10.06	10.47	11.37	11.52	11.83	12.15	11.79	12.84
P315	510428	188533	4.89	6.52	7.36	8.21	8.93	9.84	10.64	11.31	12.40	12.52	12.88	14.59	12.83	17.11
P314	510356	188485	4.89	6.52	7.36	8.21	8.93	9.84	10.71	11.53	12.95	13.21	13.63	15.33	13.59	18.17
P314In1	510312	188456	5.02	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.38	13.65	14.09	14.44	14.04	16.05
P313	510266	188427	5.03	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.38	13.66	14.15	14.88	14.08	15.10
P310	510249	188423	5.03	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.38	13.66	14.15	14.88	14.08	15.10
P309	510210	188419	5.02	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.39	13.71	14.31	15.48	14.22	17.12
P308	510180	188409	5.02	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.39	13.72	14.55	16.20	14.41	17.64
P307	510143	188398	5.02	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.39	13.81	15.01	17.48	14.79	18.86
P306	510098	188378	5.03	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.39	13.81	15.00	18.17	14.80	20.38
P303	510084	188377	5.03	6.72	7.59	8.50	9.21	10.16	11.05	11.89	13.39	13.81	15.00	18.17	14.80	20.38
JS1.001	510553	188814	1.28	1.74	2.12	2.52	2.74	2.83	2.86	2.88	2.93	2.94	2.96	3.02	2.95	3.05
JS1.001I-1	510571	188800	1.27	1.74	2.11	2.50	2.74	2.85	2.96	3.08	3.35	3.41	3.54	3.85	3.46	3.98
JS1.001ext	510617	188801	1.27	1.72	2.13	2.62	2.91	3.22	3.47	3.71	4.22	4.28	4.42	4.72	4.39	4.87

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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 2 year (50%) Defended

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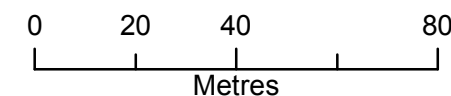
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 5 year (20%) Defended

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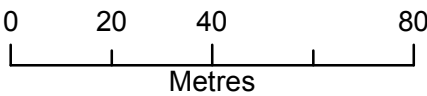
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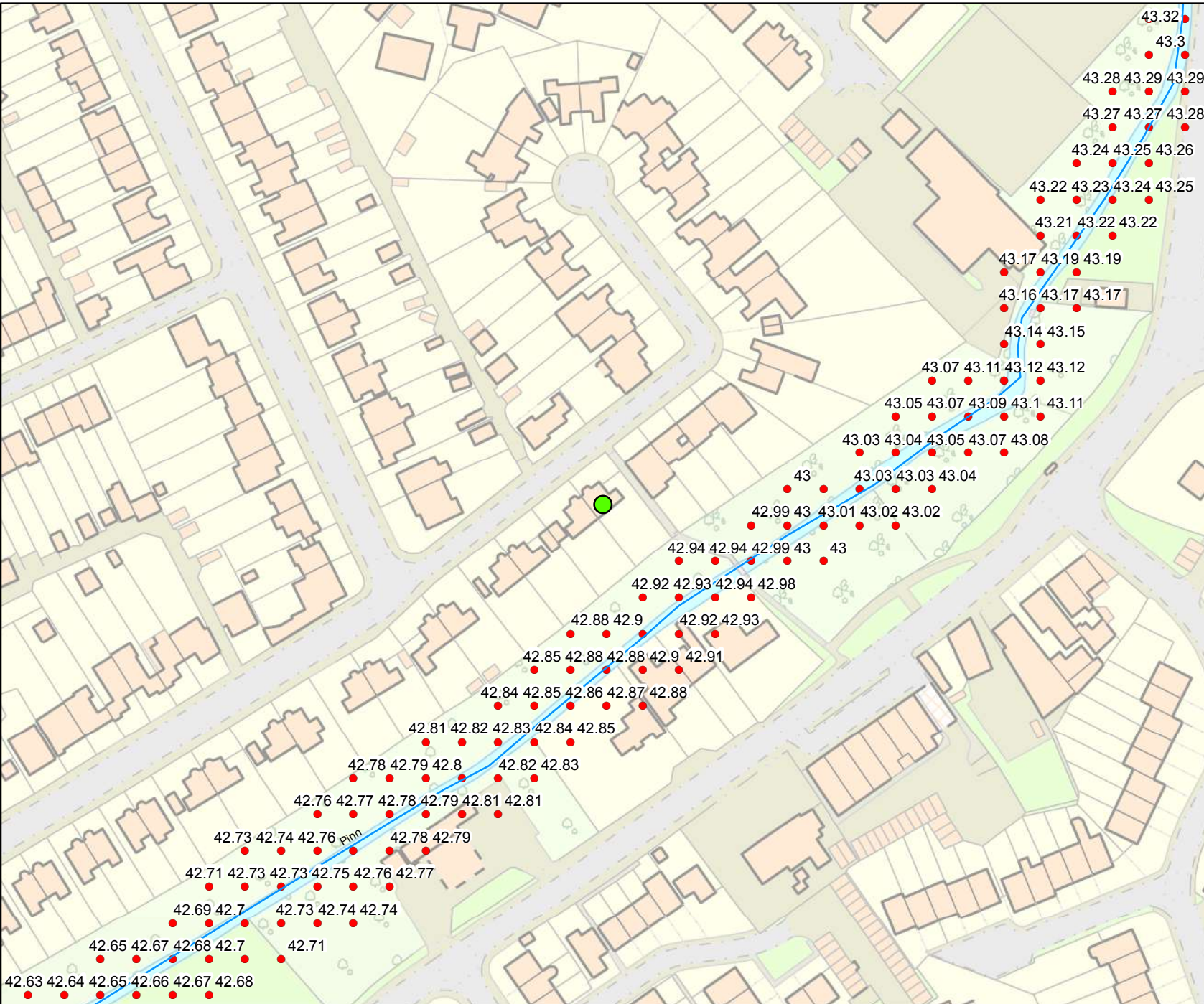
- Main Rivers
- Site location

2D Node Results: Heights

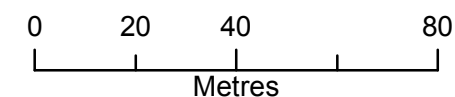
- 1 in 10 year (10%) Defended

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Legend

— Main Rivers

 Site location

2D Node Results: Heights

- 1 in 20 year (5%) Defended

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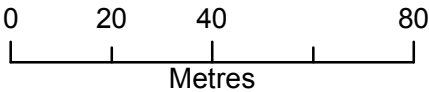
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 30 year (3.33%) Defended

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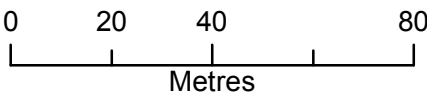
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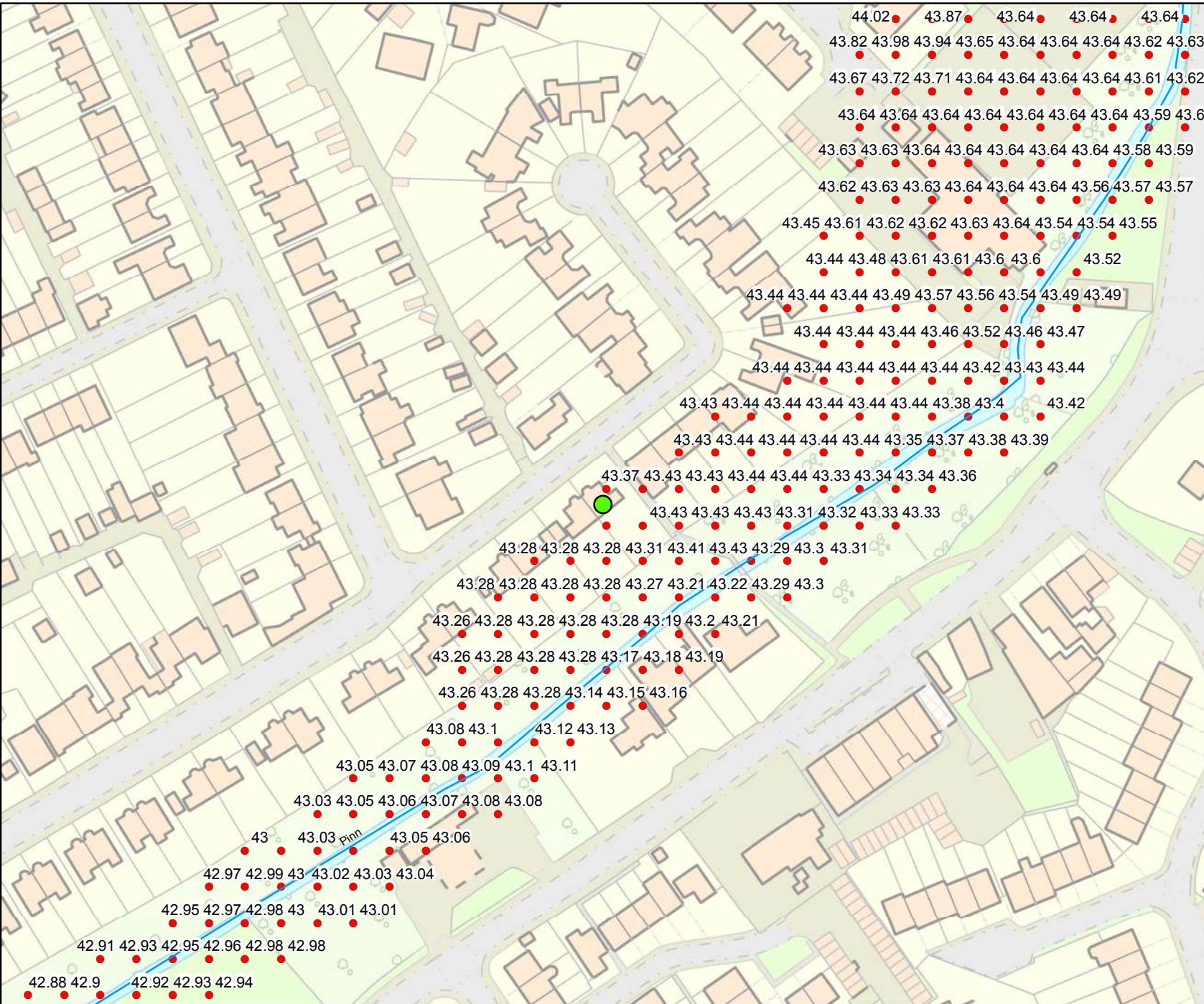
- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 50 year (2%) Defended

