

# **FLOOD RISK ASSESSMENT**

***33 WAINBRIDGE CRESCENT, PILNING, BRISTOL BS35 4LH***

## ***Proposed single storey rear extension***

### **1.0 General**

- 1.1 The site has been defined as being located within Flood Zone 3, as identified by the Environment Agency
- 1.2 Flood Zone 3 is defined as an area with a high probability of flooding that benefits from flood defences.
- 1.3 The land is in an area that has a low chance of flooding from rivers or the sea which means that it is unlikely to flood except in extreme conditions. The chance of flooding each year is less than 1 percent (1 in 100), but greater than or equal to 0.1 percent (1 in 1000). This takes into account the effect of the flood defences

### **2.0 Flood resilient design and construction**

#### ***2.1 Foundations***

- 2.1.1. Traditional concrete strip foundations. Any concrete blocks used in the foundations will be sealed with a solvent free bitumen emulsion (or similar approved impermeable coating) to prevent water movement from the ground to the wall construction.
- 2.1.2. In general, durable materials that will not be affected by water will be used, as will construction methods and materials that promote easy draining and drying.

## **2.2. Floors**

- 2.2.1. Provision of a damp proof membrane. This will be included to prevent the passage of water. The impermeable membrane of 1200 gauge will be used to minimise ripping. All membrane overlaps will be 300mm min.
- 2.2.2. Insulation will be closed cell type to minimize the impact of flood water.

## **2.3. Walls**

- 2.3.1. External wall made up will be traditional full filled cavity construction.
- 2.3.2. All mortar joints will be thoroughly filled to reduce the risk of water penetration.
- 2.3.3. Stainless steel wall ties will be used to minimise corrosion and consequent staining.
- 2.3.4. Cavity insulation will incorporate rigid closed cell materials in order to maintain integrity and have low moisture take up.

## **2.4. Doors and windows**

- 2.4.1. French door to be sealed around frame.

## **2.5 Services**

- 2.5.1. Generally, all services will be sealed with expanding foam or similar closed cell material. Under floor services using ferrous material will be avoided.
- 2.5.2. Pipework/fittings: All service entries will be sealed with non- porous waterproof cement.

- 2.5.3. Electrical sockets will be installed at 450mm above finished floor level to minimise damage and allow speedy re-occupation.
- 2.5.4. Electrical ring mains will be installed at 1st floor level with drops to ground floor sockets and switches.
- 2.5.5. Existing heating system will be extended
- 2.5.6. Surface water will be dealt with by connecting new rainwater goods to existing Wessex Water asset

## **2.6 Owners actions**

- 2.6.1 The owner to register with the Government's early warning flood detection system, if not already done so. The service delivers automated voice messages to warn of flood risks in times of concern. If appropriate under advice from the Environment Agency staff will execute a safe exit plan.
- 2.6.2 Fixed notices will be provided advising safe procedures to be adopted. The notice will display the emergency phone number that needs to be contacted (Refer to Appendix B).

## **2.7 Evacuation plans**

- 2.7.1 If flooding occurred within the site area, to a level which prevented occupants and visitors from evacuating from the dwelling, they would be advised to take refuge on the first floor until the water level has dropped to a suitable level, or until help arrives.
- 2.7.2 On the first floor, the owner will have stored The Emergency Flood Kit which will contain :

- Insurance emergency helpline number, local council and emergency telephone numbers, local radio frequencies
- Torch
- Batteries (not rechargeable)
- Portable radio (preferably wind up)
- Mobile phone
- First aid kit
- Bottled water
- Non-perishable food items (energy bars)
- Blankets and warm clothes
- Wash kit and essential toiletries (toilet roll)
- Camera to record damage for insurance
- Emergency cash
- Wellington boots/waterproof clothing

## APPENDIX

## Flood map for planning

Your reference	Location (easting/northing)	Created
<b>33 Wainbridge Crescent</b>	<b>355584/185070</b>	<b>16 Feb 2024 15:51</b>

