

132 Dartmouth Road, Ruislip, HA4 0DG

Reference: R1124 FRA-v1

Sep-26

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FLOOD RISK ASSESSMENT

	Section
Introduction	1
Site Assessment	2
National and Local Planning Policy	3
The Sequential and Exception Test	4
Flood Hazard Assessment	5
Flood Risk Management	6
Off-Site Impacts	7
Residual Risk	8
Conclusions	9
Appendices	
Site Location Plan	A
Existing and Proposed Site Layouts	B
Site Characteristics	C
Flood Level Data	D



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All Environment Agency mapping data used under special licence. Data is current as the data on the correspondence given by the Environment Agency and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

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Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed to undertake a Level 2 – Scoping Study Flood Risk Assessment for a development located at HA4 ODG.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
- Whether the proposed development will likely be affected by current or future flooding.
 - Whether the proposed development will increase flood risk elsewhere.
 - Whether the flood risks associated with the proposed development can be satisfactorily managed.
 - Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

- 1.3 To achieve these objectives, the following documents have been consulted and referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Local Council flood Maps
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage Good practice'



Development Site and Location

- 2.1 The site is located at Dartmouth Road, Ruislip. The nearest postcode is HA4 ODG. Refer to appendix A for site location plan.
- 2.2 The current use of the site is an existing two-storey residential dwelling with an existing single-storey rear extension, together with associated front and rear garden areas. The current user vulnerability classification of the site is More vulnerable. The site is located in the River Flood Zone 2. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the enlargement and alteration of the existing single-storey rear extension to provide an enlarged kitchen and dining area, together with the reconfiguration of the existing ground-floor. Refer to Appendix B for the layout of the proposed development.
- 2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

- | | | |
|------------------------|-----|---|
| Hydrology | 2.5 | The Yeading Brook is located approximately 40 m away from the development. |
| Aquifer | 2.6 | The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers. |
| Source Protection Zone | 2.7 | The site is not located within a Source Protection Zone. |
| Groundwater Levels | 2.8 | The ground water levels for this site are unknown. |

Site Geology

- | | | |
|----------------------|------|---|
| Bedrock | 2.9 | The British Geological Survey records of the site show that it is located within the Lambeth Group-Clay, silt and sand. |
| Superficial Deposits | 2.10 | The British Geological Survey records show that the superficial deposits are not present at the site. |



National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective of contributing to sustainable development. As part of it, they ensure that flood risk and sustainability are considered during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining land suitability for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the development layout and the application of Sustainable Drainage Systems (SuDS).

The Flood and Water Management Act (2010)

- 3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides robust flood risk management for people, homes and businesses and encourages using SuDS for developments. A robust SuDS strategy should consider the recommendations in this Flood Risk Assessment.

Strategic Flood Risk Assessment (SFRA)

- 3.3 Planning policy with regard to development and flood risk in the area is detailed in the West London Strategic Flood Risk Assessment for the boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow (West London SFRA) which was published in 2018. The proposed development site is located within the administrative boundary of the London Borough of Hillingdon.
- 3.4 The SFRA commits to direct new development to locations at the lowest flood risk. The SFRA provides information on the levels and flood hazards that could result from flooding. The Environment Agency flood zone maps and the SFRA ignore the presence of existing flood defences when defining the potential extent of flooding.
- 3.5 This report follows the guidance given in the West London Strategic Flood Risk Assessment for the boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow by evaluating the flood risk and providing relevant flood mitigation.



- 4.1 The NPPF guidance states that "the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Where the test applies, development proposals should not be located in areas at risk of flooding where alternative sites, appropriate for the development, are reasonably available in areas with a lower risk of flooding. The area to which the test is applied should not be greater than the anticipated catchment of the development in terms of its likely occupiers or users."

Applicability of the Sequential Test

- 4.2 The flood risks were determined by identifying all the sources of flooding and assessing their possible impact and likelihood to development. It is confirmed that the development is:

- In Flood Zone 2, based on the Planning Flood Risk Map
- In Flood Zone 2, based on the Flood Level information Provided by the Environment Agency
- Adjacent to an area at low risk of surface flooding
- At very low risk of groundwater flooding
- Outside of a critical drainage area
- Outside of an area with sewer flooding

- 4.3 This type of development is exempt from applying the sequential test as per Policy F5(2)(c) of the National Planning Policy Framework (NPPF). The development has been made safe and has not increased the risk to other properties. National planning policy recognises that for householder development, minor non-residential extensions (footprint <250 m²) and changes of use, requiring an off-site area-of-search evaluation is impractical. As such, the scheme satisfies national sequential requirements without the need to evaluate alternative sites in lower flood risk zones. See copy of Policy F5(2)(c) below:

"F5.2. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, other than for:

c. For the following types of development:

i. Householder development;

ii. Small non-residential extensions (with a footprint of less than 250m²); and

iii. Changes of use, other than changes of use to a caravan, camping or chalet site, or to a mobile home or park home site."



Exception Test

	4.4	Fluvial flood risk for this minor development has been assessed using the Environment Agency Flood Map for Planning and the standing advice approach set out in the NPPF, which considers both the scale of development and the vulnerability classification of the proposed land use.
Step 1	4.5	The proposed development lies within Flood Zone 2 on the Environment Agency Flood Map for Planning. The Flood Zone 2 is considered to have a medium probability of flooding with a 1000 to 100 years annual probability or 0.1-1.0%AEP.
Flood Zone categorisation		
Step 2	4.6	The Exception Test is not required for this development.
The Exception Test		



- 5.1 The development has been assessed for the following potential flood risks, river and tidal flood risk, surface water flooding, flooding from groundwater, reservoir flood risk and drainage systems.

Flood Defence and Historic Flooding

- 5.2 The Environment Agency records show that the site does not benefit from flood defences. They also show that the area around the site has not been flooded in the past. See Appendix C for details.

Flooding from river and sea

- 5.3 The site is affected by River Flooding. The proposed development lies within Flood Zone 2 on the Environment Agency Flood Map for Planning. The Flood Zone 2 is considered to have a medium probability of flooding with a 1000 to 100 years annual probability or 0.1-1.0%AEP.
- 5.4 The climate change allowance has been taken from the EA peak river flow map. The vulnerability of the development, the design life of the building, and the flood zone classification were used to determine it. The climate change allowance for this site is 17%. The nearest climate change allowance of 17% provided by the EA was used as the most representative to complete this assessment.
- 5.5 The levels provided by the Environment Agency are shown in table 1 below. Further details are provided in Appendix D.

Flood levels in channel		Flood levels at Site	
Return Period	Flood Level (m AOD)	Return Period	Flood Level (m AOD)
1 in 20 (5%)	36.78	1 in 20 (5%)	Nil
1 in 30 (3.3%)	36.73	1 in 30 (3.3%)	Nil
1 in 100 (1%)	36.9	1 in 100 (1%)	Nil
1 in 100 + 17%(CC)	36.96	1 in 100 + 17%(CC)	36.89
1 in 1000 (0.1%)	37.17	1 in 1000 (0.1%)	37.46

- 5.6 The river flood risk level is 36.89m AOD. This level is 0.41 m lower than the site level. This flood level does not have an impact on the finished floor levels of development.



Surface water (overland flows) flood risk

5.7 The Environment Agency Flood Map for Planning Surface Water dataset indicates a very low surface water flood risk. A residual risk of localised shallow ponding during extreme rainfall events remains possible. The mapping includes present day and climate change scenarios based on the UKCP18 Upper End 2070s climate change allowance.

5.8 *The Environment Agency Flood Map for Planning Surface Water datasets combine national flood modelling with locally available detailed flood model information. Flood extents below 75mm depth are removed from the mapping, as shallow surface water flooding of this magnitude is generally unlikely to prevent access or cause flooding to properties.*

Building footprints are raised within the modelling process by approximately 300mm above surrounding ground levels. As a result, raw model outputs can sometimes indicate that buildings are outside mapped flood extents.

The mapping is not intended to provide property-specific flood risk or confirm flooding to individual buildings. However, building footprints are infilled using OS MasterMap data where surrounding flood extents indicate potential flood risk to buildings.

The modelling process also removes isolated small wet areas and infills isolated dry areas surrounded by floodwater to improve the usability and consistency of the datasets for strategic planning purposes.

5.9 The strategic flood risk for the London Borough of Hillingdon confirms that the flood risk for the site is Low. The surface water flood data from the strategic flood risk assessment has not been produced to determine the flood levels at individual properties. This data does not contain the climate change allowances for depth levels. Therefore, the Design flood level is based on the Environment Agency Flood Map for Planning Surface Water datasets. The mapping is not intended to determine flood levels at individual properties and therefore the design flood level below remains an estimate based on the best available information. Actual flood depths across the site may vary depending on local ground conditions and drainage capacity.

5.10 Based on the Environment Agency and the Strategic flood risk assessment's surface water mapping, it is concluded that the site is at Very Low risk of flooding from surface water sources but is adjacent to an area of low risk of surface water flooding in the road. The existing ground level in the road is 37.2 mAOD, so there is a potential flood level of 37.35 mAOD.



Flooding from drainage systems in adjacent areas

- 5.11 The council's database confirms that there are no records of sewer flooding within the site. The site is located outside of the sewer flooding incidents area. See appendix C for details.

Reservoirs Risks

- 5.12 The Reservoir Flood Map (RFM) produced by the Environment Agency does not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes. They can be used to help reservoir owners produce on-site plans, and the Local Resilience Forum produce off-site plans and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be outside of the possible dam breach flooding path. See Appendix C.

Groundwater flood risk

- 5.13 The British Geological Survey's flood risk susceptibility maps show that the development has limited susceptibility to groundwater flooding. The risk of groundwater flood to the site is considered very low. Refer to appendix C for record drawings.

Critical Drainage Areas

- 5.14 The development does not fall within a critical drainage area.



6.1 The Flood hazard assessment has demonstrated that the site is:

- In Flood Zone 2, based on the Planning Flood Risk Map
- In Flood Zone 2, based on the Flood Level information Provided by the Environment Agency
- Adjacent to an area at low risk of surface flooding
- At very low risk of groundwater flooding
- Outside of a critical drainage area
- Outside of an area with sewer flooding

6.2 Under the NPPF it is necessary to demonstrate that, for any new development on the site, it is possible to provide an adequate level of flood protection for personnel working or living at the development.

Design Flood Level

6.3 The design flood level is the maximum estimated water level during the design storm event including an allowance for climate change in line with current best practice and the national planning policy guidance.

6.4 The Design Flood Level for this development has been determined by evaluating the levels from the Fluvial/Sea, Surface Water and Groundwater flood levels.

6.5 For this site, the design flood level from fluvial source is 36.89m AOD, and from a surface water source is 37.35m AOD.

Flood Protection

6.6 The National Planning Guidance standing advice and Environment Agency recommends that where possible, flood avoidance is provided by establishing the development's finished floor level 600mm above (freeboard) the design flood level. However, this level can be reduced if there is a high level of certainty about the estimated flood level. For this site the estimated free board has been determined to be 0.3m above the Design Flood Level due to the quality of the flood risk information available and the type of risk. The finished floor level is recommended to be 37.65 mAOD.

6.7 For access reasons, the finished floor level of the proposed extension may not achieve this recommended level.



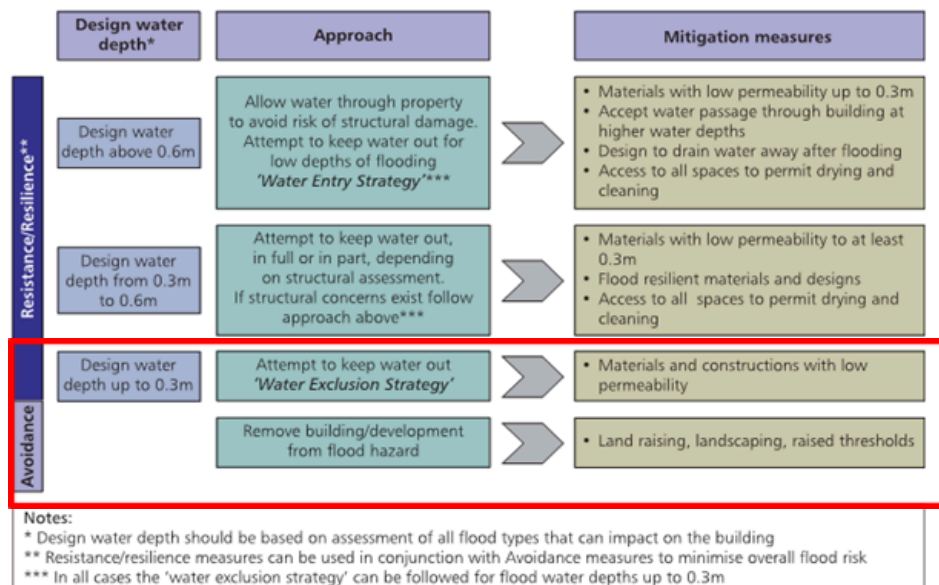
It is assumed that the extension FFL will match the existing FFL. The house threshold is located 150mm above external ground levels of 37.3 mAOD, therefore that existing FFL is 37.45 mAOD.

This provides at least 100mm freeboard from surface water flood level, and 560mm freeboard from potential fluvial flood.

Additionally, the proposed extension works are located to the rear of the house, which is the furthest away from the source of potential surface water flooding. Nevertheless, as the foundations and other parts of the building may be in contact with water, the following flood mitigation is proposed.