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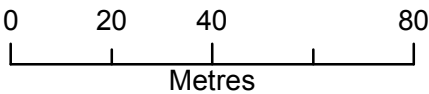
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 75 year (1.33%) Defended

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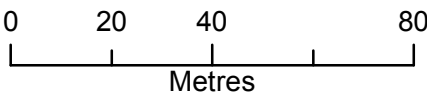
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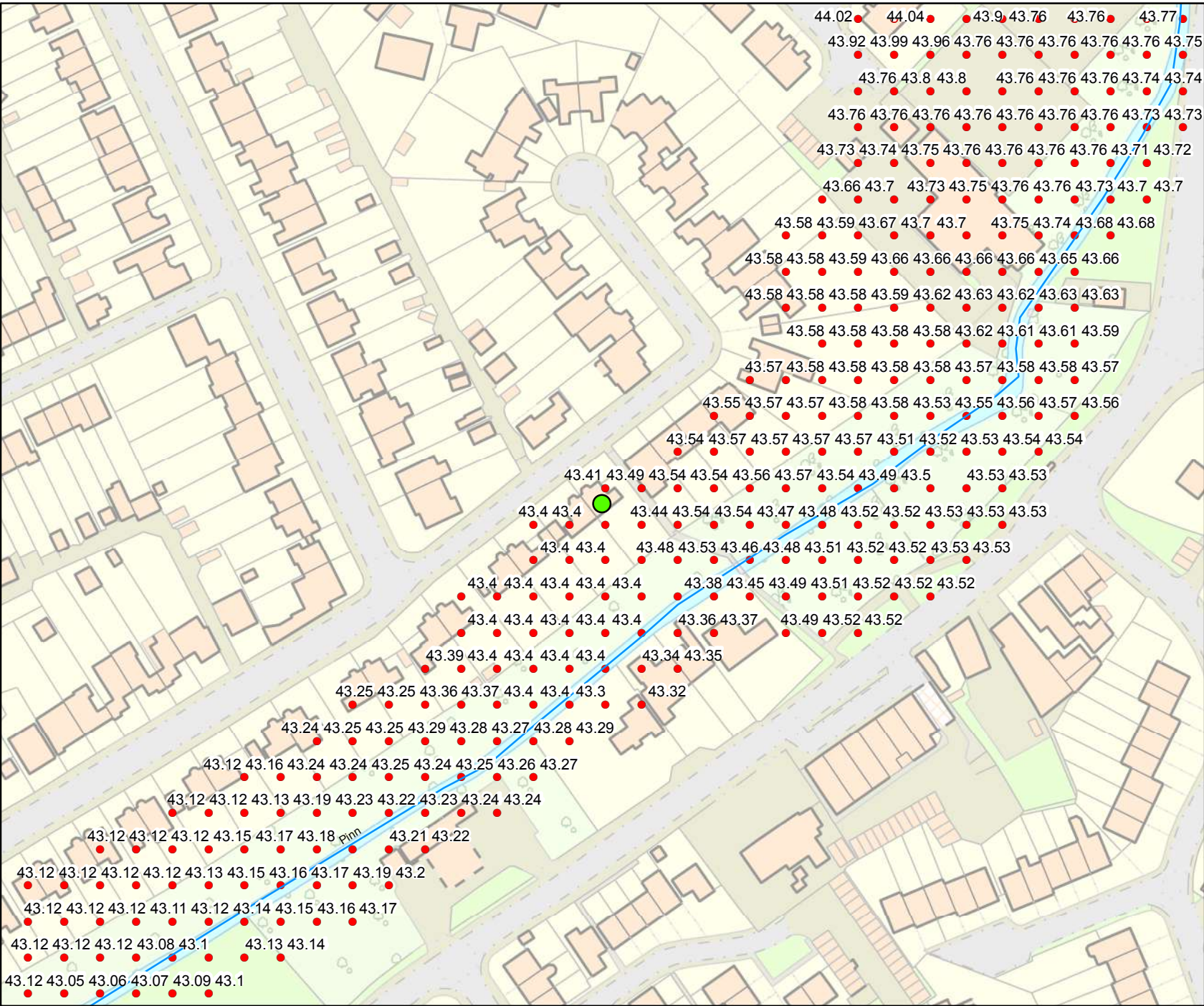
- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 year (1%) Defended

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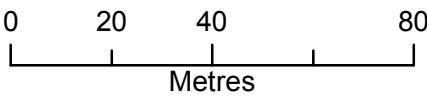


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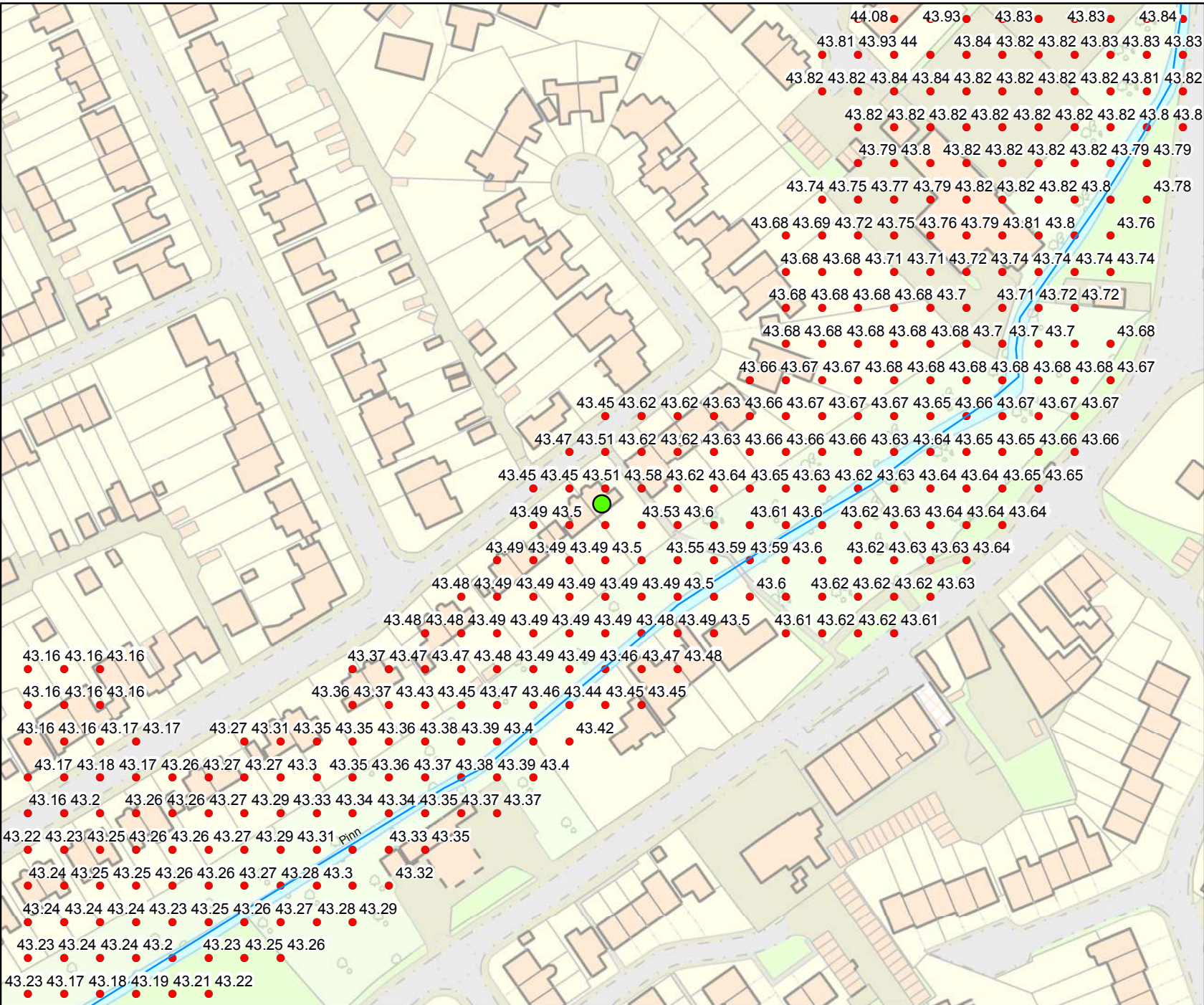
- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 year + 20% (*CC) Defended