**Your selected location is in flood zone 3  
– an area with a high probability of flooding.**

### This means:

- you may need to complete a flood risk assessment for development in this area
- you should ask the Environment Agency about the level of flood protection at your location and request a Flood Defence Breach Hazard Map (You can email the Environment Agency at: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk))
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (find out more at [www.gov.uk/guidance/flood-risk-assessment-standing-advice](http://www.gov.uk/guidance/flood-risk-assessment-standing-advice))

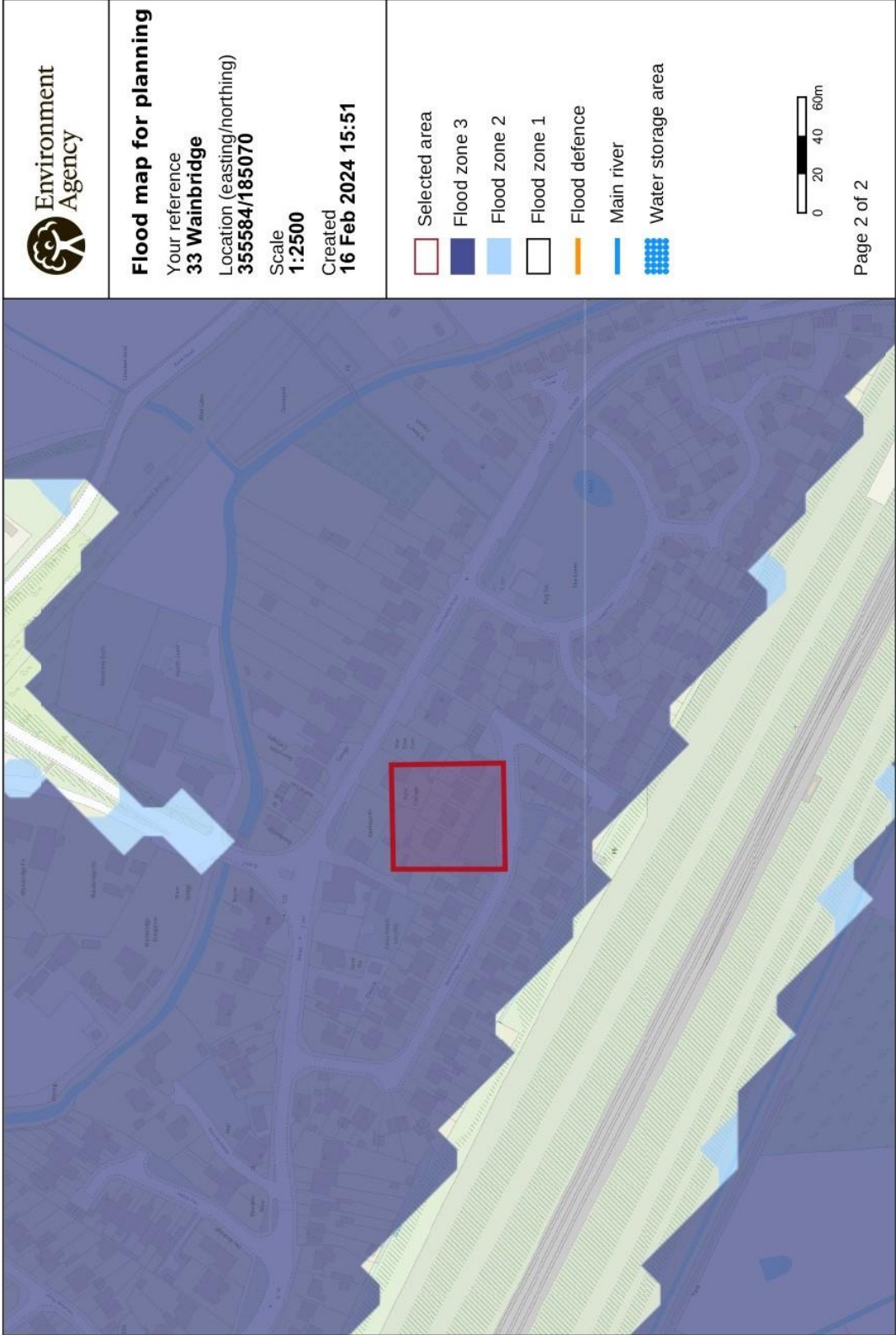
### Notes

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 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