6.8 The flood mitigation strategies for the development has been based on the CLG 2007 Improving the Flood Performance of New Buildings. See the figure below for the strategy highlighted in red. The strategy is based on the water level within the proximity to the building.

Rationale for flood resilient and/or resistant design strategies



6.9 The design water depth for this site may be up to 50mm depth from existing external levels. The development should utilise building materials that are suitable for a 'water exclusion strategy'. Materials classified as "Good" (highlighted in red) in the Figure below shall be used for new construction up to 37.95m AOD, to achieve a 600mm freeboard above design flood level.



Flood resilience characteristics of building materials (based on laboratory testing)

Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good

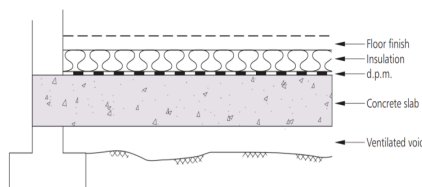
*Resilience Characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth

- 6.10 New services and fittings (communications wiring, heating systems, electrical services, water, electricity and gas meters) should be placed at above the level of 37.95m AOD to achieve a 600mm freeboard above design flood level. All service entries should be sealed (e.g. with expanding foam or similar closed cell material).
- 6.11 Closed-cell insulation should be used for pipes. Sealed PVC external framed doors or good fit and sealed wooden frames should be used. Hollow core timber internal doors should not be used unless sufficient flood warning is given, butt hinges, can be used to allow internal doors to be easily removed and stored. Carpets are to be avoided and use of tiles recommended in floor below the predicted design flood level.
- 6.12 Fittings should be designed to be replaced after a flood, it is advisable to specify durable fittings that are not appreciably affected by water and can be easily cleaned (e.g. use of plastic materials, or stainless steel). The cost of these units may need to be balanced against the predicted frequency of flooding. Avoid wood fiber based carcasses and use easily removable solid wood doors and drawers.
- 6.13 On new foundations or where they are being replaced: Suspended concrete floor slab at least 150mm thick is preferred. Beam and Block slabs with geomembrane and 75mm min screed can also be used. There should be a minimum space of 150mm ventilated void between the ground level and the bottom of the floor slab. Damp-proof membranes should be included in the design. Floor insulation should be of the closed-cell type. Underfloor services



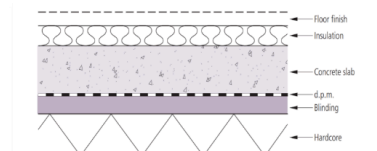
using ferrous materials should be avoided. Ceramic/concrete-based floor tiles, sitting on a bed of sand, cement render and water-resistant grout can be used. Ground bearing slabs are also an option. See the figures below.

Suspended Concrete Slab detail



- Reinforced concrete slab at least 150mm thick and complying with structural requirements for uplift forces
- Damp proof membrane of polythene at least 1200 gauge
- Insulation as rigid closed-cell material
- Ceramic tiles or stone floor finishes and including skirting boards.

Ground bearing Concrete Slab detail

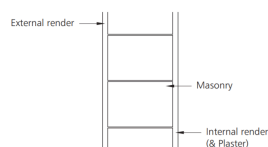


- Hardcore bed at least 100mm thick of well compacted inert material, blinding with fine inert material to provide a smooth base
- Damp proof membrane of polythene at least 1200 gauge
- Concrete slab at least 150mm thick
- Insulation as rigid closed-cell material
- Ceramic tiles or stone floor finishes and skirting boards.

6.14 Concrete blocks used in foundations should be sealed with an impermeable material or encased in concrete to prevent water movement from the ground to the wall construction. In new walls use extended periscope subfloor ventilators or fit removable airbrick covers; fix plasterboard sheets horizontally rather than vertically, or split sheets mid-height with a dado rail, to reduce the extent of replacement; specify lime- or cement-based renovating plasters or renders rather than gypsum-based, with water-resistant paint finishes. The use of water-proof, water-resistant or micro-porous surface coatings on masonry should be avoided as they can inhibit the drying-out of the building fabric.

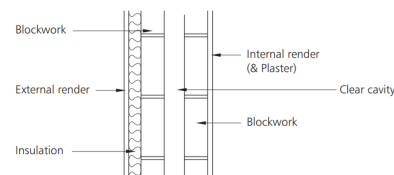
6.15 Good quality facing bricks or external renders with water-repellent properties can be used for the external face. See the examples below of external walls that can be used.

Solid External Wall



- External cement based render, preferably with lime content. Composition depends on masonry. The following mixes have good resilient properties:
 - 1 cement : 6 sand on bricks;
 - 1 cement : 4 sand: 1/2 lime on concrete blockwork or bricks;
 - 1 cement : 6 sand: 1 lime on Aircrete blocks.
 - Masonry with minimum thickness of 300mm (thin mortar joint construction using Aircrete blocks is effective as demonstrated in laboratory tests) or alternatively reinforced concrete wall
 - Internal cement-based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
 - 1 cement : 6 sand: 1 lime on Aircrete.
- Apply external and internal renders, following good practice guidance, ensuring minimum total thickness of 20mm and at least two coats.
- Use external insulation in preference to internal insulation.

Cavity External Walls – Clear cavity

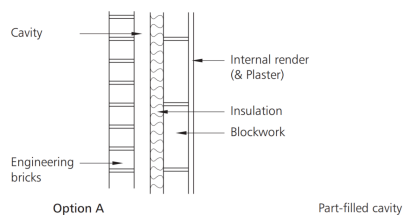


Clear cavity

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective for flood resilience:
 - 1 cement: 4 sand: 1/2 lime on concrete blockwork (or bricks);
 - 1 cement: 6 sand: 1 lime on Aircrete.
- Apply render following good practice guidance, ensuring minimum total thickness of 20mm and two coats.
- Internal cement based render, preferably with lime content. Composition depends on masonry. The following mix works well:
 - 1 cement: 6 sand: 1 lime on Aircrete.
- Stainless steel wall ties should be used to minimise corrosion and consequent staining.



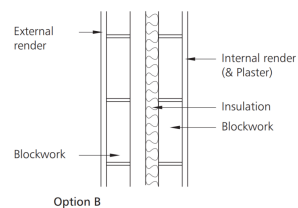
Cavity External Walls- Part fill Option A



Part-filled cavity – Option A

- External face consisting of engineering bricks up to required level for flood protection (up to 0.6m maximum above floor level plus one course). Other external facing materials can be used above this level, but ensure interface is watertight.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective:
1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.
- Sacrificial plasterboard can be used, but it needs to be removed between ground floor and flood level. The board should be fitted horizontally to make removal easier. In some cases a dado rail can be used to cover the joints.

Cavity External Walls- Part fill Option B



Part-filled cavity – Option B

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective:
1 cement : 4 sand: 1/2 lime on concrete blockwork
1 cement : 6 sand: 1 lime on Aircrete.
- External face consisting of blocks.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.

7.1

The NPPF specifically stipulates that consideration should be given to potential off-site flood impacts of any proposed development. These off-site impacts are in relation to the following:

- Surface water management
- Flood flow conveyance, storage and climate change

Surface Water Management

7.2

The surface water run-off will be disposed of using SuDS techniques. The aim is to provide a sustainable design that accommodates the proposed attenuation volume and replicates the existing drainage regime using the SuDS hierarchy, is shown in the figure below.

7.3

The Landis Top Soil classification is impeded drainage. The SuDS techniques highlighted in red below could be used on-site. This assessment is based on the LANDIS Top Soil infiltration, ground conditions and available potential discharge points.

The SuDS Hierarchy (Source:EA Thames region, SuDS a practical guide)

	SUDS technique	Flood Reduction	Pollution Reduction	Landscape & Wildlife Benefit
Most Sustainable	Living roofs	✓	✓	✓
	Basins and ponds	✓	✓	✓
	- Constructed wetlands			
	- Balancing ponds			
	- Detention basins			
	Filter strips and swales	✓	✓	✓
	Infiltration devices	✓	✓	✓
	- soakaways			
	- infiltration trenches and basins			
Least Sustainable	Permeable surfaces and filter drains	✓	✓	
	- gravelled areas			
	- solid paving blocks			
	- porous paviers			
	Tanked systems	✓		
	- over-sized pipes/tanks			
	- storms cells			

7.4

With no increase in the rate of surface water discharge from the site, compared to the site in its current configuration, the proposed development would have no adverse impact on surface water flood risk at the site or surrounding area. The SuDS should be designed at the detailed project stage.



Flood Flow conveyance and storage

- 7.5 Due to the size of the development and its location in the flood zone, flood compensation for this development is not required as the proposed extension is not located within a flood extent.
- 7.6 The proposed development will not affect flood flow conveyance through the site or the surrounding area. It is concluded that there will be no impact on flood risk in the surrounding area.



- 8.1 This flood risk assessment has identified the potential flooding mechanisms that could affect the site. As part of this, the following residual risks have been evaluated.

Public safety and Site Access

- 8.2 This assessment has demonstrated that the proposed development will have no adverse impact on flood risk in the area surrounding the site. Available evidence indicates that the development would not change surface water generation. Therefore, there is no basis to indicate that, with respect to flood risk, the proposed development would adversely impact public safety.
- 8.3 It will be necessary to ensure that all building users are fully informed of procedures to be implemented during the threat of imminent flooding.

Flood Warning and evacuation

- 8.4 The site is located within an area covered by the Environment Agency Flood Alert service. It is recommended that the users of the proposed development are registered with this service to receive early warning of imminent flooding.
- 8.5 The occupants of the site are encouraged to sign up for the alerts. The Table 4 below shows the actions that must be taken for each flood warning.
- 8.6 Action to be taken in the event of an Alarm being Raised or a Flood Warning Received:
- Raise the alarm and evacuate the site following the established Fire Drill procedures. The main assembly is as per the main house fire drill assembly point.
 - Contact Emergency Fire Services (999) if necessary and Environment Agency Floodline: (0845 988 1188) if the event is unexpected.
 - If safe to do so, locate and turn off critical services, e.g. water, gas & electricity.
 - Follow the routes below to evacuate the site altogether.



Actions that will be taken for each flood warning

Warning	Message	Timing	Action
 FLOOD ALERT	Flooding is possible. Be prepared.	2 hours to 2 days in advance of flooding.	- Be prepared for flooding. - Prepare a flood kit.
 FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 1 day in advance of flooding.	- Act now to protect your property. - Block doors with flood boards or sandbags and cover airbricks and other ventilation holes. - Move pets and valuables to a safe place. - Keep a flood kit ready. - Move any critical equipment and information to a safe location
 SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life and different actions are required.	- Be ready should you need to evacuate from the property. - Co-operate with the emergency services and call 999 if you are in immediate danger.
Warning Removed	No further flooding is currently expected for your area.	Issued when a flood warning is no longer in force.	- Flood water may still be around and could be contaminated. - If you've been flooded, ring your buildings and contents insurance company as soon as possible.

Useful local phone numbers

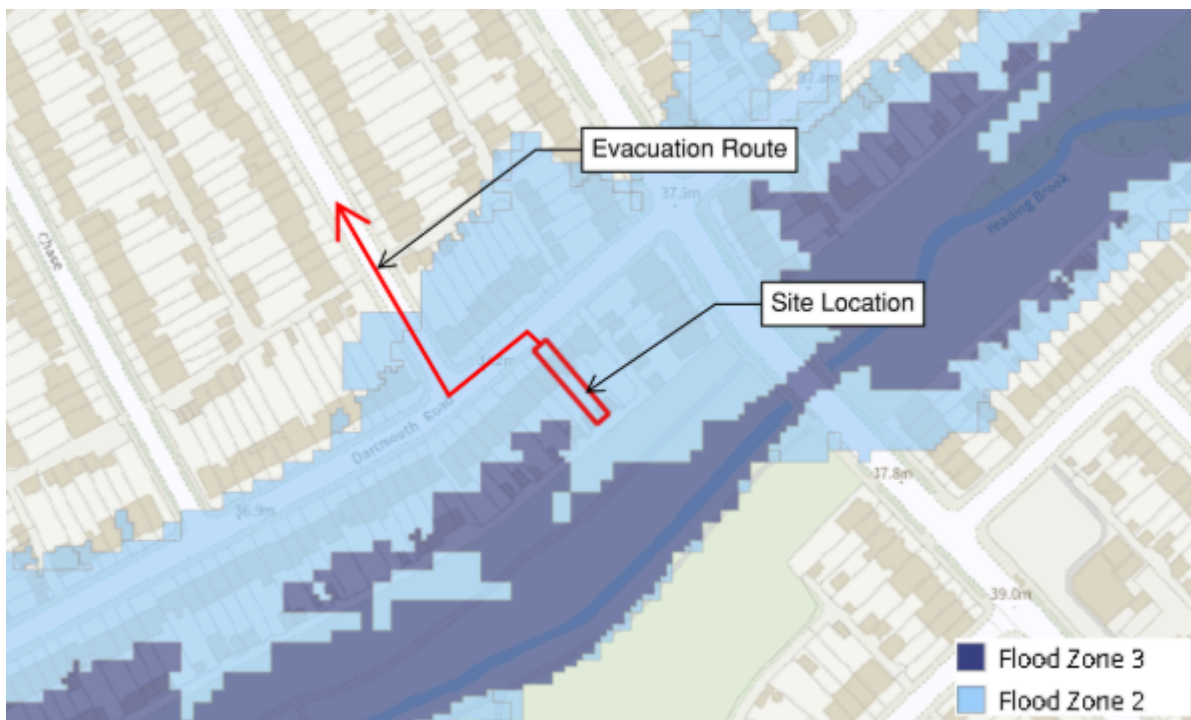
Please write your local phone numbers in the space provided below. Make sure they are easy to find in the event of a flood.