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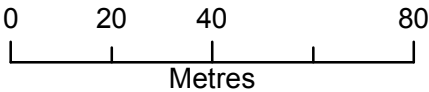
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- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 year + 25% (*CC) Defended

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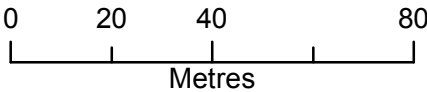
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- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 year + 35% (*CC) Defended

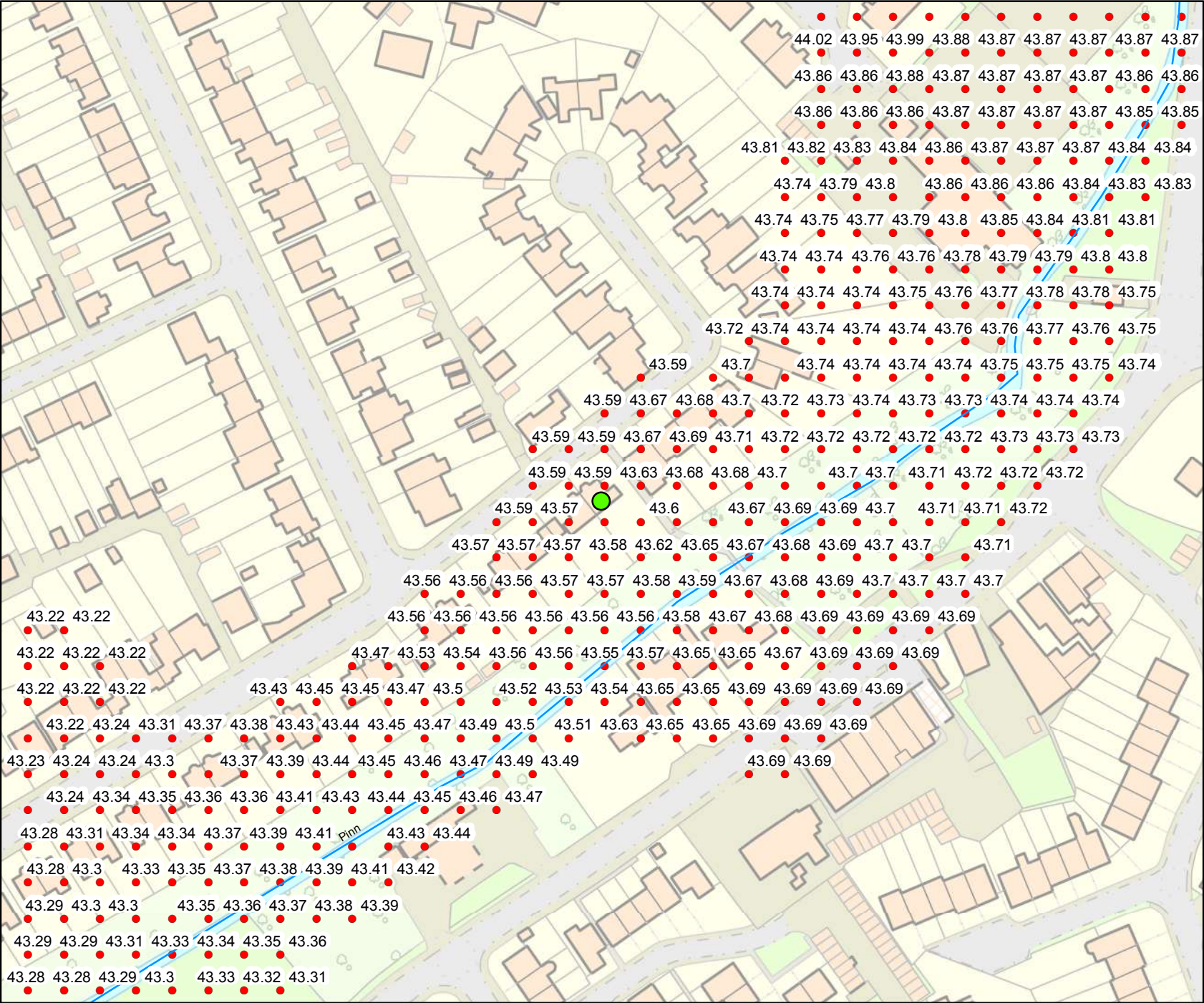
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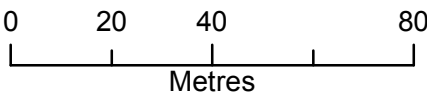


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- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 year + 70% (*CC) Defended

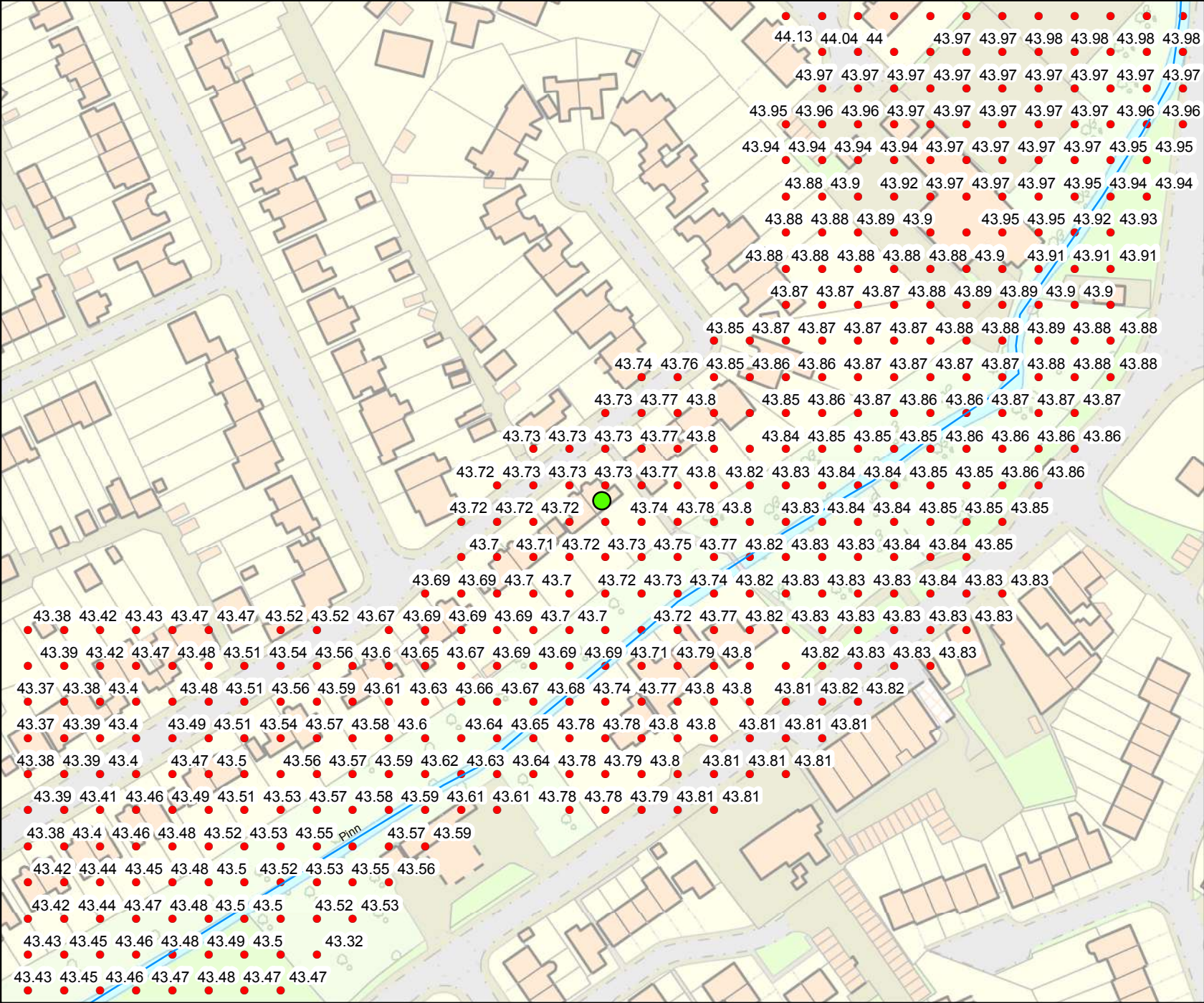
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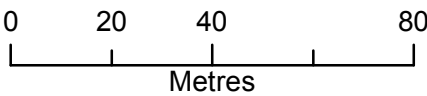


