

Flood Risk Assessment

To accompany a planning application for an
extension and non-habitable outbuilding to
67 Roseville Road, Hayes, London,
UB3 4QY

Prepared by

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1 Executive Summary

- A The domestic extension and ancillary outbuilding are minor development;
- B The extension is at a Low risk from surface water flooding;
- C The rear of the site, at the location of the outbuilding, is at a Medium risk from surface water flooding;
- D The site is at a Low risk from ground water and reservoir flooding;
- E Floor levels in the extension are set no lower than the existing floor level and provide a satisfactory freeboard greater than 600mm;
- F The outbuilding will not contain sleeping accommodation and is classed as non-habitable, it is of low intrinsic value with only transient occupancy.
- G Floor levels in the outbuilding cannot be raised 600mm above the estimated flood level;
- H Floor levels in the outbuilding are to be set as high as is reasonably practicable;
- I Flood resilience and mitigation methods will be therefore implemented in the outbuilding in line with a “water exclusion” strategy in lieu of an elevated floor;
- J Access/egress routes are existing, retained and are not affected;
- K There is no documented evidence of flood risk from any other sources;
- L The development does not impact on flood risk elsewhere;
- M Assuming the recommended resilience, mitigation and evacuation procedures can be maintained over the lifetime of the development, the proposed minor development to, and within the curtilage of an existing dwelling is considered acceptable.

Client actions required

- I Complete a personal flood plan.

Designer actions required

- 1 Ensure plans show the FFL of the outbuilding is raised as high as is reasonably practicable.

- 2 Ensure plans show the FFL of the extension is no lower than the existing FFL of the dwelling.
- 3 Ensure plans and specification for the outbuilding are updated to incorporate flood resilience and resistance measures prior to submission.
- 4 Ensure the plans confirm that the outbuilding **will not contain any sleeping accommodation.**
- 5 Confirm the design intention to manage any additional surface water arising at source in line with best practice and the drainage hierarchy.

2 Introduction

2.1 Site location

The project is at 67 Roseville Road, Hayes, UB3 4QY (see Figure 1).

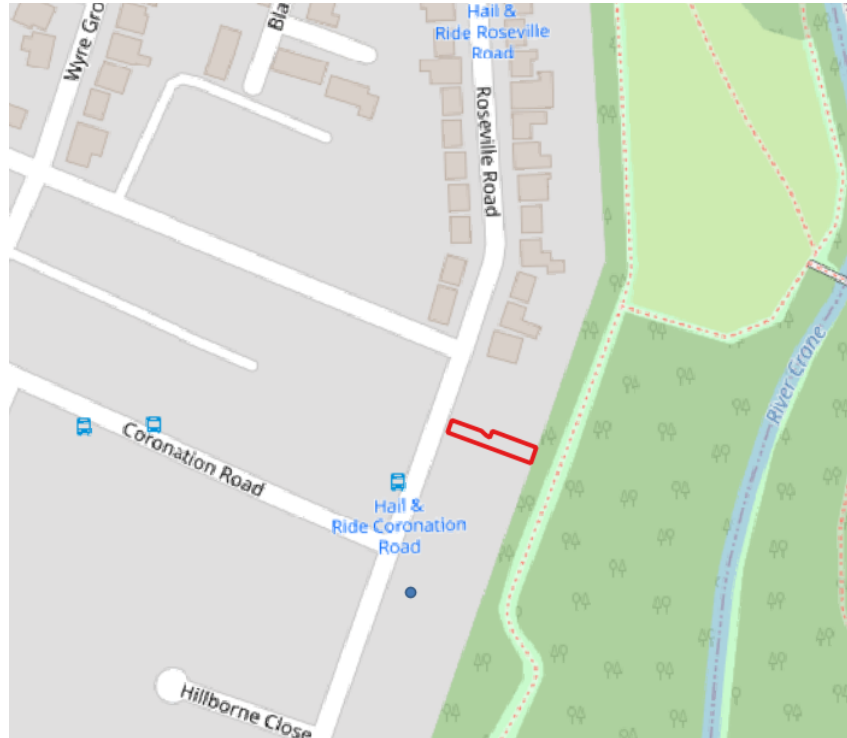


Figure 1: Site location plan, as indicated with North topmost. (source: Open Streetmap)

2.2 Development description

The proposal is for a domestic extension and non-habitable outbuilding not exceeding 250m² in footprint. The site is an existing developed site and the proposed work is classed as minor development. The outbuilding is considered ancillary to the main dwelling with only transient occupancy and will not contain any sleeping accommodation (i.e. it is considered to be non-habitable).