	Local authority:
	Local police:
	Gas and electricity company:
	Insurance company and policy details:
	Doctor:
	Pharmacy:
	Electrician:
	Gas safe engineer:
	Plumber:
	Builder:



- 8.7 The proposed evacuation route below shows how the development could be evacuated before the 1 in 1000 or 0.1% annual probability of flooding extreme flood occurs. Safe egress is achievable by following Dartmouth Road, up to Flamborough Road which is shown to be beyond the extent of flooding. See figure below for details.

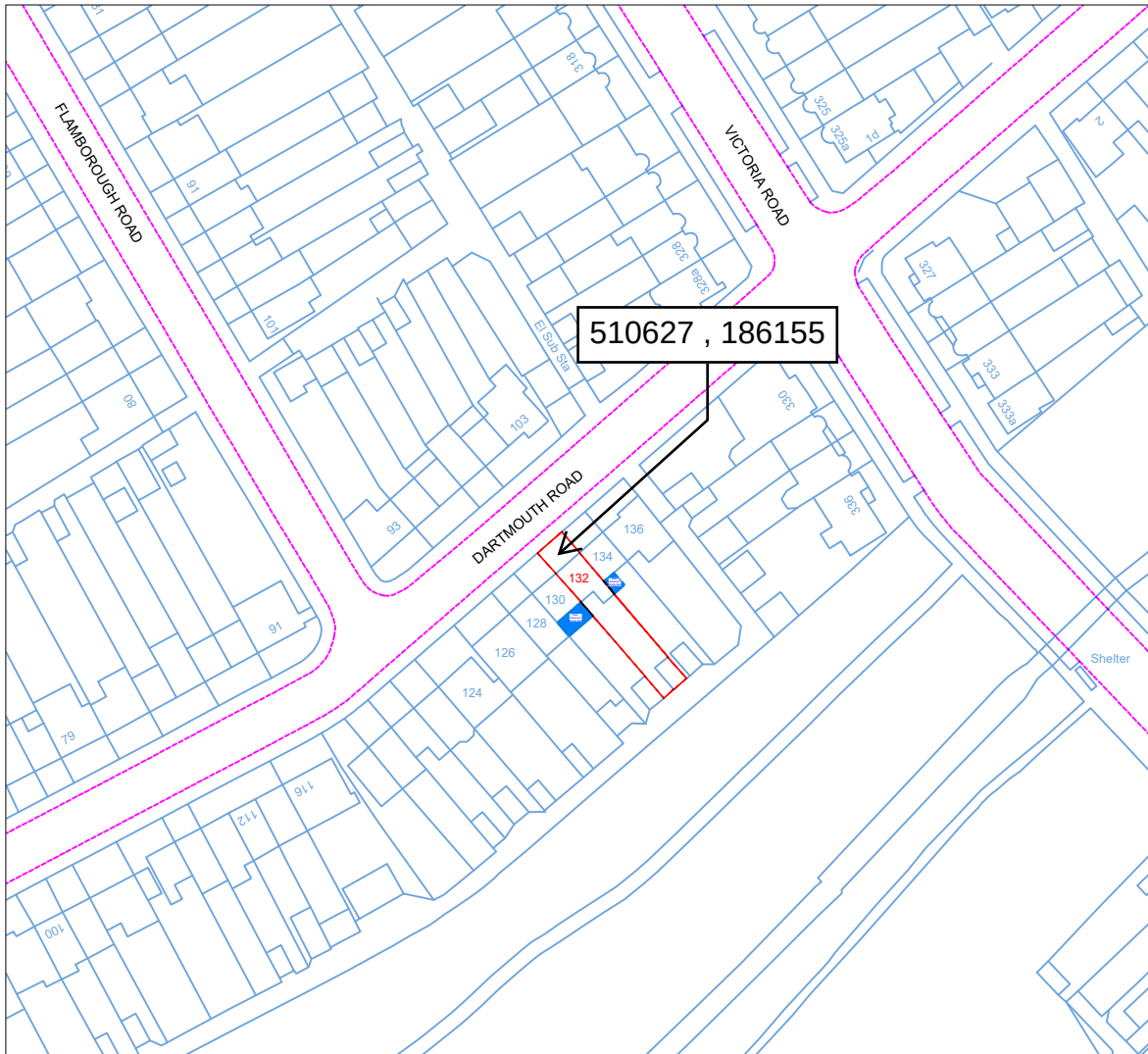
Evacuation Route



- 9.1 It is concluded that subject to the proposed mitigation measures, the site can be developed in accordance with the provisions of the NPPF and the requirements of the Environment Agency and the local planning authority.
- 9.2 This report demonstrates that the proposal will be safe, in terms of flood risk, for its design life and will not increase the flood risk elsewhere.

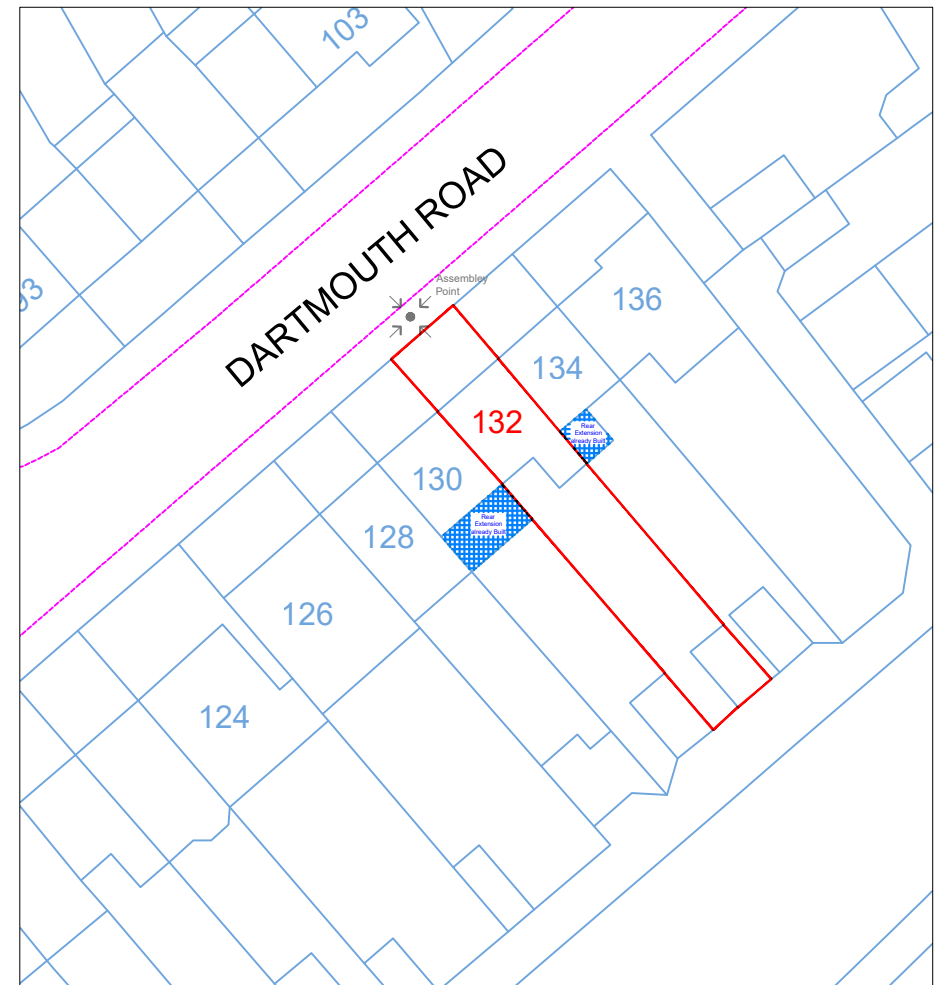
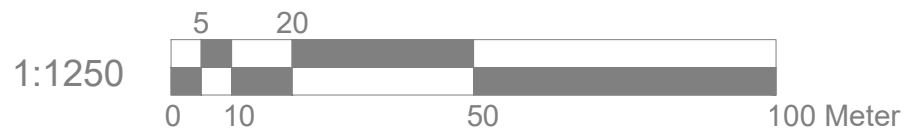


Appendix A



Location Plan

Scale: 1:1250



Block Plan

Scale: 1:500



Site Address

132 Dartmouth Road
Ruislip
HA4 0DG

Scale: 1:500/1250@A4

Date: AUG 26
NN-01-Location-6.0m

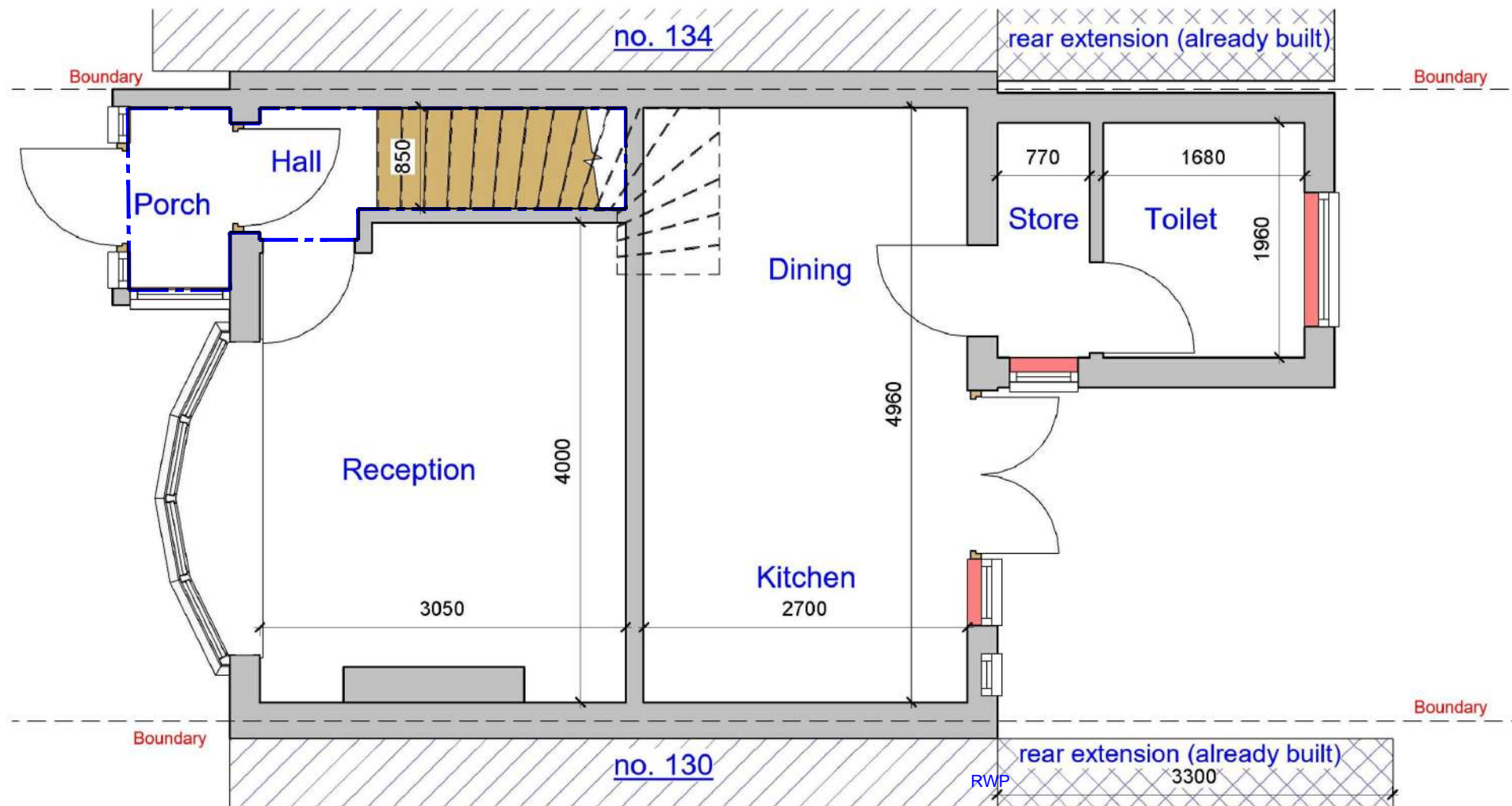
Drawn By: RP

Revision Date:

e:mail - nisarg@hotmail.com
(M) +44 (0) 7951491310



Appendix B



1 Existing Ground Floor

1 : 50

GENERAL NOTES:

- DO NOT SCALE FROM THE DRAWINGS
- ALL DIMENSIONS ARE IN MILLIMETER.
- VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE BUILDING OR STARTING CONSTRUCTION.
- NOTIFY THE DESIGNER IMMEDIATELY OF ANY DISCREPANCY OR VARIATION.
- ALL WORK TO COMPLY WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.