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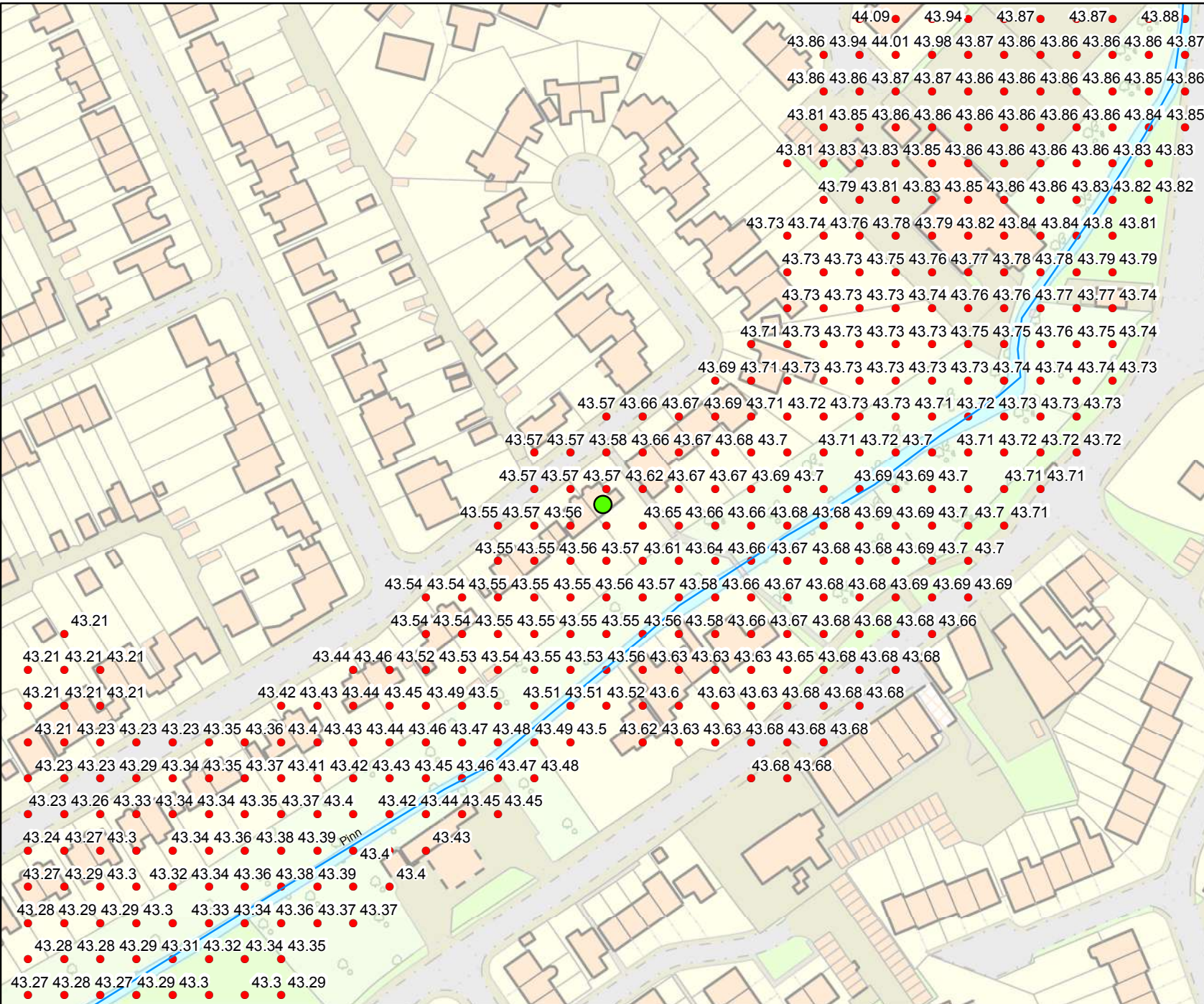
- Main Rivers
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2D Node Results: Heights

- 1 in 250 year (0.4%) Defended

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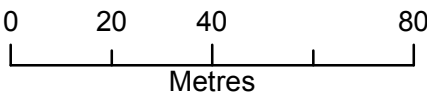


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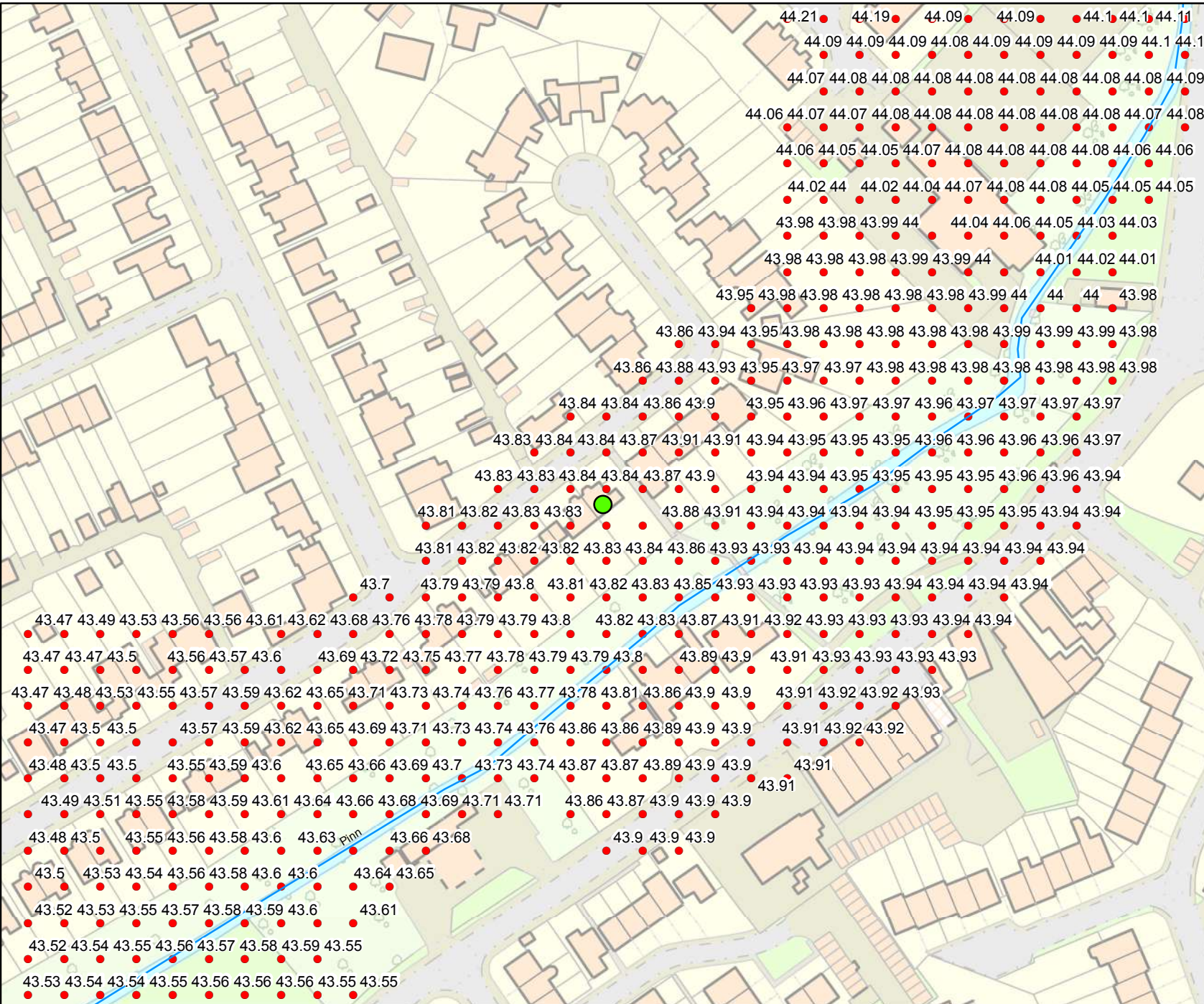
- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 1000 year (0.1%) Defended

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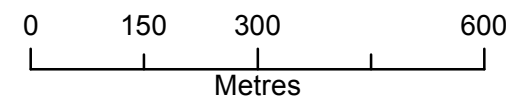


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Historic Flood Map centred on: 29 Sutton Close, Ruislip, HA5 2JX - 27/01/2020 - HNL 158082 AS



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Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location

Flood Event Outlines

- 2009
- 1988
- 1977

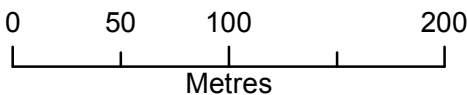
The historic flood event outlines are based on a combination of anecdotal evidence, Environment Agency staff observations and survey. Our historic flood event outlines do not provide a definitive record of flooding. It is possible that there will be an absence of data in places where we have not been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

Produced by:
Partnerships & Strategic Overview,
Hertfordshire & North London

Structures and Defences centred on: 29 Sutton Close, Ruislip, HA5 2JX - 27/01/2020 - HNL 158082 AS



Environment Agency
Alchemy,
Bessemer Road,
Welwyn Garden City,
Hertfordshire,
AL7 1HE