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Pierre Baptiste  
cadqwest@gmail.com

**Our ref:** 343680-WX  
**Date:** 5th February 2024

Dear Pierre Baptiste,

Thank you for your enquiry which was received on 19th January 2024. We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

**Abstract**

Name	Product 4
Description	Detailed Flood Risk Assessment Map for <b>33 Wainbridge Crescent, Piling, Bristol, BS35 4LH</b> <b>NGR: ST5558285070</b>
Licence	<a href="#">Open Government Licence</a>
Information Warnings	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply.</i>
Attribution	Contains Environment Agency information © Environment Agency and/or database rights.  Contains Ordnance Survey data © Crown copyright 2017 Ordnance Survey 100024198.

**Open Data**

The following Environment Agency published datasets are now available on the weblink below as part of the Government’s ‘Open Data’ project and are available for you to download free of charge.

Environment Agency published datasets: <https://data.gov.uk/data/search?publisher=environment-agency&unpublished=false>

You will need to search and select the name of the following datasets to take you directly to the weblink to enable you to download the data:

- Flood Map for Planning (Rivers and the Sea) – Flood Zones 2 and 3
- Flood Map for Planning (Rivers and Sea) – Areas Benefiting from Defences
- Flood Map for Planning (Rivers and Sea) Flood Storage Areas
- Flood Map for Planning – Spatial Flood Defences (without Standard attributes)
- Recorded Flood Outlines
- Historic Flood Map
- Risk of Flooding from Surface Water Extent for:
  - 3 percent annual chance
  - 1 percent annual chance
  - 0.5 percent annual chance

You can also access the Flood Map for Planning here: <https://flood-map-for-planning.service.gov.uk/>

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Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS  
Email: [wessexenquiries@environment-agency.gov.uk](mailto:wessexenquiries@environment-agency.gov.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

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You can also access the Risk of Flooding from Surface Water maps and Risk of Flooding from Reservoirs information here: <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>

If you have requested this information to help inform a development proposal, then you should also note the detail in the attached advisory text on the use of Environment Agency Information and Further Guidance for FRAs.

#### **Recorded Historic Flood Events**

We no longer produce pdf copies of the Historic Flood Map. This information is available to search select, and download free of charge as part of the Government's 'open data' as

- Recorded Flood Outlines
- the Historic Flood Map

These are GIS layers and can be downloaded from: <https://data.gov.uk/publisher/environment-agency>

Please note: we cannot guarantee that this is an exhaustive list of all past flood events in this location. All reasonable care has been taken to ensure that the historical flood event data is as accurate as possible. The Environment Agency will update its records if new evidence emerges.

#### **ASEA Coastal Inundation model**

South Gloucestershire Council, Bristol City Council and the Environment Agency are working together to improve flood defences and create new habitats for important wildlife species as part of the Avonmouth Severnside Enterprise Area (ASEA) Ecology Mitigation and Flood Defence Project. For further details about this project, including progress to date, please see the following link:

<https://www.asea-flood-ecology.co.uk/>

Contractors BMMjv have been on site since summer 2019 and have commenced work at each sub section area. Please refer to our [website](#) for the latest programme for completion dates.

As part of this project, a new coastal inundation model was produced in 2018 for the Avonmouth/Severnside area to represent the impact of the new flood defence.

The 2018 version of the model includes pre development (i.e. representing the defences as they were before work commenced in 2020) and post development (representing the impact of the defences currently in construction) scenarios, for both present day and future dates (2076 and 2098). A scenario representing the breach of the proposed flood defences in 2098 was also modelled in 2018. However, the 2018 version of the model used UKCP09 sea level rise allowances, which have been superseded by UKCP18 allowances.

Please let us know if you wish to obtain a copy of the modelling report or model.