Art @ Rooshika

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PROJECT

132 Dartmouth Road Ruislip HA4 0DG

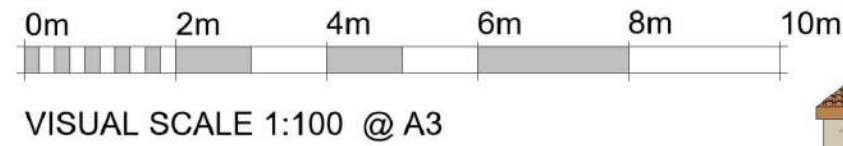
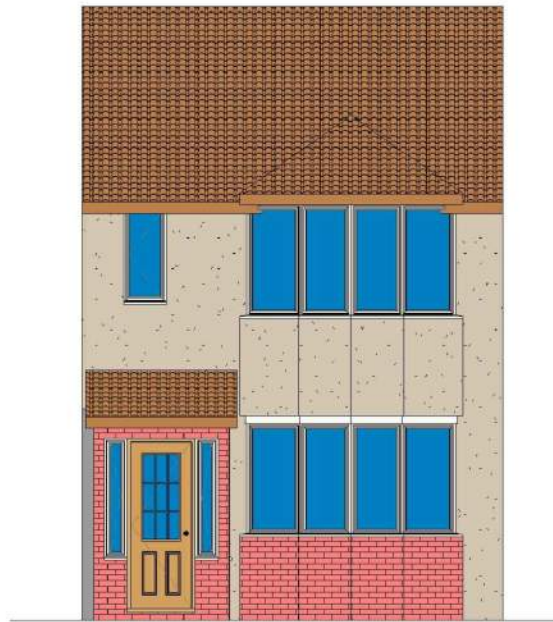
SHEET

Existing Ground Floor Plan

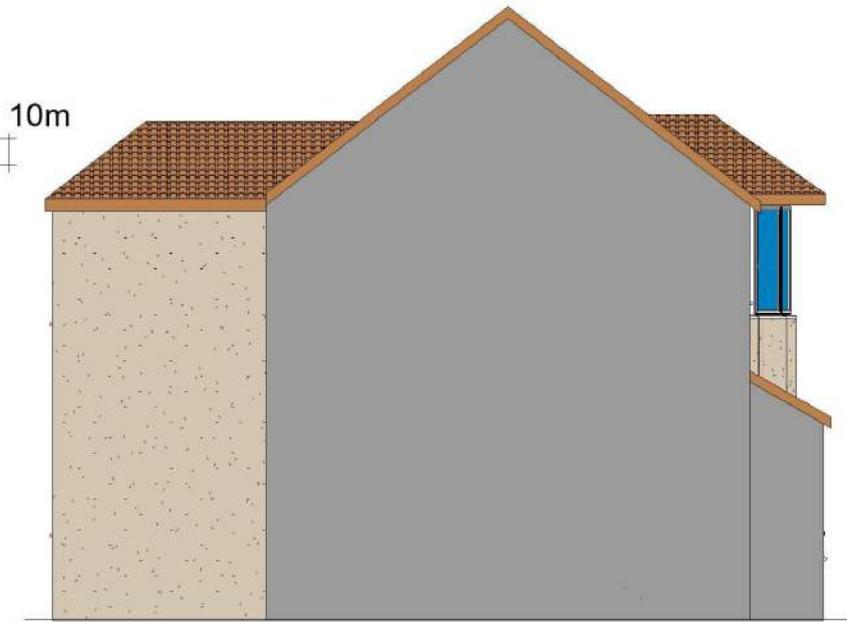
CLIENT

Mrs N Nagpal

Date	Project number	Scale (@ A3)
Issue Date	Project Number	
Drawn by	DRWAING NUMBER	REV
Author		
Checked by	A101- 6.0m	
Checker		



1 Existing Front_Elevation
1 : 100



2 Existing Side 01_Elevation
1 : 100



4 Existing Side 02_Elevation
1 : 100



3 Existing Rear_Elevation
1 : 100

GENERAL NOTES:

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4. NOTIFY THE DESIGNER IMMEDIATELY OF ANY DISCREPANCY OR VARIATION.
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PROJECT

132 Dartmouth Road Ruislip HA4 0DG

SHEET

Existing Elevations

CLIENT

Mrs N Nagpal

Date

Issue Date

Drawn by

Author

Checked by

Checker

Project number

Project Number

DRWAING NUMBER

A102- 4.0m

Scale (@ A3)

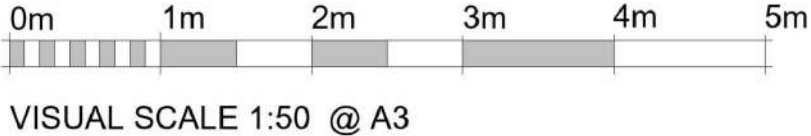
REV

- FD 30

Fire check doors 30 min fire resistance with smoke seal and self closing
- HD

Heat Detector comply with BS 5466 2:2016
- Smoke alarm/detector to comply with BS EN14604
- EL

Emergency lights To be Installed in Accordance with BS5266: 2016



- Assembly Point
- Foam 6 litre foam spray
- Call Point

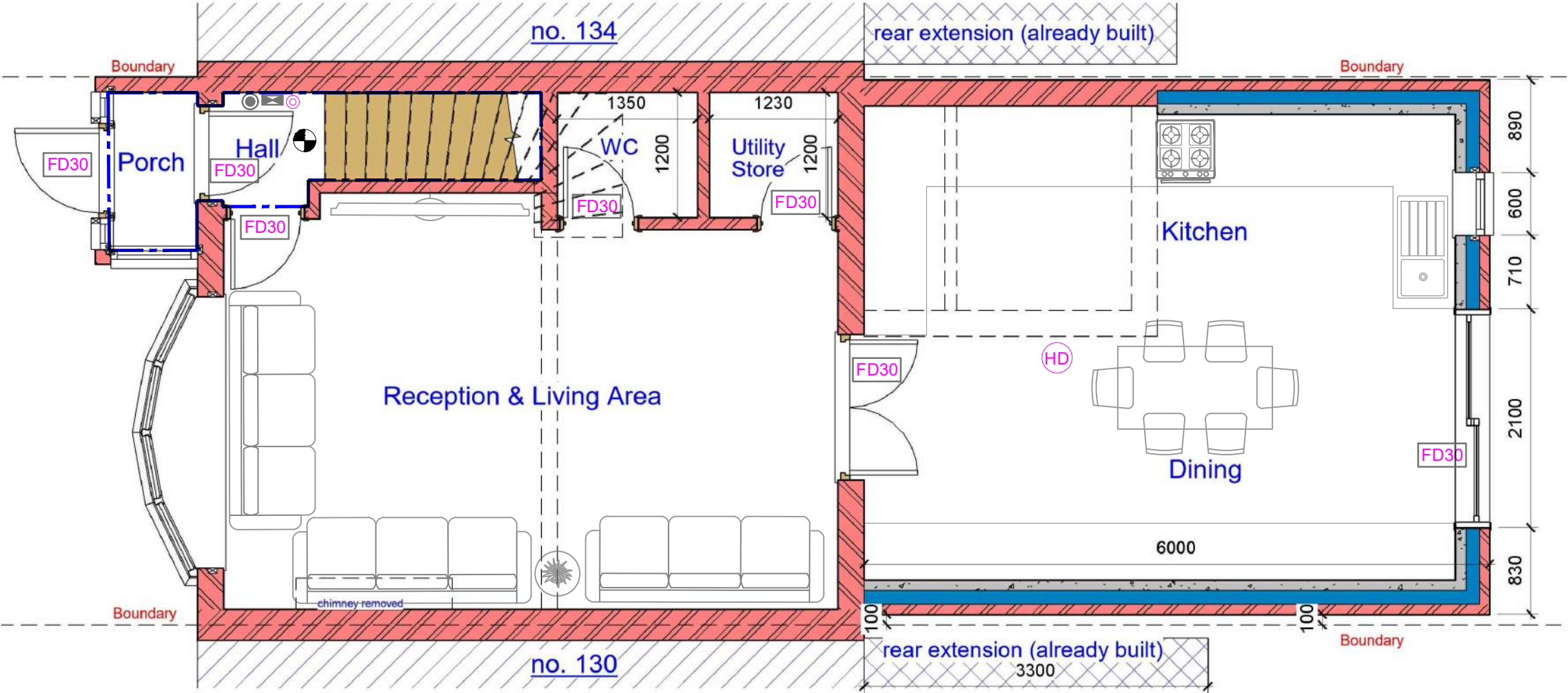
- Fire Alarm System comply with BS 5839:Part 1:2017
- FIRE EXIT

Fire Exit Sign Comply with BS 5499
- CM

Carbon Monoxide Detector
- Extract Vent

The existing partitions forming the protected staircase must provide half-hour fire resistance. They must be lined with 12.5mm plasterboard and skim

The doors to Bedrooms and any habitable rooms and the final exit door must not be fitted with a key on the inside. Thumb turns are acceptable



1

Proposed Ground Floor

1 : 50

GENERAL NOTES:

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5. ALL WORK TO COMPLY WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.

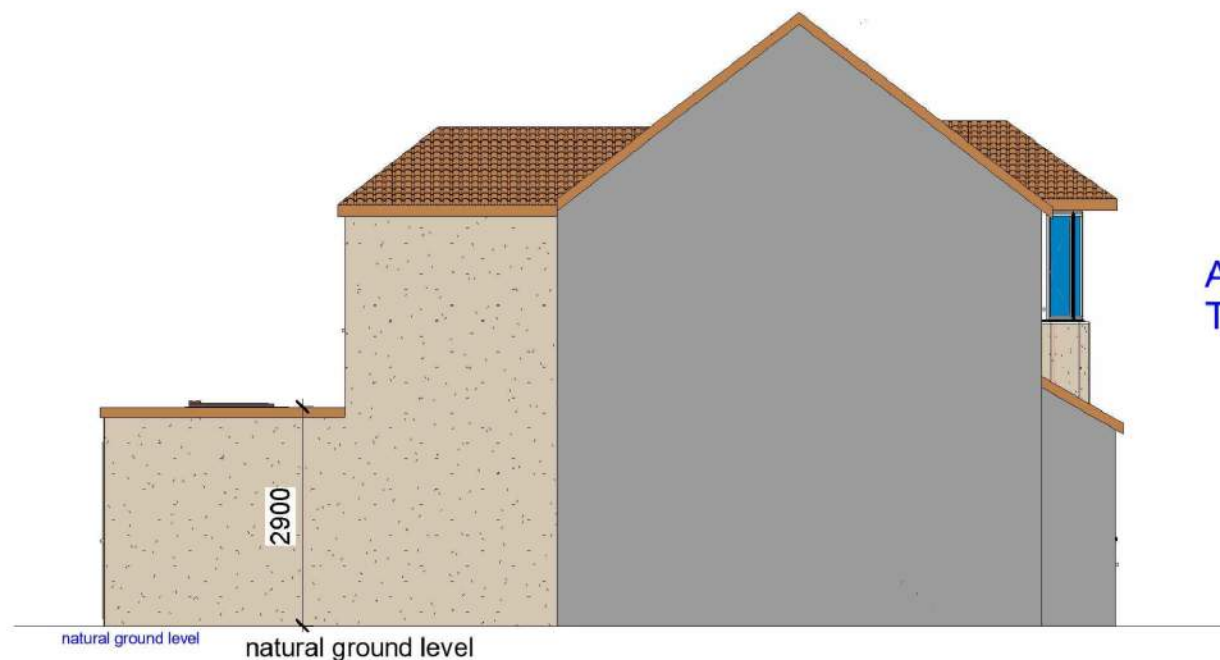
Art @ Rooshika

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PROJECT	132 Dartmouth Road Ruislip HA4 0DG
SHEET	Proposed Ground Floor Plan

CLIENT		Mrs N Nagpal	
Date	Project number	Scale (@ A3)	
Issue Date	Project Number		
Drawn by	DRWAING NUMBER		REV
Author	A103- 4.0m		
Checked by			
Checker			

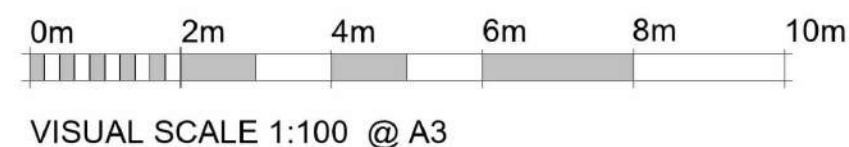


ALL PROPOSED MATERIALS/FINISHED
TO MATCH WITH EXISTING.