Legend

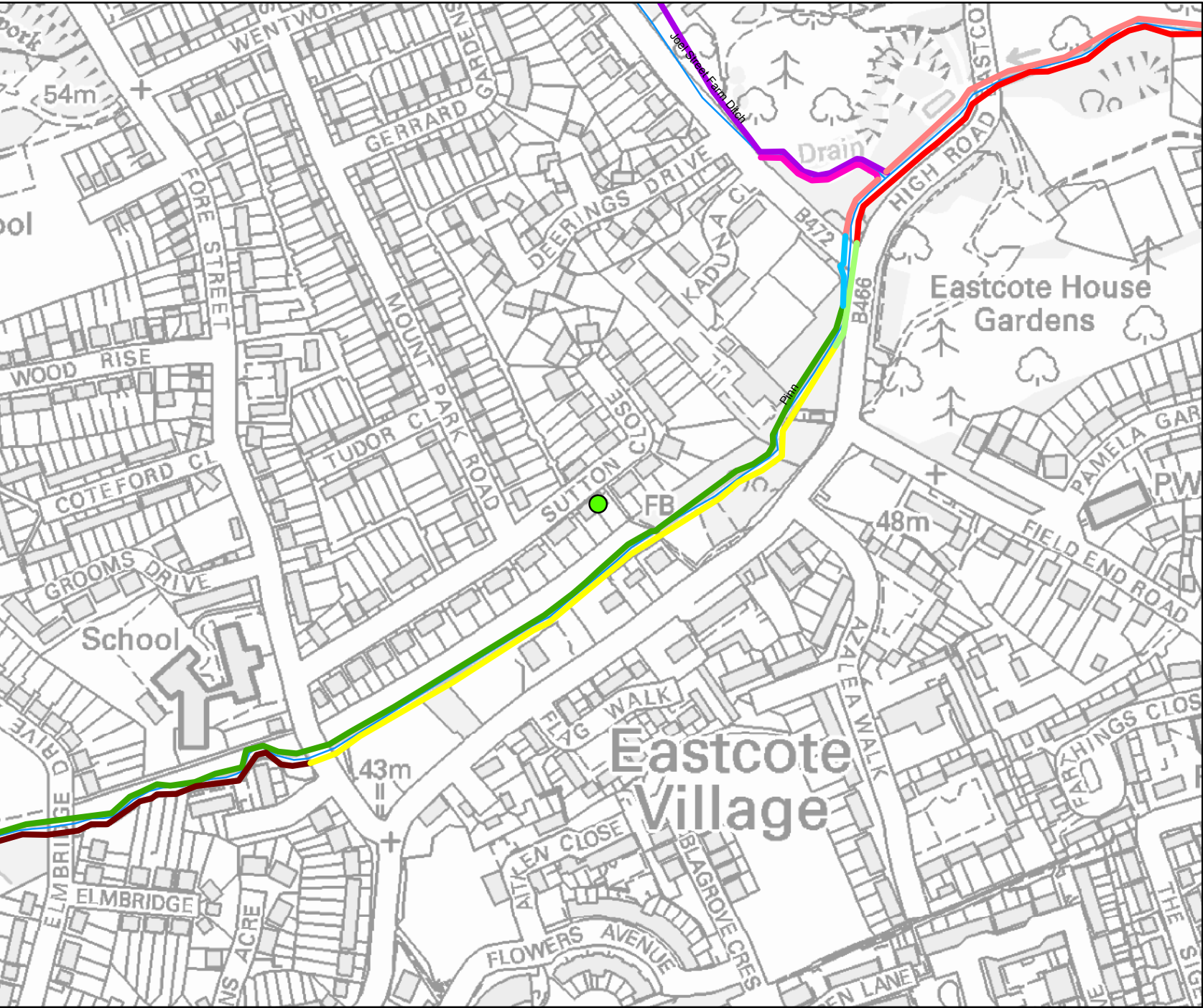
- Main Rivers
- Site location

NAFRA_DEFENCE

- 9004
- 9075
- 153564
- 153565
- 154976
- 154977
- 154978
- 175629
- 175630

The following information on defences
has been extracted from the Asset
Information Management System
(AIMS)

Produced by:
Partnerships & Strategic Overview,
Hertfordshire & North London



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Environment Agency ref: [HNL 158082 AS](#)

The following information on defences has been extracted from the Asset Information Management System (AIMS)

Defences

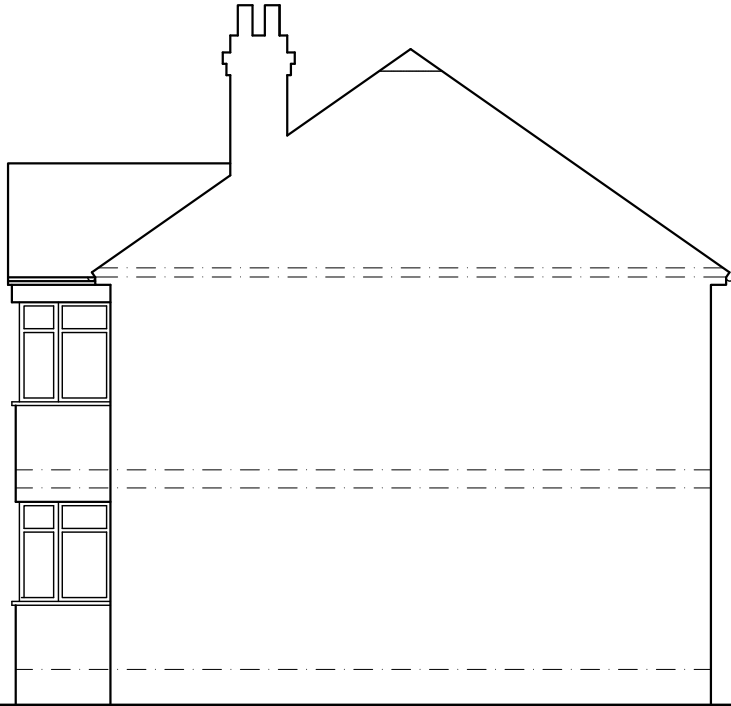
Asset ID	Asset Type	Asset Protection	Asset Comment	Asset Description	Design Standard of protection (years)	Downstream Crest Level	Upstream Crest Level	Condition of Defences (1=Good, 5 = Poor)
175629	high_ground	fluvial	Natural channel with areas of masonry lining along length	Natural Bank.	2	44	55.45	3
175630	high_ground	fluvial	Natural vegetated channel with masonry lining at U/S end.	Natural Bank.	5	44.3	43.7	3
9004	high_ground	fluvial	Natural vegetated channel	Natural Bank	2	44.1	44.1	2
9075	high_ground	fluvial	Natural vegetated bank	Natural Bank	2	43.8	46.8	2
154977	high_ground	fluvial	Natural Vegetated bank.	Natural Bank	2	41.6	44.1	2

153564	high_ground	fluvial	Natural Vegetated Channel.	Natural Bank	5	41.9	43.6	2
153565	high_ground	fluvial	Natural Vegetated channel.	Natural Bank	10	43.6	43.8	2
154976	high_ground	fluvial	D/S 15M: LARGE CONCRETE WALL. U/S: UNCAPPED SHEET STEEL PILING AT BASE.	Bank protection.	10	43.5	43.8	2
154978	high_ground	fluvial	STONE WALL BANK PROTECTION. STONES SET INTO CONCRETE. CONTAINS OUTFALL AT U/S END.	Wall.	100	44.1	44.1	2

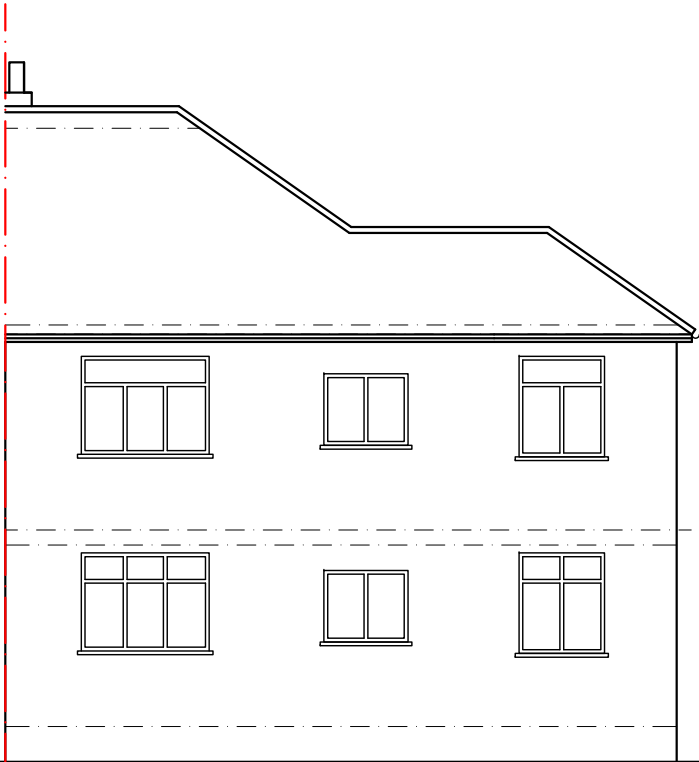
DRAWINGS



EXISTING FRONT ELEVATION
SCALE 1:100



EXISTING SIDE ELEVATION (VIEW FROM NO. 25)
SCALE 1:100



EXISTING REAR ELEVATION
SCALE 1:100



EXISTING SIDE ELEVATION (VIEW FROM NO. 31)
SCALE 1:100

GENERAL NOTES

All dimensions, levels, sizes, positions and locations of particulars as indicated on drawings are to be verified by the appointed Contractor on site prior to engaging in works.

Any discrepancies must be reported to the Architect/Surveyor/Engineer or responsible person/s immediately.

No dimension to be scaled from the drawings for construction purposes unless otherwise indicated. All work is to comply with current Building Regulations.

Party Wall etc. Act 1996 would apply and contractor is to assure that no work is commenced until this formality is completed.

The sole purpose of this drawing is the procurement of Planning Permission and Building Regulation approval and work is NOT to commence before such approvals.

Where this drawing is used for the works, contractor should request at the time of tender, from the tenderer, full specification and schedule of work. To avoid any disputes, this schedule of works in conjunction with the drawings would be used to resolve matters.

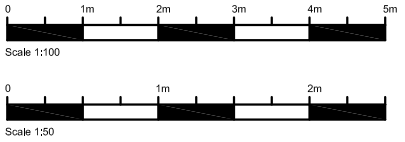
Contractor to assure and satisfy himself that necessary Planning permission and Building Regulations are approved before tendering or commencement of works.