Due to changes in the flood defence design and a need to re-run breach scenarios in the Bristol City Council local authority boundary, we are only supplying post development 2098 depths and levels and post development 2098 breach scenarios from the 2018 version of the model as this is currently the best available data.

A further update of the ASEA coastal inundation hydraulic model is underway with post-development scenarios (including 0.5% AEP / 1 in 200 year) representing the final detailed design of the flood defence scheme (Defended) in the present day and future epochs (2083, 2098 and 2123) and separate breach scenarios. The model will include the latest UKCP18 sea level rise guidance. The results from this modelling update are anticipated later in 2024.

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We understand that Bristol City Council are updating their SFRA Level 2 and it depends on timing as to whether the updated modelled results will be available or have to be added in at a later date.

#### **Flood Levels**

From the ASEA model we have provided the flood level and depth for the pre and post development 2076, post development 2098 and breach 2098 for your proposed site:

##### Pre Development 2076 (with existing defences)

Pre Development 2076 0.5% (1 in 200 year) AEP Depth	1.20m	Depth
Pre Development 2076 0.1% (1 in 1000 year) AEP Depth	1.65m	Depth
Pre Development 2076 0.5% (1 in 200 year) AEP Level	7.66mAOD	Level
Pre Development 2076 0.1% (1 in 1000 year) AEP Level	8.10mAOD	Level

##### Post Development 2076 (new defences in place)

Post Development 2076 0.5% (1 in 200 year) AEP Depth	0.00m	Depth
Post Development 2076 0.1% (1 in 1000 year) AEP Depth	1.39m	Depth
Post Development 2076 0.5% (1 in 200 year) AEP Level	0.00mAOD	Level
Post Development 2076 0.1% (1 in 1000 year) AEP Level	7.84mAOD	Level

##### Post Development 2098 (new defences in place)

Post Development 2098 0.5% (1 in 200 year) AEP Depth	0.00m	Depth
Post Development 2098 0.1% (1 in 1000 year) AEP Depth	2.00m	Depth
Post Development 2098 0.5% (1 in 200 year) AEP Level	0.00mAOD	Level
Post Development 2098 0.1% (1 in 1000 year) AEP Level	8.16mAOD	Level

##### Post Development Breach of new defences 2098

Post Development 2098 0.5% (1 in 200 year) AEP Depth (Breach Composite)	0.00m	Depth
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N.B. 0.00 (m or mAOD) indicates the data does not reach the site.

N.B. Levels and depths have been extracted based upon the site boundary plan provided.

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### **Strategic Flood Risk Assessment (SFRA)**

When preparing your Flood Risk Assessment (FRA) to support the planning application, you should also refer to South Gloucestershire's Level 1 SFRA available to download at the following link:

<https://www.southglos.gov.uk/documents/pte110277.pdf>

As outlined above we understand that in due course the SFRA Level 2 for Bristol will be updated by the Local Planning Authority but currently there are no timescales for this.

### **Planning**

If you have questions regarding the planning nature of your enquiry, or require advice on floor levels, please contact our Sustainable Places team on [NWX.SP@environment-agency.gov.uk](mailto:NWX.SP@environment-agency.gov.uk). Please be aware that we now charge for planning advice when consulted on pre-application enquiries. This new approach provides advice to developers in two ways. Firstly, there is the provision of 'free' advice available to everyone where we give a preliminary opinion on a proposed development. This sets out the environmental constraints together with any issues this raises for us. Should you wish us to review in detail any of these issues then we can do this through a chargeable scheme aimed at recovering our costs.

### **Flood Defences**

We can confirm that this site is not located within 1 kilometre of any formal flood defences.

Please note that flood defences can increase water levels elsewhere eg through channels being restricted by defences, or because defences prevent flood water flowing back into the river channel.

### **Extreme Tide Level (Still Water) Information**

**IMPORTANT.** If you are carrying out a Flood Risk Assessment you should also review the Still Water Tide Level data from the Coastal Flood Boundary Study 2018. You should be mindful that in some locations the predicted Still Water Tide Levels are higher than the locally modelled water levels provided above. When this is the case the higher water levels should be taken into account in your Flood Risk Assessment.