1 Proposed Side 01_Elevation
1 : 100

2 Proposed Front_Elevation
1 : 100



3 Proposed Rear_Elevation
1 : 100

4 Proposed Side 02_Elevation
1 : 100

GENERAL NOTES:

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PROJECT

132 Dartmouth Road Ruislip HA4 0DG

SHEET

Proposed Elevations

CLIENT

Mrs N Nagpal

Date

Issue Date

Drawn by

Author

Checked by
Checker

Project number

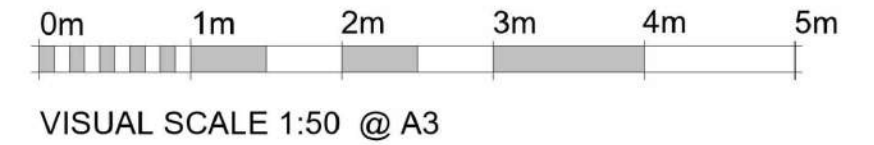
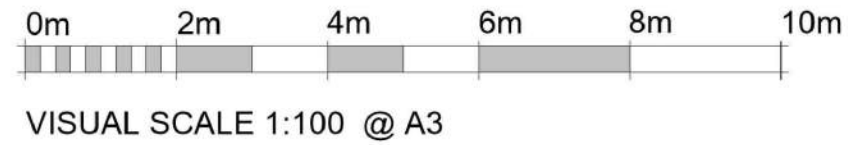
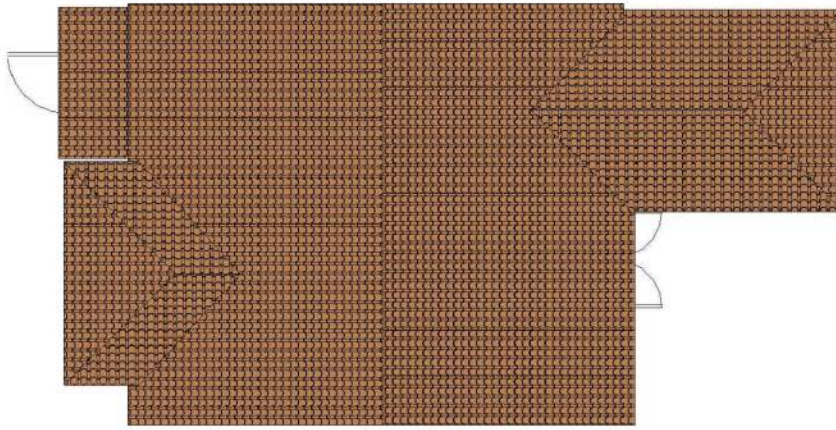
Project Number

DRWAING NUMBER

A104- 4.0m

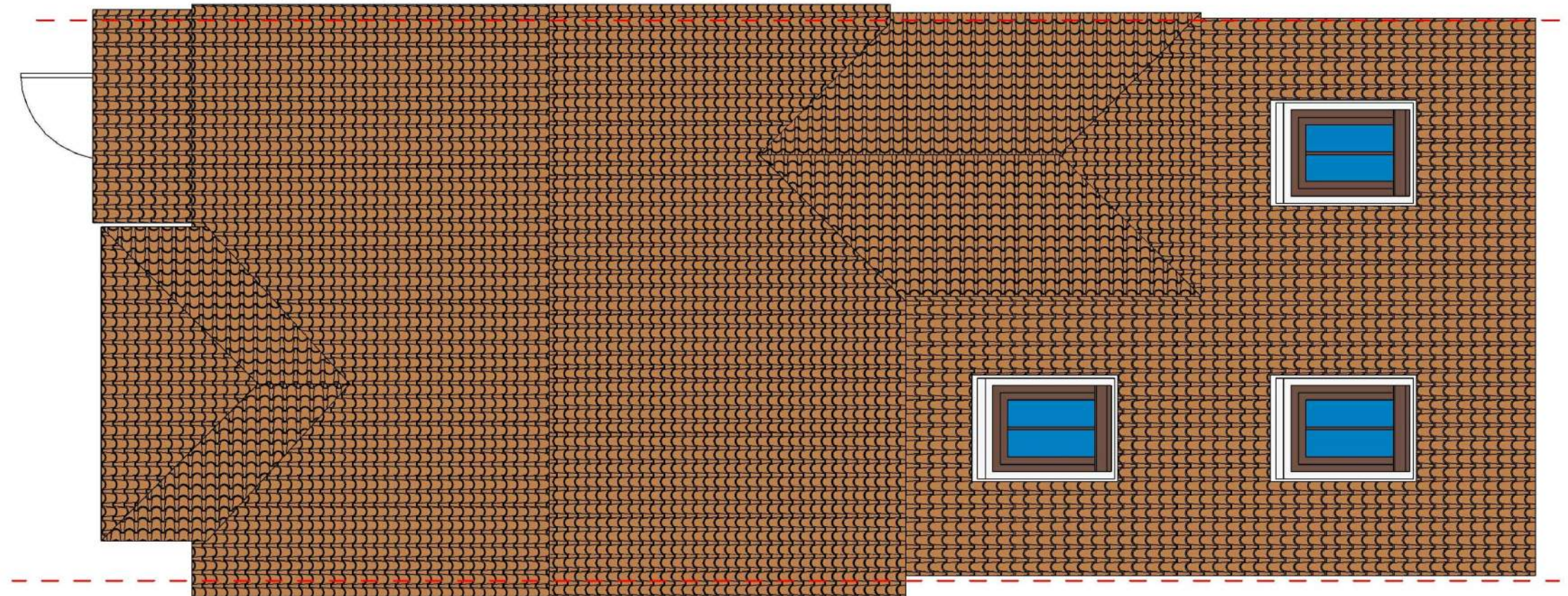
Scale (@ A3)

REV



1 Existing Roof

1 : 100



2 Proposed Roof

1 : 50

GENERAL NOTES:

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- ALL WORK TO COMPLY WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.



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PROJECT

132 Dartmouth Road Ruislip HA4 0DG

SHEET

Existing & Proposed Roof Plan

CLIENT

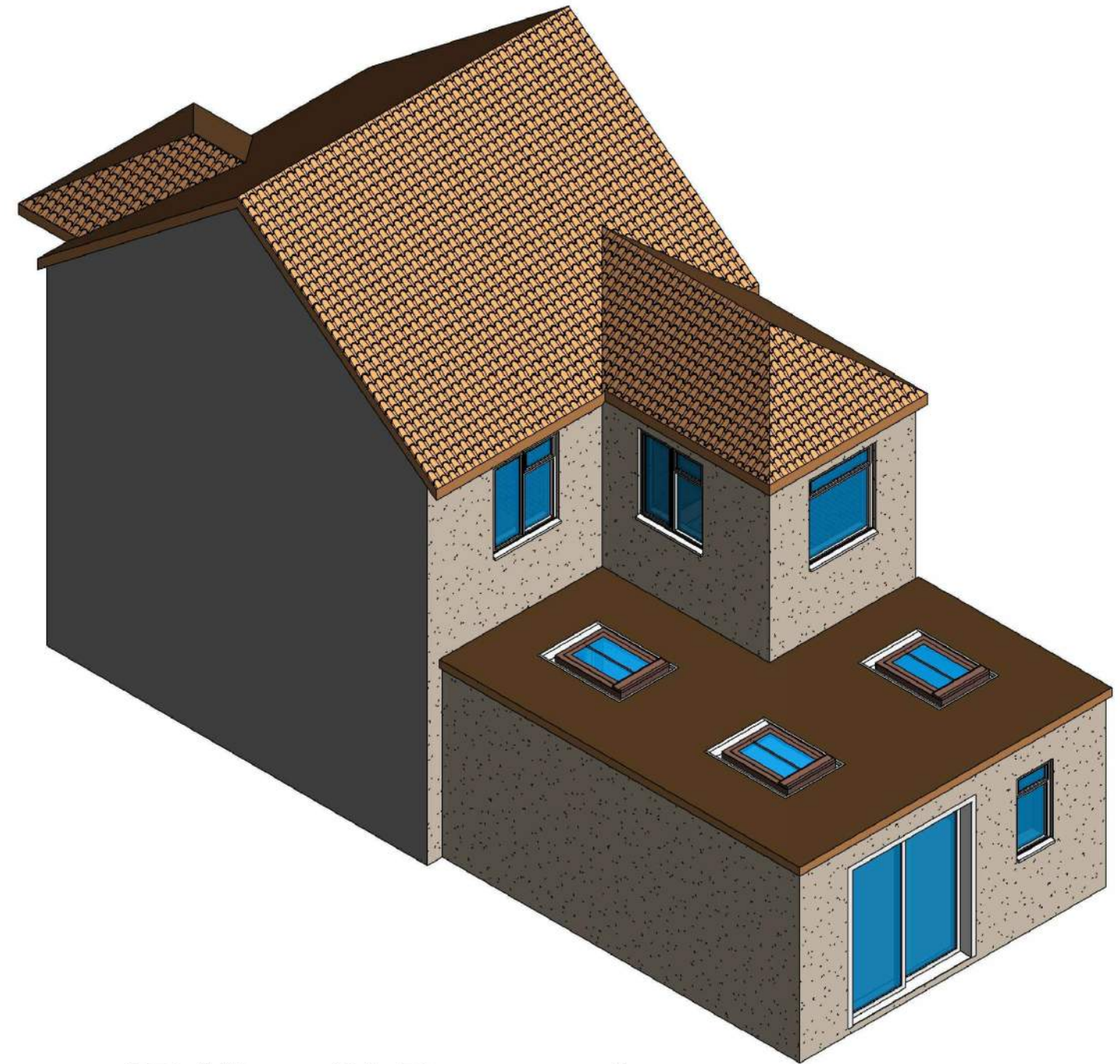
Mrs N Nagpal

Date	Project number	Scale (@ A3)
Issue Date	Project Number	
Drawn by	DRWAING NUMBER	REV
Author		
Checked by	A105- 4.0m	
Checker		



1

3D View 01 Existing



2

3D View 01 Proposed

GENERAL NOTES:

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PROJECT

132 Dartmouth Road Ruislip HA4 0DG

SHEET

3D View

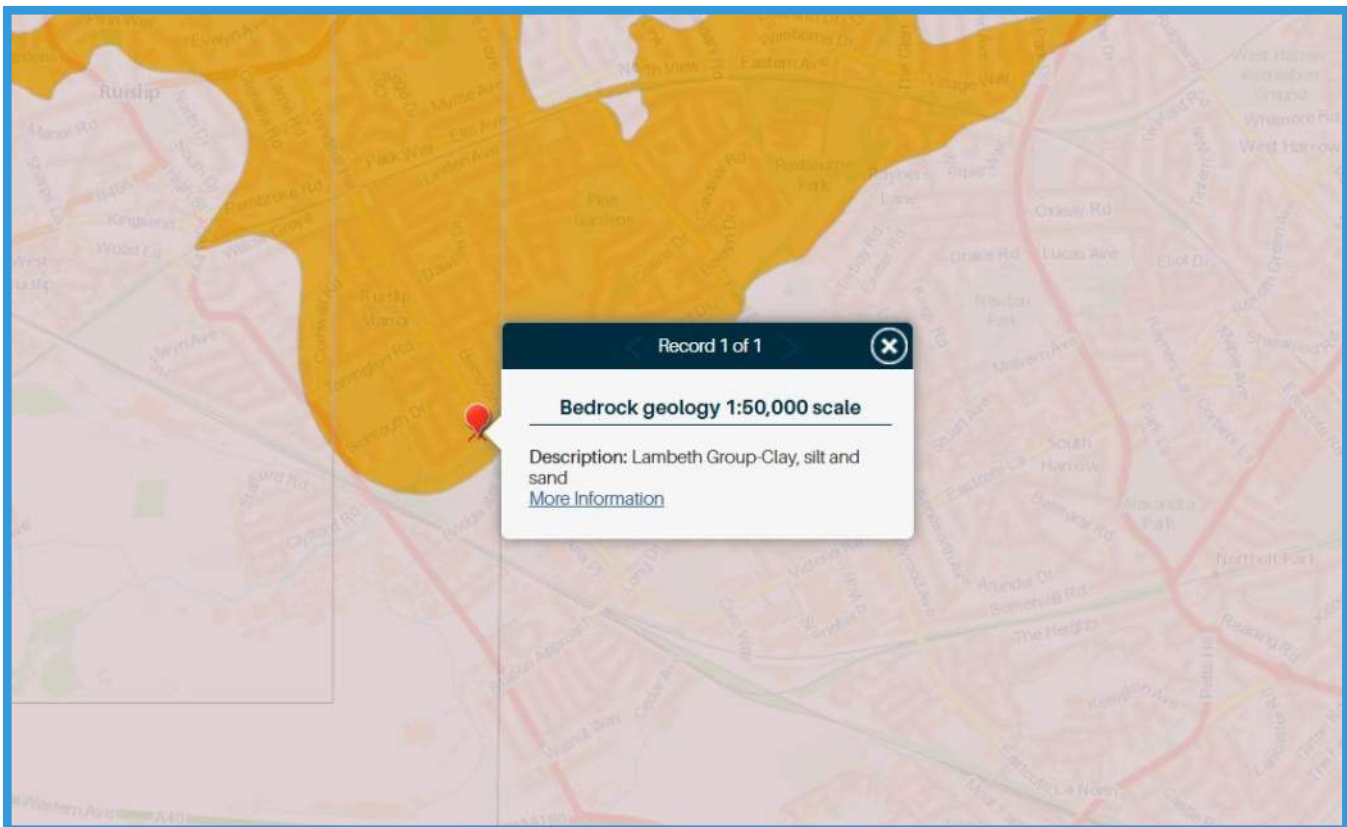
CLIENT

Mrs N Nagpal

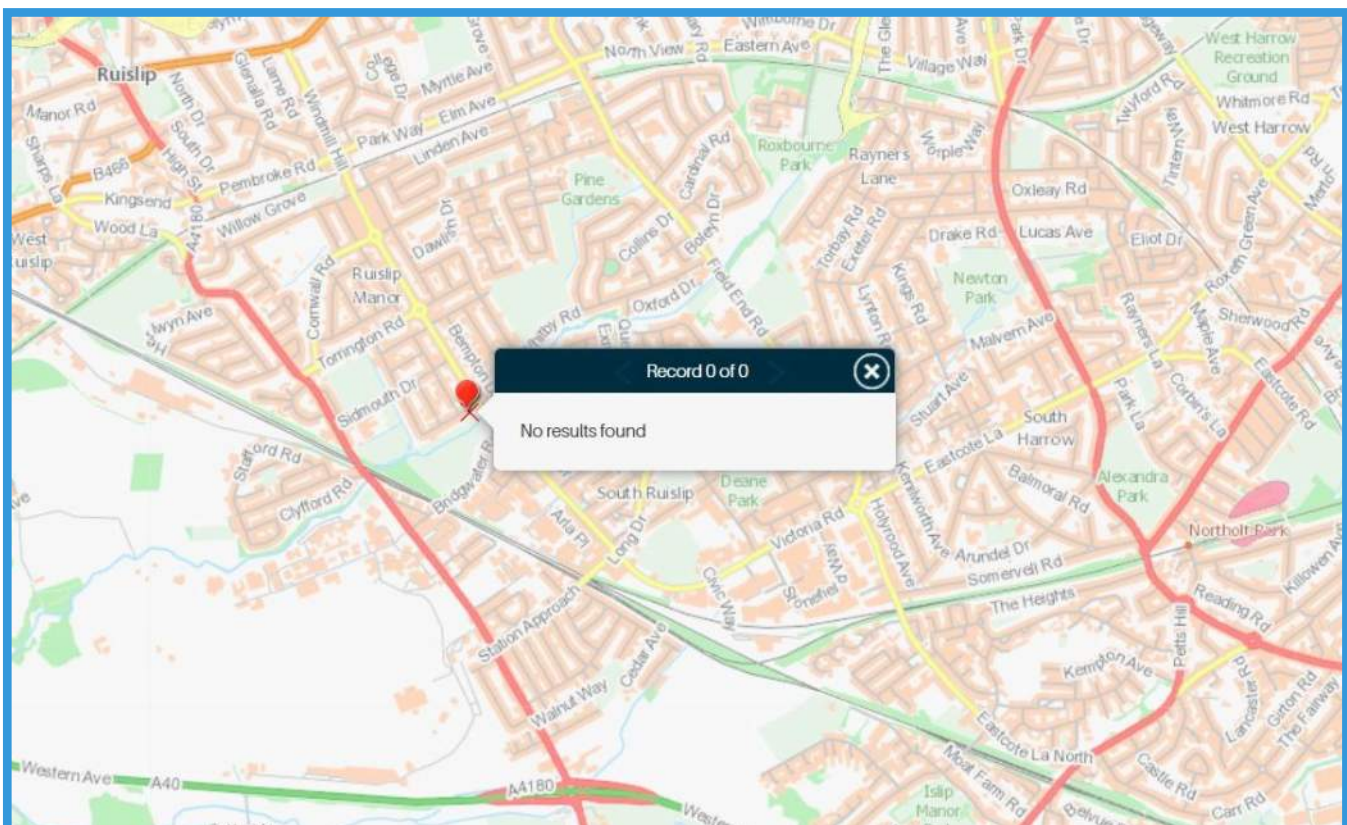
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Issue Date	Project Number	
Drawn by	DRWAING NUMBER	REV
Author	A106- 4.0m	
Checked by		
Checker		

Appendix C

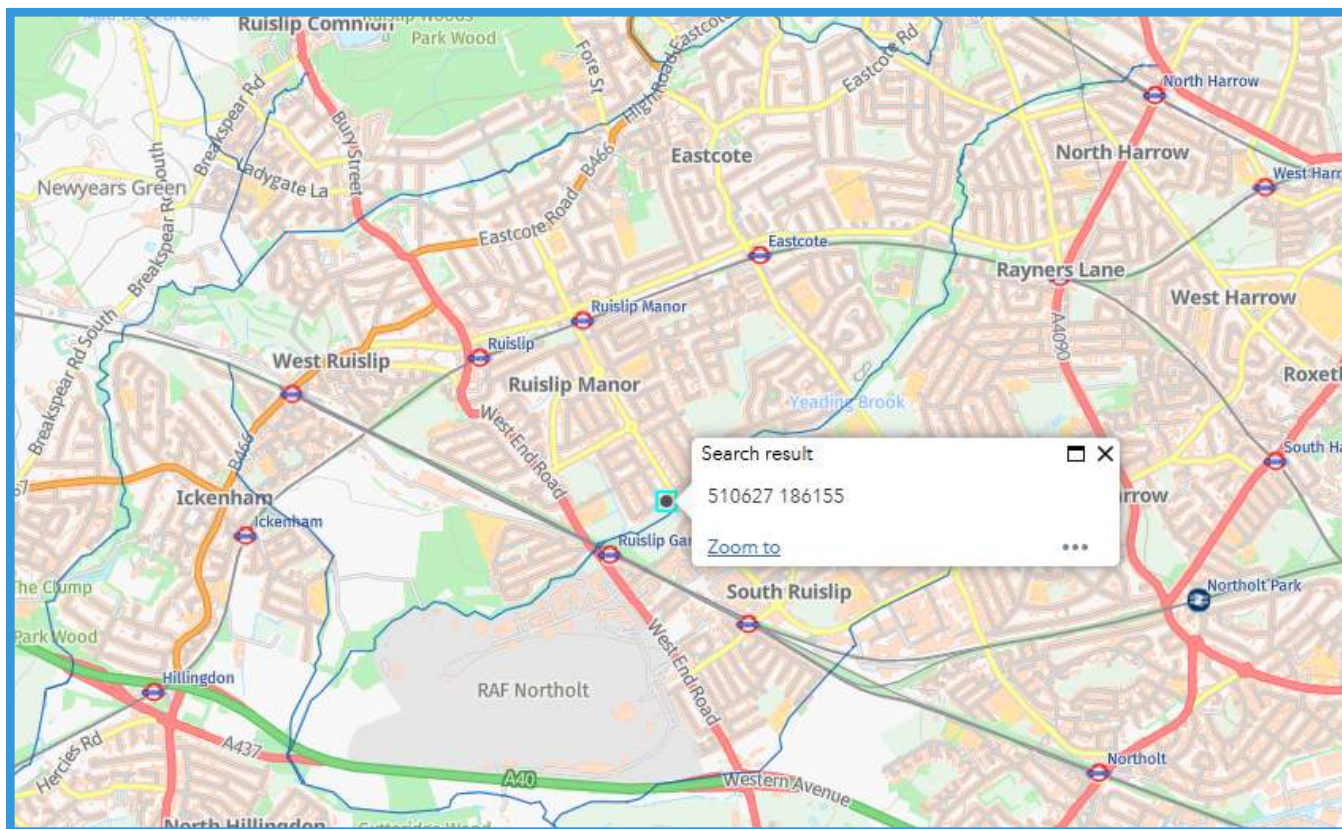
GEOLOGY - BEDROCK - Lambeth Group-Clay, silt and sand



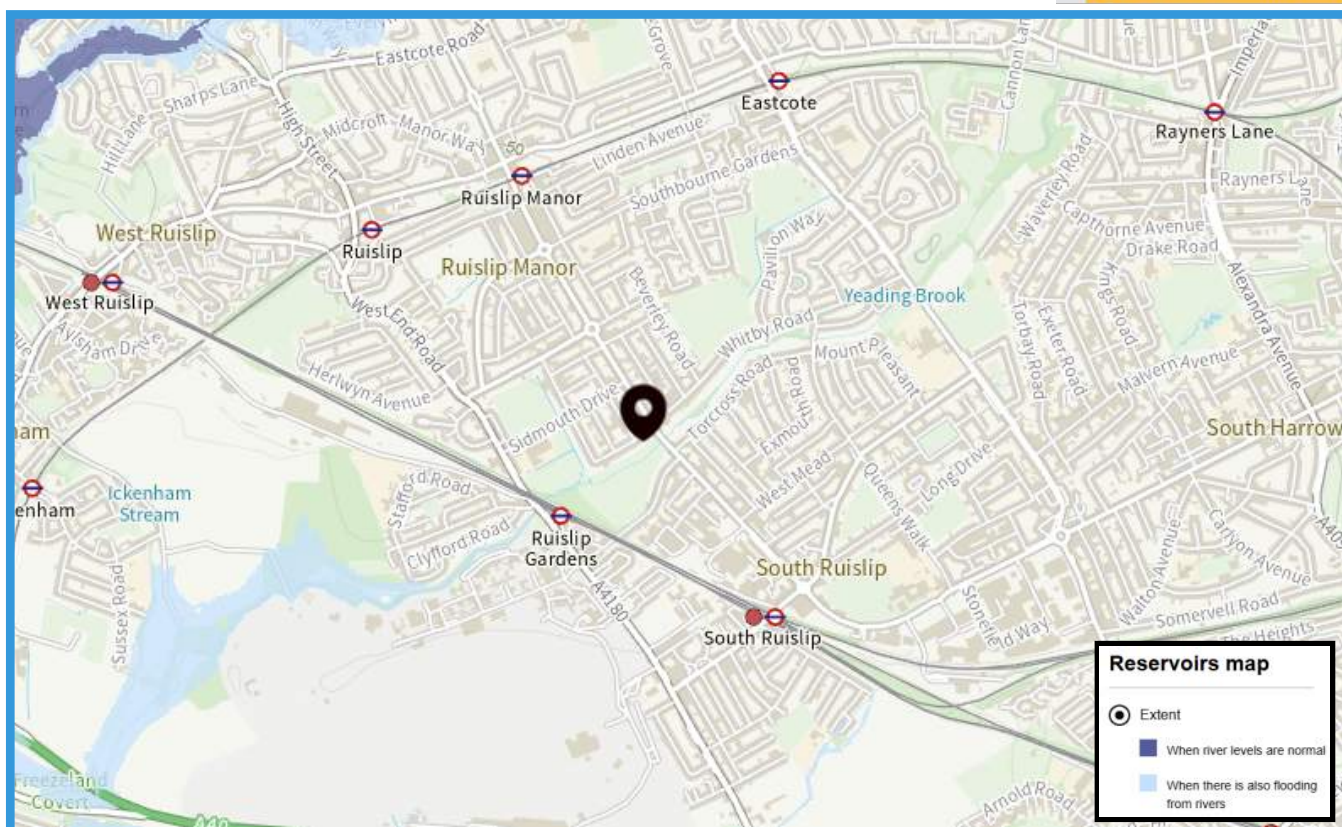
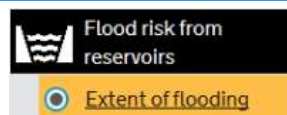
GEOLOGY - SUPERFICIAL DEPOSITS - No results found