The competent person is to send to the local authority via the scheme provider) a self-certification certificate within 30 days of the electrical works' completion. The client must receive both a copy of the self certificate and a BS7671 Electrical Installation Test Certificate. (Reg. P1)

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The Contractor is responsible for ensuring compliance with the CDM Regulations, and appropriate Health & Safety on site precautions.

PLANNING ISSUE



REVISION	DESCRIPTION	BY	DATE

SHAH designs ltd

Architectural and interior design services
8 Blenheim Court
52 Kenton Road
Harrow
Middlesex
HA3 8AP

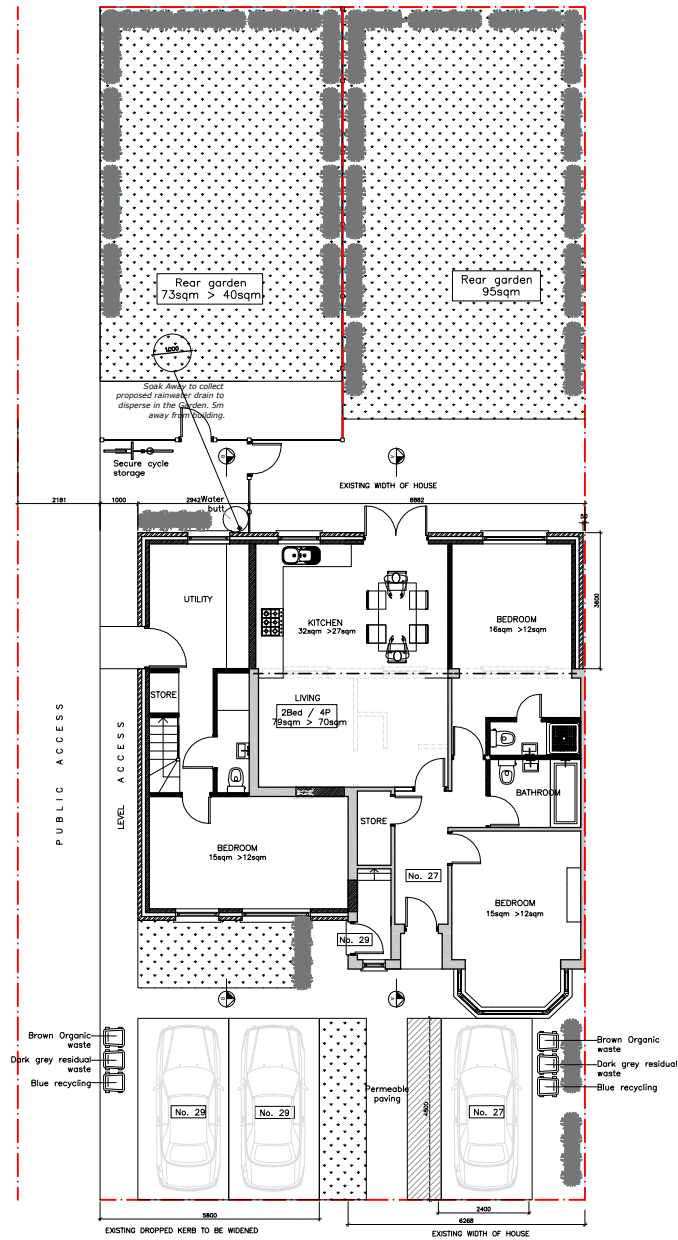
M : + 44 - 07965433242
www.shahdesigns.co.uk
Email : info@shahdesigns.co.uk

PROJECT	29 SUTTON CLOSE EASTCOTE HA5 2JX
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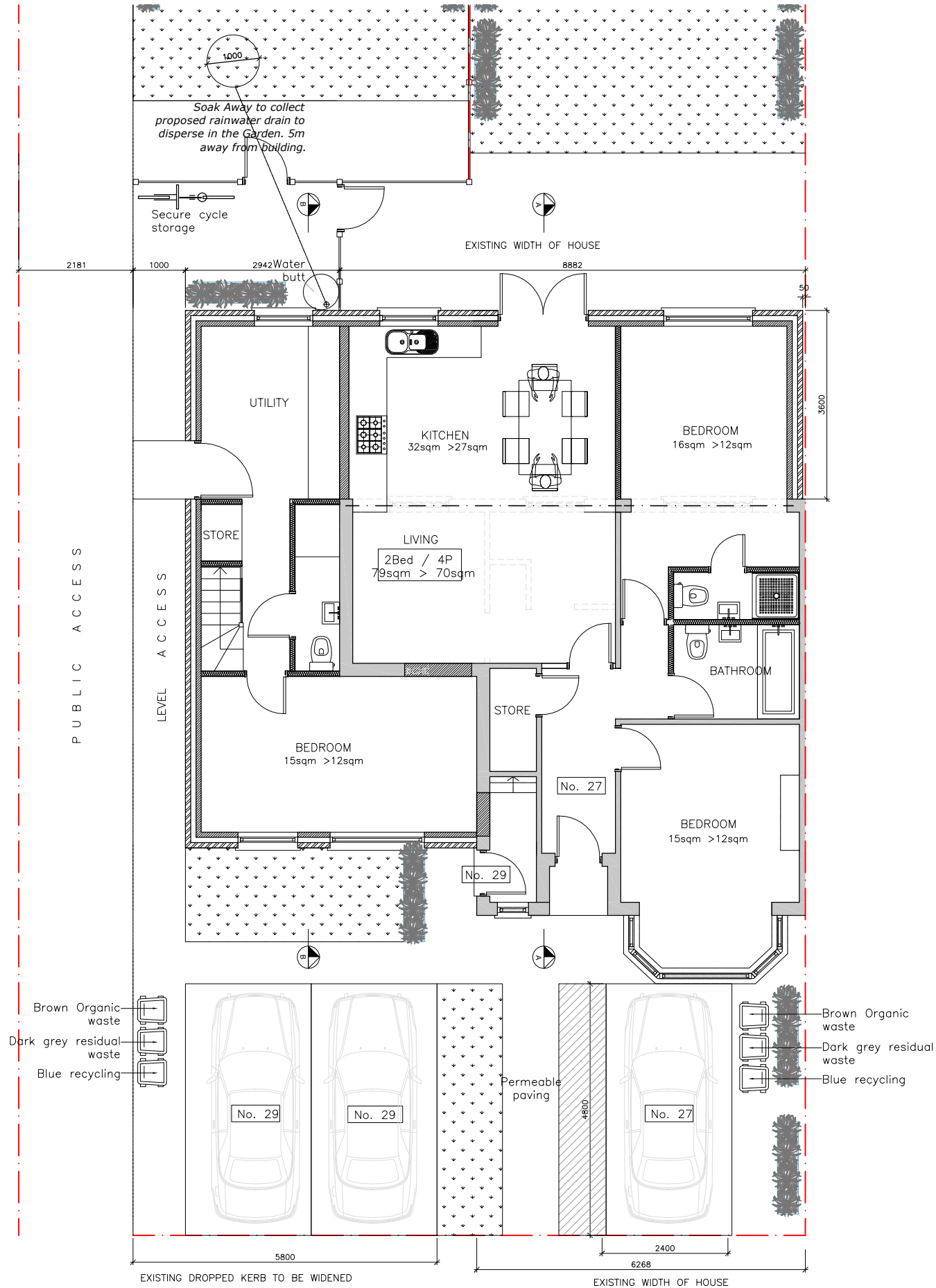
DRAWING TITLE	EXISTING ROOF PLAN
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DATE	17.01.2020	DRAWN BY	SD
SCALE	1:100 @ A3	CHECKED BY	SD

DRAWING NO.	SD1972(P)03
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PROPOSED GROUND FLOOR BLOCK PLAN
SCALE 1:200



PROPOSED GROUND FLOOR PLAN
SCALE 1:100

GENERAL NOTES

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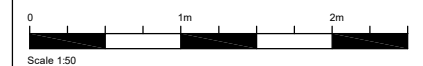
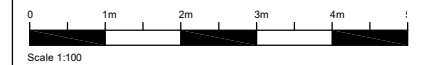
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PLANNING ISSUE