The proposed layouts and sections are as provided under separate cover.

2.3 Site geology

Geological mapping data from within the vicinity indicate Taplow Gravel Member - Sand and gravel, however this would require confirmation on site. If available on site, the superficial deposits should offer medium - poor permeability. Infiltration SuDS therefore may be viable (subject to site testing and ground water levels).

3 Policies

In preparation for this Flood Risk Assessment (FRA), National Planning Policy Framework^[5] and British Standards on Assessing and Managing Flood Risk^[2] were reviewed, and their related policies are, where applicable, referred to in this report.

The Environment Agency has been consulted in order to establish the flood zone of the proposed site.

In addition, planning policies from the Local Authority were also reviewed including its Strategic Flood Risk Assessment.

Some of key policies are summarised as below.

3.1 Standing Advice

Generally the following applies: “Apart from habitable basements, domestic extensions within the curtilage of the dwelling (see GDPO definition of, minor development) and non-domestic extensions with a footprint of less than 250 m² will not require a detailed FRA. These applications should demonstrate that the risk of flooding from all sources has been assessed. The main sources of flooding are likely to be tidal, surface water and sewer flooding.”

3.2 Environment Agency Guidance on Standing Advice

The FRA should be:

- appropriate to the scale, nature and location of the development;
- proportionate to the degree of flood risk.

For all development covered by standing advice, a FRA should include:

- the site address;
- a description of the development;
- the estimated flood level for your development, taking into account the impacts of climate change over its lifetime;
- details of the finished floor levels;
- details of your flood resistance and resilience plans;
- any supporting plans and drawings any other information.

Floor levels

- floor levels are set at least 600 millimetres (mm) above the estimated flood level. You may be able to reduce this to 300mm if there is a high level of certainty about your estimated flood level. If there is a particularly high level of uncertainty it may need to be increased;
- if floor levels cannot be raised in this way, you will also need to include extra flood resistance and resilience measures. These measures should protect the property to at least 600mm above the estimated flood level.

The building design should also:

- prioritise excluding flood water where possible;
- speed recovery in case water gets in.

4 Flood risk analysis

4.1 Sources of potential flooding

Flood risk from various sources to the site are analysed in this section.

4.1.1 Flood risk from sea and rivers

Flooding can occur from the sea due to a particularly high tide or surge, or combination of both.

The site is not at risk from tidal flooding.

Flooding can also take place from flows that are not contained within the channel due to high levels of rainfall in the catchment.

With reference to the DEFRA flood mapping (01/2026 release date), Figure 2, the site lays in Flood Zone 1. Hence the site is at a Very Low, (less than a 1 in 1000yr annual probability) risk from fluvial flooding.



Figure 2: Flood Zone 1 mapping from DEFRA/EA data. The data set includes an allowance for climate change.

4.1.2 Flood risk from groundwater

Groundwater flooding occurs when water levels in the ground rise above surface levels. It is most common in low-lying areas underlain by permeable rock (aquifers), usually due to extended periods of wet weather. The site's geology is classified as having a Medium susceptibility to groundwater flooding ($\geq 25 < 50\%$).