Main River Map



Reservoirs Map

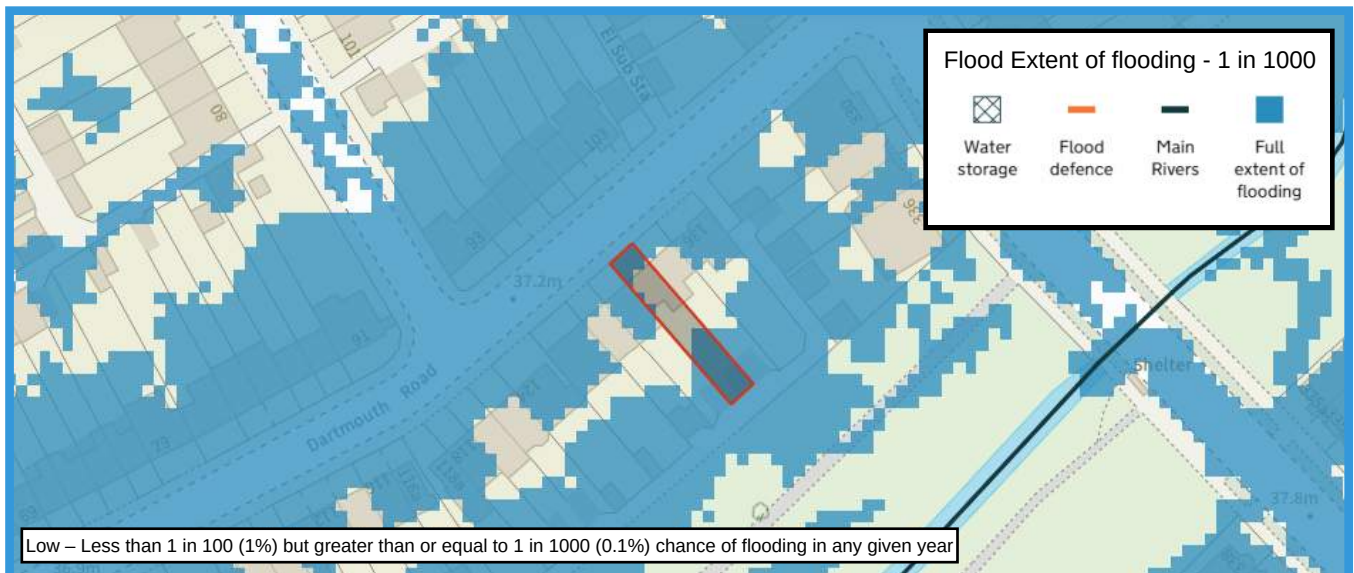
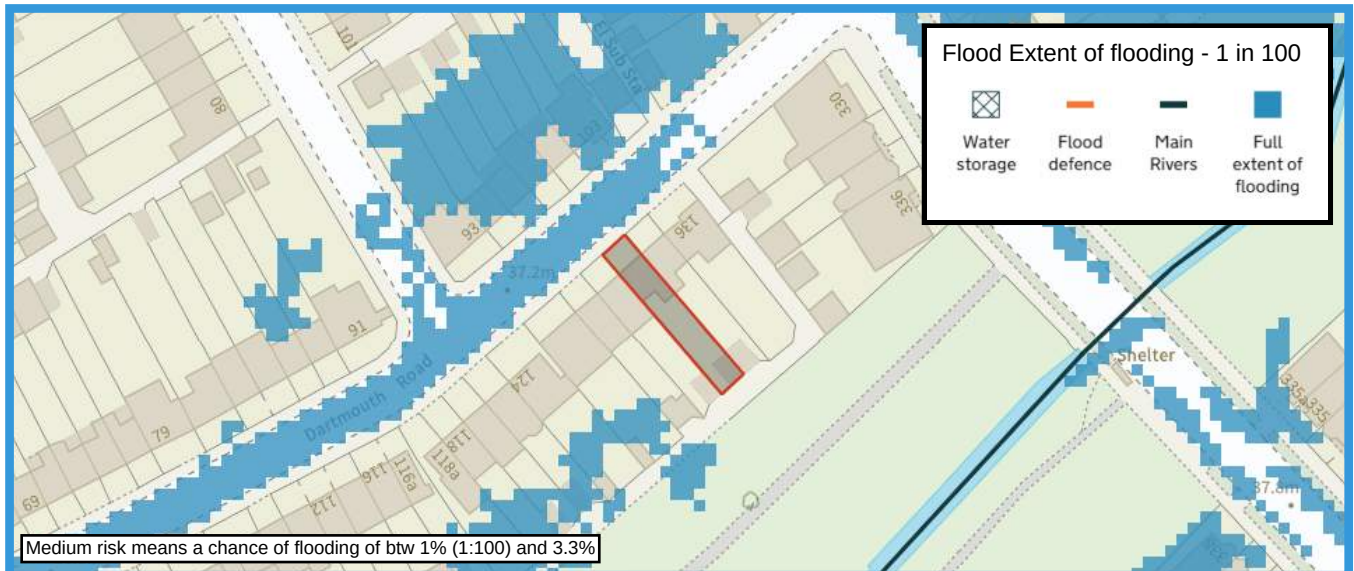
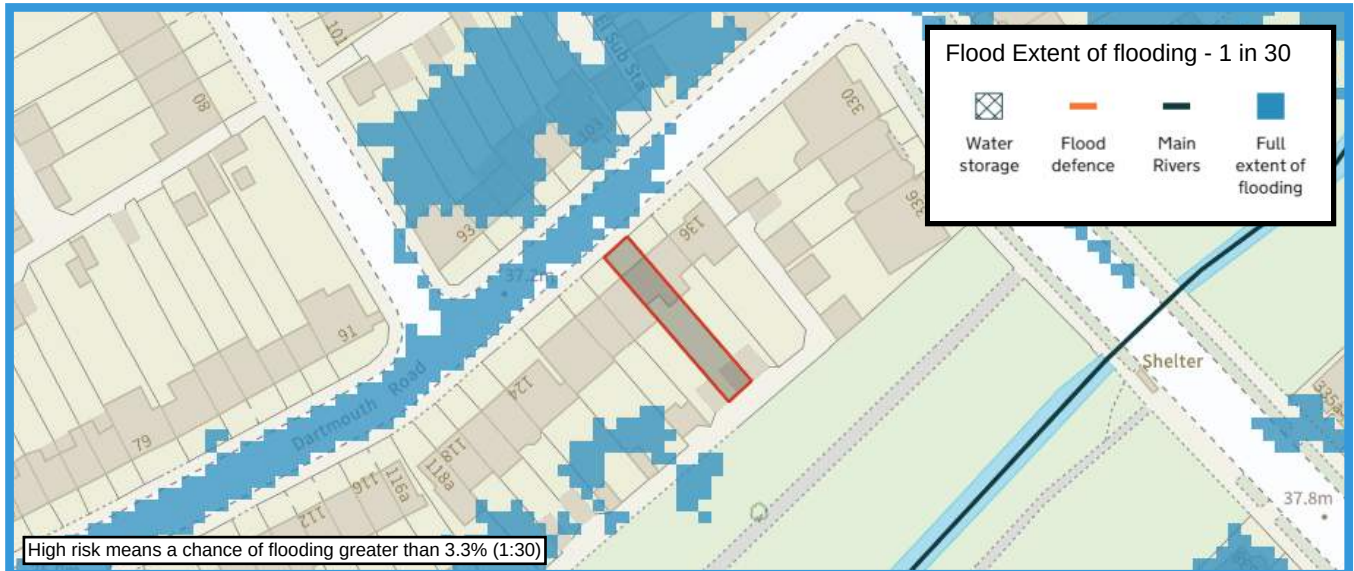


This is the EA Climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

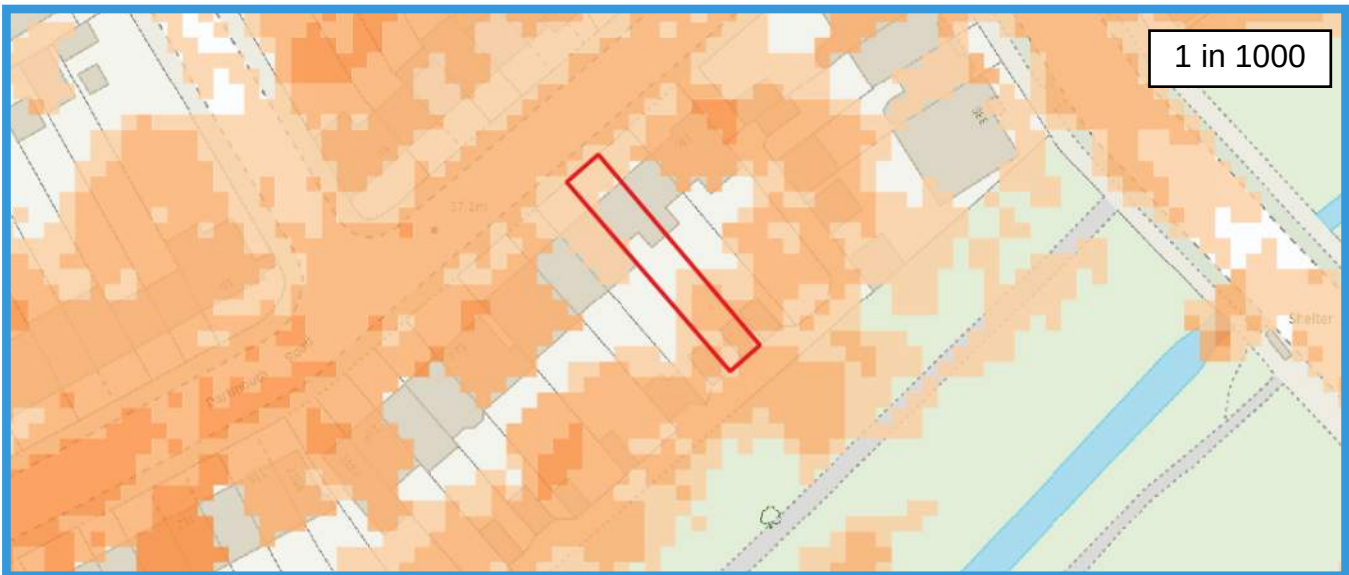
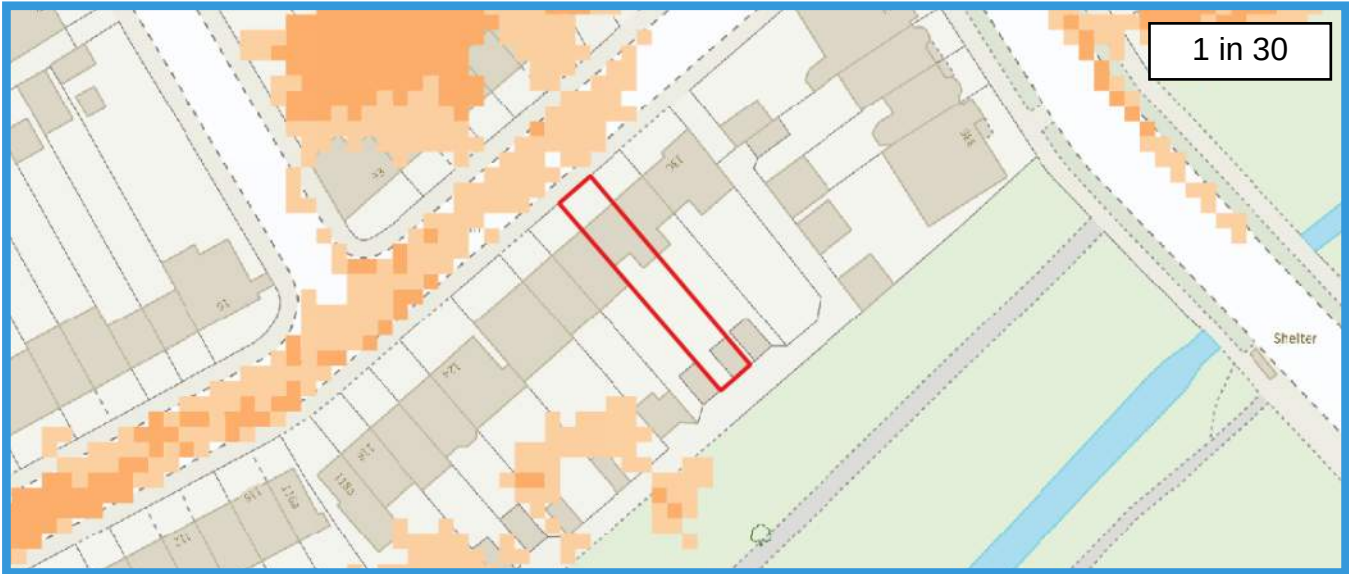
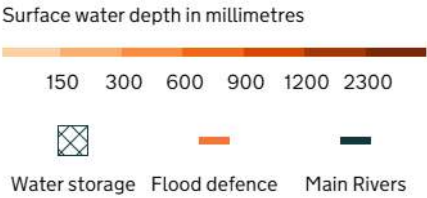
The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios. We have chosen long-term epochs appropriate to support long-term planning and development decisions.

EXTENT

2061 to 2125



WATER DEPTH 2061 to 2125



 Zone 3b - Rivers_1in30_Sea_1in30_defended_extents_CCP1






Site Check Results

Site Check Report generated on Mon Sep 28 2026

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: TQ10628615

Aquifer Designation Map (Bedrock) (England)

TPOLOGY

Secondary A

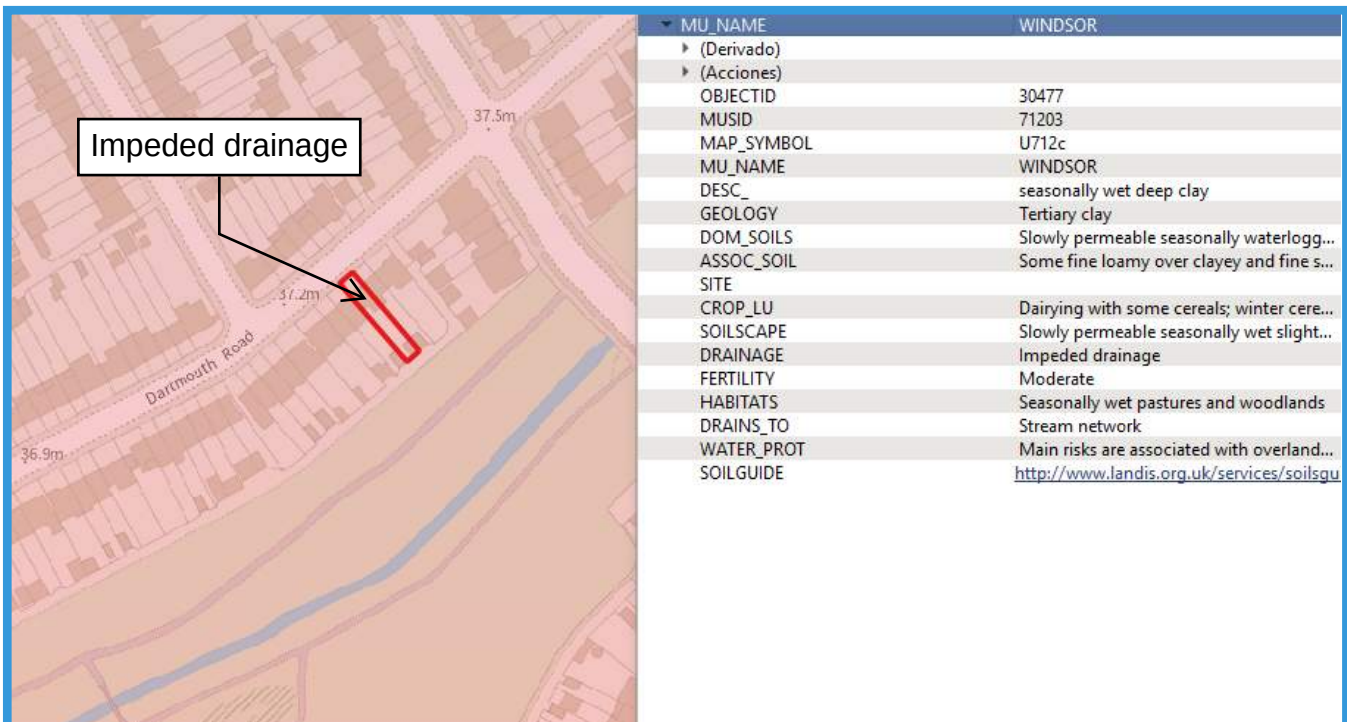
Aquifer Designation Map (Superficial Drift) (England)

No Features found

Source Protection Zones merged (England)