REVISION	DESCRIPTION	BY	DATE
B	MINOR AMENDMENTS	DS	21.05.2021
A	MINOR AMENDMENTS	DS	20.05.2021



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DESIGNS
LTD

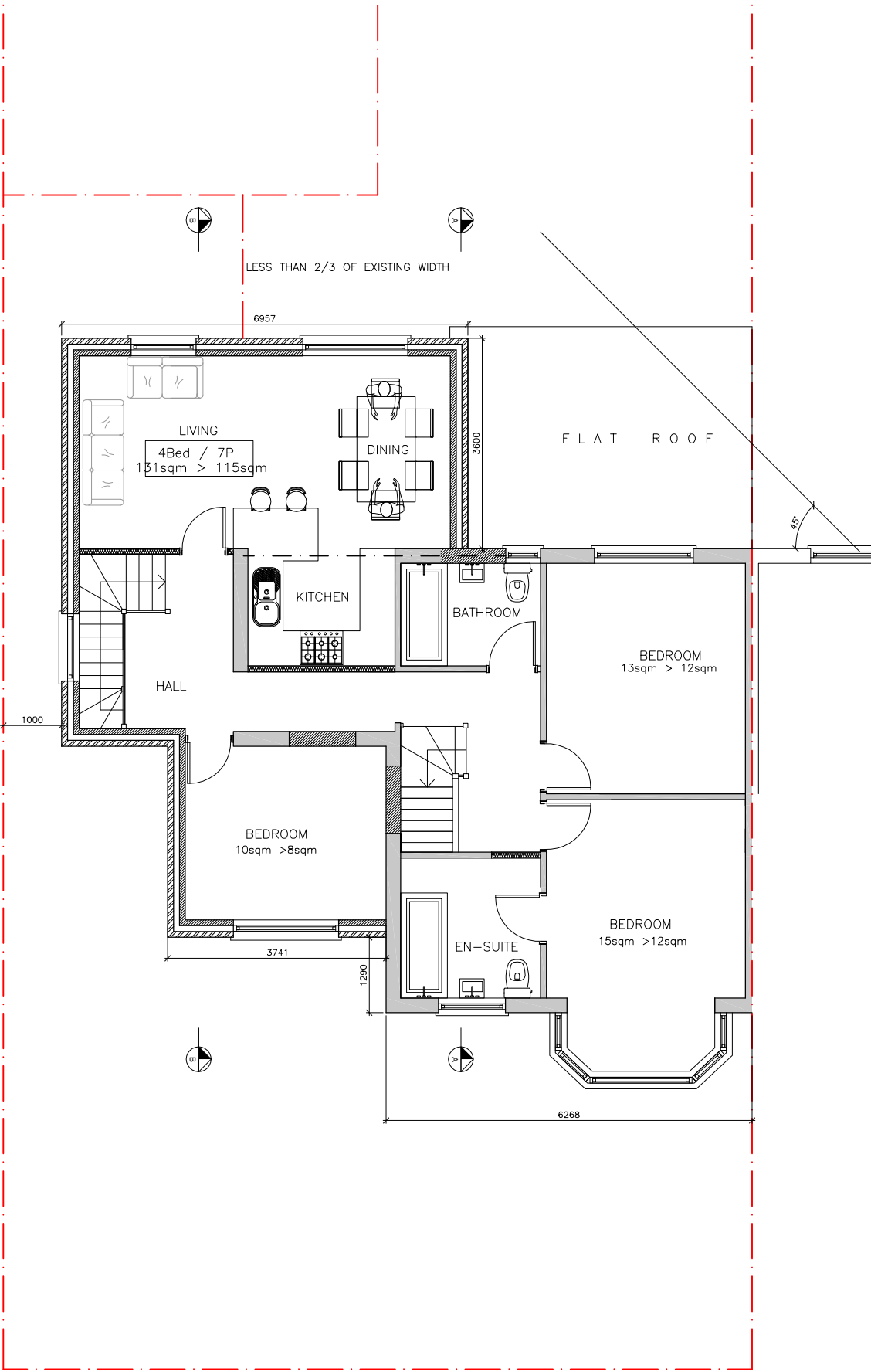
+44 07985 433 242
15 Derwent Avenue, Pinner, HA5 4QH
darshikas@shahdesignsltd.co.uk
www.shahdesignsltd.co.uk

PROJECT
29 SUTTON CLOSE
EASTCOTE
HA5 2JX

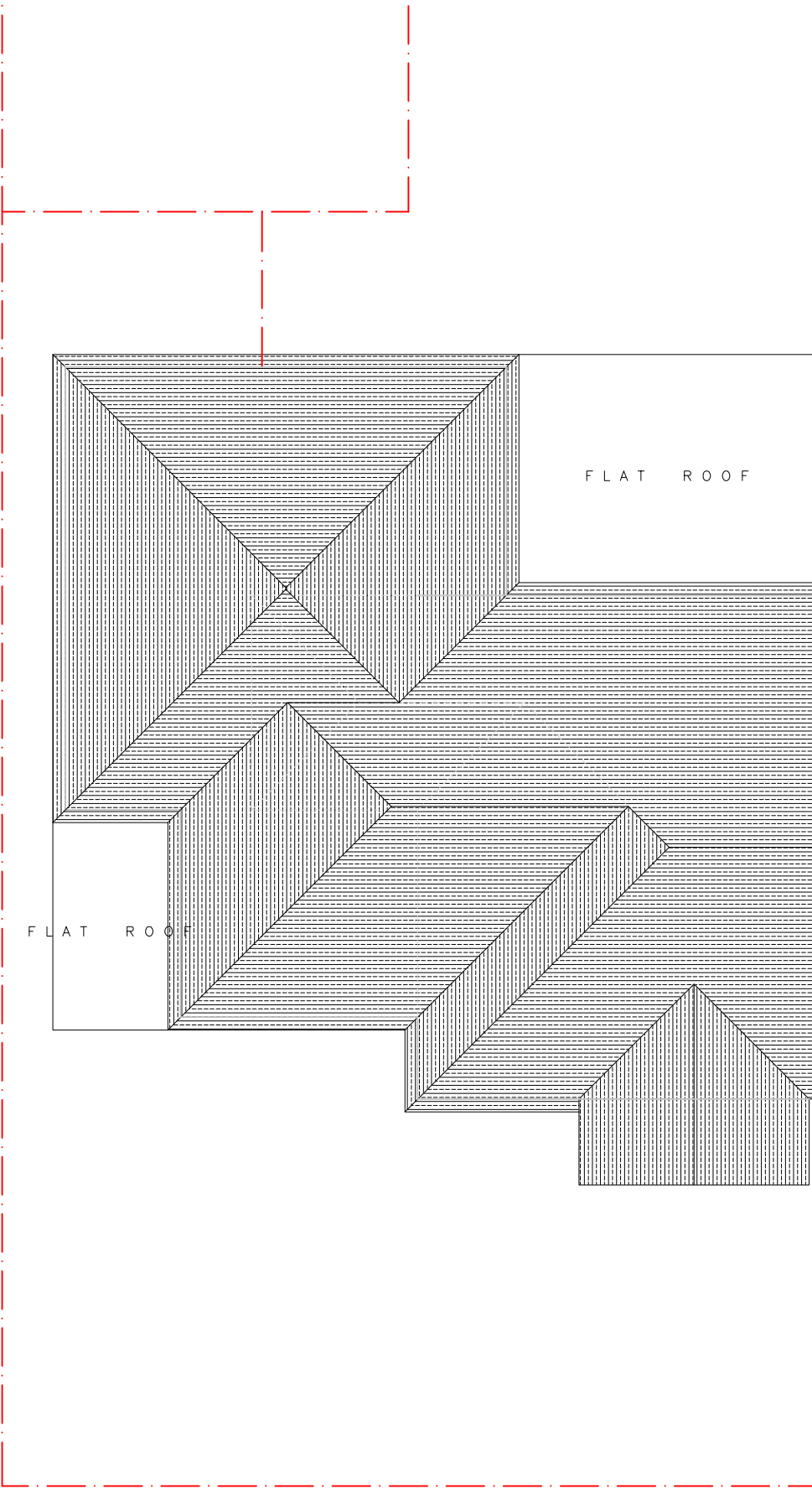
DRAWING TITLE
PROPOSED FLOOR PLAN

DATE 20.05.2020	DRAWN BY SD
SCALE 1:100 @ A3	CHECKED BY SD

DRAWING NO.
SD1972(P)04-B



PROPOSED FIRST FLOOR PLAN
SCALE 1:100



PROPOSED ROOF PLAN
SCALE 1:100

GENERAL NOTES

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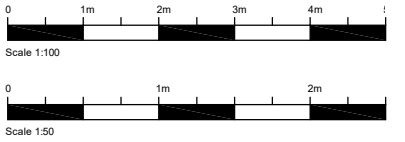
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PLANNING ISSUE



B	MINOR AMENDMENTS	DS	20-05-2021
A	MINOR AMENDMENTS	DS	21-01-2020

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PROJECT
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DRAWING TITLE
PROPOSED FLOOR AND ROOF PLAN