For more information on climate change allowances please see guidance on the Gov.UK website here: [Flood risk assessments: climate change allowances - GOV.UK](#)

The updated Still Water Tide Level Data (baseline 2017) from the Coastal Flood Boundary Study 2018 is also available to download from our [data.gov.uk](https://data.gov.uk) site. Please search for 'Coastal Design Sea Levels'.

For your information you can view the Coastal Flood Boundary Study 2018 technical summary report and the user guide below.

<https://www.gov.uk/government/publications/coastal-flood-boundary-conditions-for-uk-mainland-and-islands-design-sea-levels>

### **Environmental Permit for Flood Risk Activities**

In addition to any other permission(s) that you may have already obtained e.g. planning permission, you may need an environmental permit for flood risk activities (formerly known as Flood Defence Consent prior to 06 April 2016) if you want to do work:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence

For further information and to check whether a permit is required please visit:

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>.

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For any further advice, please contact your local Environment Agency Office, at [bridgwater.frap@environment-agency.gov.uk](mailto:bridgwater.frap@environment-agency.gov.uk).

**Further Information**

We advise that you also contact the Flood Risk Management Team, by email [LeadLocalFloodAuthority@southglos.gov.uk](mailto:LeadLocalFloodAuthority@southglos.gov.uk), or by telephone, 01454 868000, at South Gloucestershire Council, Council Offices, Badminton Road, Yate, Bristol, BS37 5AF as they may be able to provide further advice with respect to localised flooding and drainage issues.

Further details about the Environment Agency information supplied can be found on our website: <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for FRAs:

<https://www.gov.uk/planning-applications-assessing-flood-risk>  
<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

We hope you find this information helpful, and it is provided subject to the guidance below, which we strongly recommend you read.

Yours sincerely

Dawn Fullthorpe

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**Enc:** Use of Environment Agency Information for Flood Risk Assessments (below)

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## **Use of Environment Agency Information for Flood Risk Assessments (FRAs)**

### **Important**

Use of Environment Agency data: you should note that

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment (FRA) where one is required, but the use of Environment Agency information does not constitute such an assessment on its own.
2. As part of your data request, we have provided all of the modelled data we hold for your location. Please note that some of our modelled information may have been produced for purposes other than for flood zone generation. This may mean that some of the modelled data you have been provided with has a lower confidence level, and has not been used in producing our flood map, nor definitively reflects the predicted flood water level at the property/development site scale. To check the suitability of the use of this information in your FRA please contact your local Partnership & Strategic Overview (PSO) team.
3. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or surface water runoff. The information produced by the Local Planning Authority and the Lead Local Flood Authority (LLFA) may assist in assessing other sources of flood risk.
4. Where a planning application requires a FRA and this is not submitted or deficient, the Environment Agency may well raise an objection.
5. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your Local Planning Authority.

### **Pre-Planning Advice from the Environment Agency**

If you have requested this information to help inform a development proposal, then we recommend that you undertake a formal pre-application enquiry using the form available from our website:

Pre-application Preliminary Opinion:

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Pre-application Charged Service:

<https://www.gov.uk/government/publications/planning-advice-environment-agency-standard-terms-and-conditions>

Depending on the enquiry we may also provide advice on other issues related to our responsibilities, including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

### **Flood Risk Assessment (FRA) Guidance**

You should refer to the Planning Practice Guidance of the National Planning Policy Framework (NPPF) and the Environment Agency's Flood Risk Standing Advice for information about Flood Risk Assessment (FRA) for new development in the different Flood Zones. These documents can be accessed via:

National Planning Policy Framework Planning Practice Guidance:

<http://planningguidance.planningportal.gov.uk/>

Environment Agency advice on FRAs:

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<https://www.gov.uk/flood-risk-assessment-for-planning-applications#when-to-follow-standing-advice>

<https://www.gov.uk/government/publications/planning-applications-assessing-flood-risk>

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