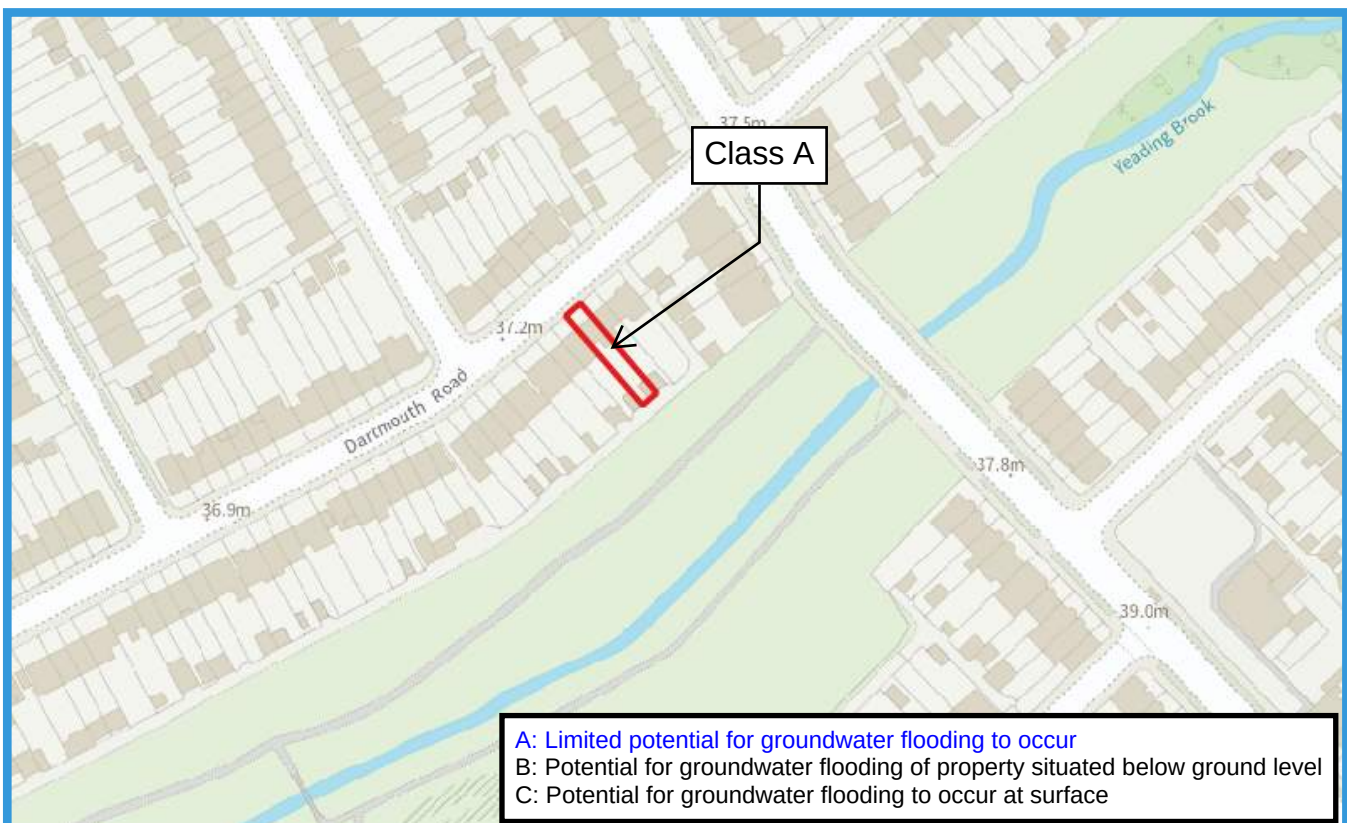
No Features found

SOILSCAPES MAP

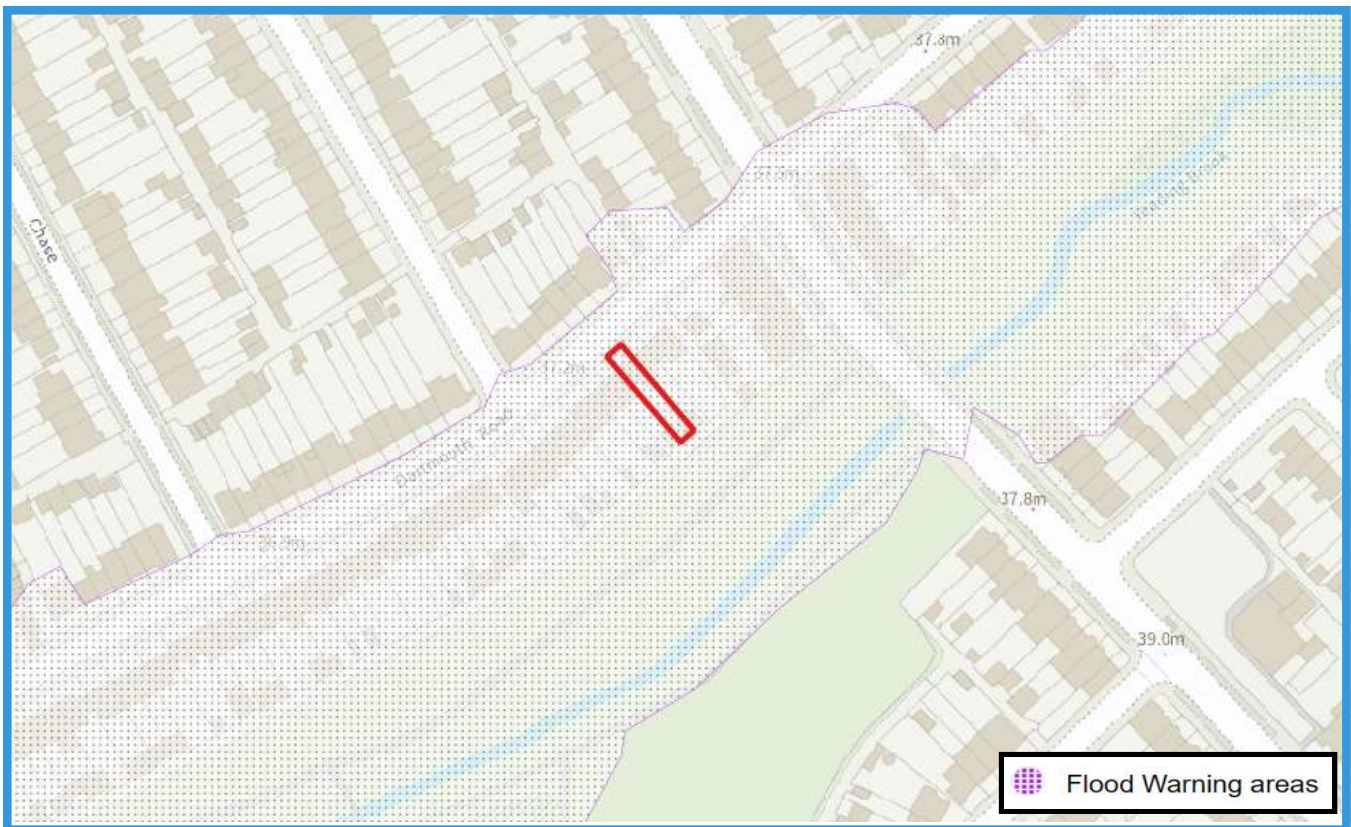


Data originated from the Cranfield University, Land Information System LandIS® Portal [National Soils Map as Public Data [2026], subject to the LandIS Portal Open Licence

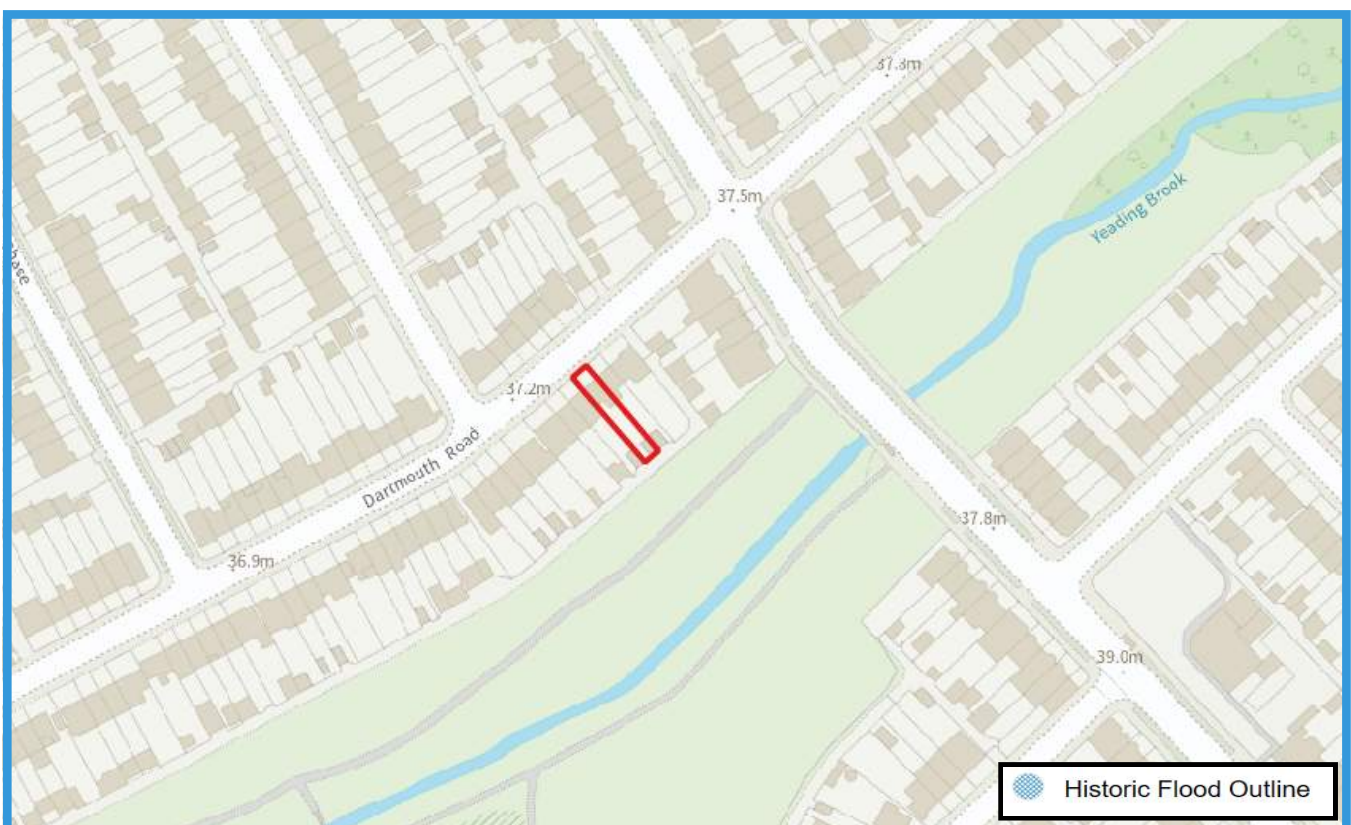
GROUND WATER FLOOD RISK



FLOOD WARNING AREA



HISTORIC FLOOD MAP





Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	510630/186148	28 September 2026 17:23

Your selected location is in flood zone 2, an area with a medium probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)
510630/186148

Scale
1:2,500

Created
28 Sep 2026 17:23

-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



0 20 40 60m

Appendix D

FLOOD LEVELS

Crane Model 2024

Level in Channel



Node	Easting	Northing	2yr	20yr	30yr	50yr	75yr	100yr	100yr +10CC	100yr +17CC	100yr +27CC	100yr +54CC	200yr	1000yr
YW909	510685.7	186123.0	36.77	36.78	36.73	36.85	36.88	36.90	36.93	36.96	37.00	37.09	36.98	37.17

Flood Level at the property



Defended

Node	Easting	Northing	2yr	20yr	30yr	50yr	75yr	100yr	100yr +10CC	100yr +17CC	100yr +27CC	100yr +54CC	200yr	1000yr
1	510619.33	186160.34	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	37.30	37.41	Nil	37.46
2	510629.33	186150.34	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	37.31	Nil	37.34
3	510639.33	186140.34	Nil	Nil	Nil	Nil	Nil	Nil	Nil	36.89	36.95	37.07	36.92	37.16

Undefended (No data)

Node	Easting	Northing	1 in 100	1 in 1000
1	510619.33	186160.34	-	-
2	510629.33	186150.34	-	-
3	510639.33	186140.34	-	-



D - 1 in 2



D - 1 in 20



D - 1 in 30



D - 1 in 50



D - 1 in 75



D - 1 in 100



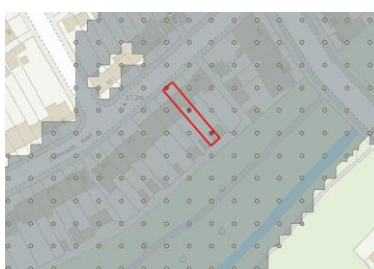
D - 1 in 100 +10CC



D - 1 in 100 +17CC



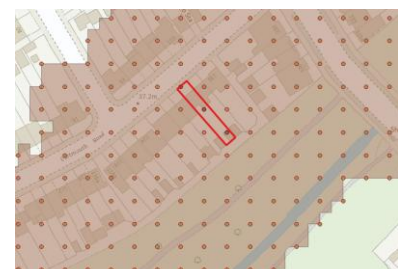
D - 1 in 100 +27CC



D - 1 in 100 +54CC



D - 1 in 200



D - 1 in 1000



U - 1 in 100



U - 1 in 1000