DATE	20.05.2021	DRAWN BY	SD
SCALE	1:100 @ A3	CHECKED BY	SD

DRAWING NO. SD1972(P)05-B



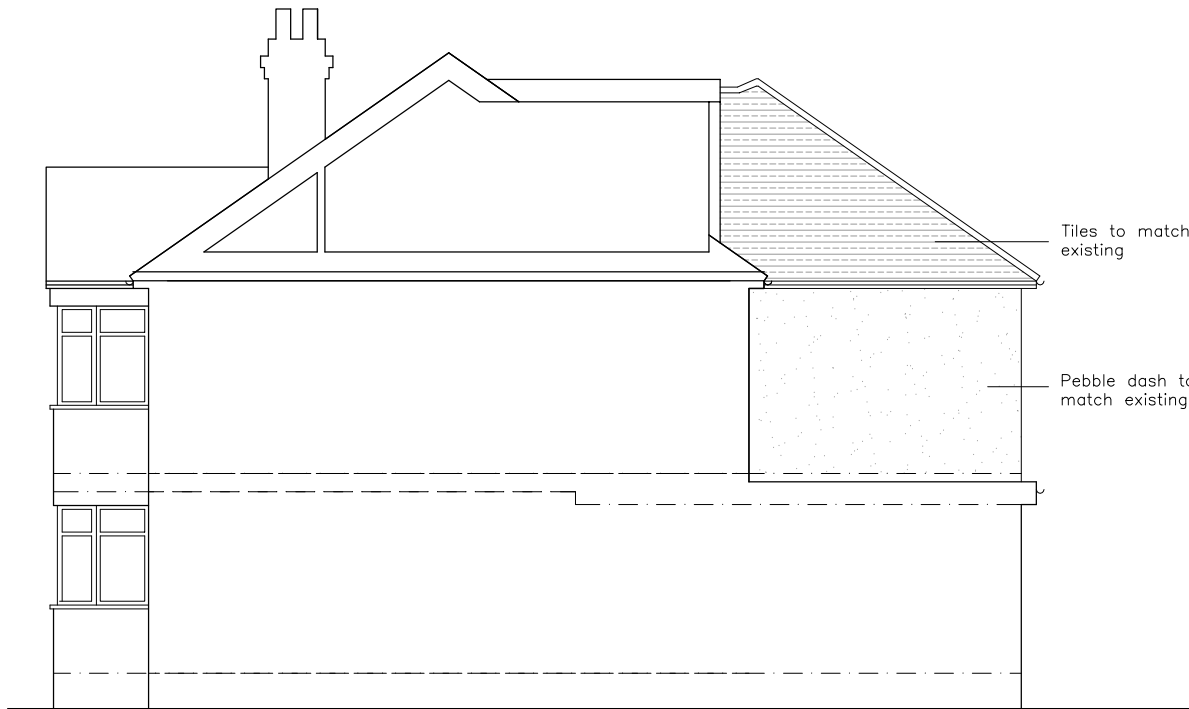
PROPOSED FRONT ELEVATION
SCALE 1:100



PROPOSED SIDE ELEVATION (VIEW FROM NO. 25)
SCALE 1:100



PROPOSED REAR ELEVATION
SCALE 1:100

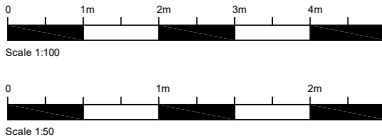


PROPOSED SIDE ELEVATION (VIEW FROM NO. 31)
SCALE 1:100

GENERAL NOTES

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PLANNING ISSUE



REVISION	DESCRIPTION	BY	DATE
B	MINOR AMENDMENTS	DS	04.06.2021
A	MINOR AMENDMENTS	DS	20.05.2021

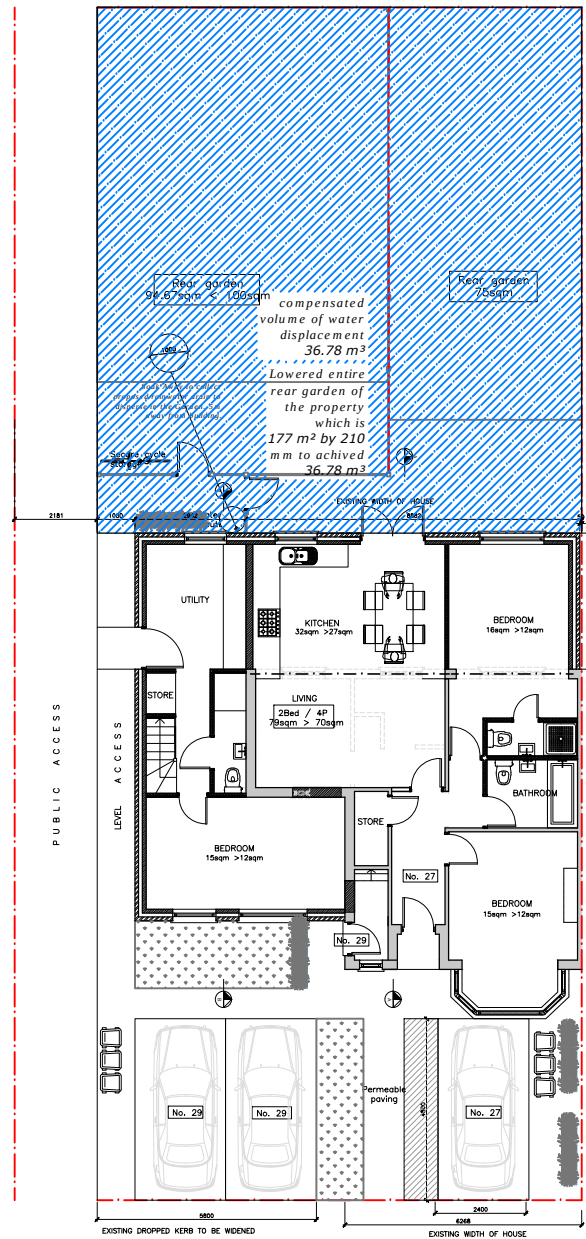
SHAH DESIGNS LTD
+44 07985 433 242
15 Derwent Avenue, Pinner, HA5 4QH
darshikas@shahdesignsltd.co.uk
www.shahdesignsltd.co.uk

PROJECT
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EASTCOTE
HA5 2JX

DRAWING TITLE
PROPOSED ELEVATIONS

DATE	20.05.2021	DRAWN BY	SD
SCALE	1:100 @ A3	CHECKED BY	SD

DRAWING NO.
SD1972(P)06-B



PROPOSED GROUND FLOOR PLAN

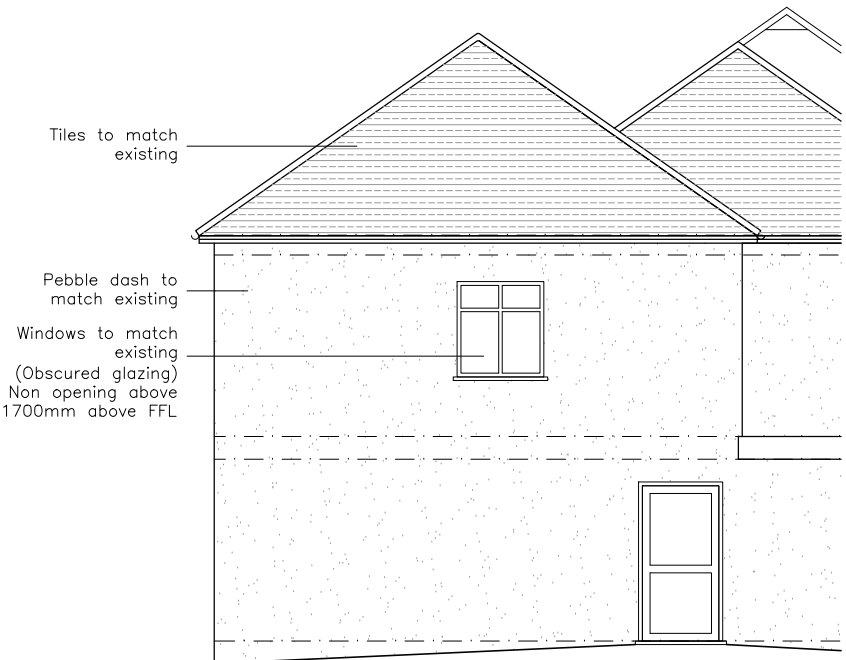
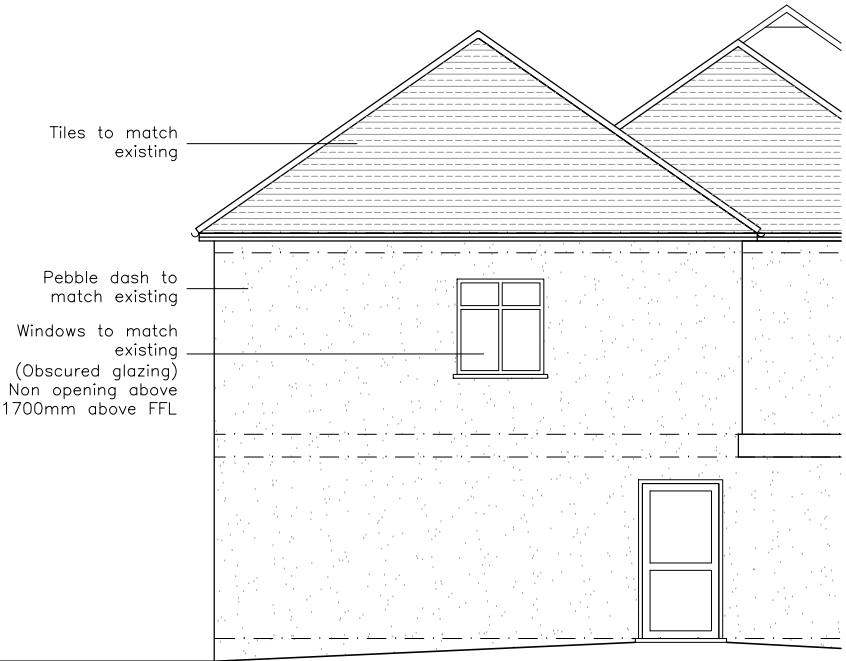
PROPOSED BLOCK PLAN
SCALE 1:200

EXISTING GL

PROPOSED SIDE ELEVATION (VIEW FROM NO. 25)
SCALE 1:100

COMPENSATED VOLUME OF WATER
DISPLACEMENT BY -210 MM TO
ACHIEVE 36.78 M³

PROPOSED SIDE ELEVATION TO SHOW COMPENSATION FOR THE WATER (VIEW FROM NO. 25)
SCALE 1:100



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PLANNING ISSUE



REVISION	DESCRIPTION	BY	DATE
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www.shahdesigns.co.uk

PROJECT
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EASTCOTE
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DRAWING TITLE
PROPOSED BLOCK PLAN AND
ELEVATIONS

DATE	20.05.2021	DRAWN BY	SD
SCALE	1:100 @ A3	CHECKED BY	SD

DRAWING NO.
SD1972(P)07