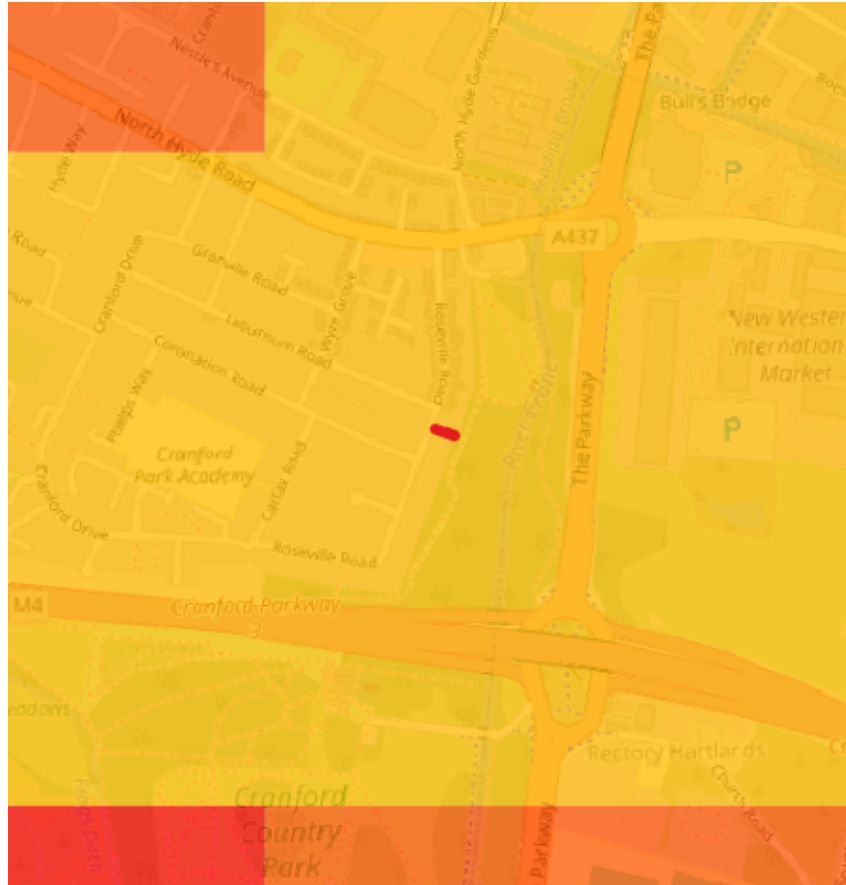


Figure 3: Susceptibility to ground water flooding. The site falls within an area at Medium risk

Since the proposed development does not involve any basement elements, the impact of groundwater flooding on the proposed site will be minimal.

Hence, the risk of groundwater flooding on the proposed site can be considered to be negligible.

4.1.3 Flood risk from sewer and highway drains

Flooding occurs when combined, foul or surface water sewers and highway drains are temporarily over-loaded due to excessive rainfall or due to blockage.

There are no indicators to Sewer flooding at the site.

Hence, the risk of sewer flooding to the proposed site can be considered to be negligible.

Highway flooding manifests as surface water flooding at the site.

4.1.4 Flooding risk from surface water

Flooding occurs when rainfall fall on a surface (on or off the site) which acts as run-off which has not infiltrated into the ground or entered into a drainage system.

Present day risk With reference to the 25.03.2025 release of Flood Map for Planning data set, Figure 4, the footprint of the extension is in an area currently at a Nil (less than a 1 in 1000yr) risk from surface water flooding. The rear of the site is at Low risk and the highway to the front is at High risk.

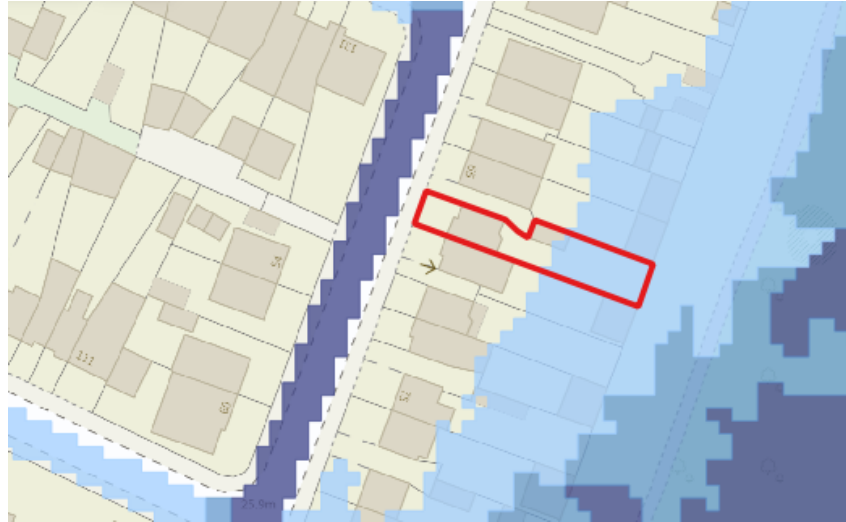


Figure 4: SW flood risk mapping of current risk. The site is in an area currently at Medium Risk

Future risk With reference to the 17.09.2025 release of the E.A online SW data set, Figure 5, the extension will remain at a very Low risk (less than 1 in 1000yr) from surface water flooding. The risk at the location of the outbuilding increases to a Medium risk (> 1 in 100yr).

For the design period, 1 in 100yr+ CC, the probability of occurrence for any depth of surface water flooding at the development is shown in Table 1 where:

“The chance of flooding beyond the stated depth (for example 0.2m) is given as follows:

- ‘High’ - means more than 3.3% (1 in 30) chance of a flood each year
- ‘Medium’ - means between 1% (1 in 100) and 3.3% (1 in 30) chance of a flood each year
- ‘Low’ - means between 0.1% (1 in 1000) and 1% (1 in 100) chance of a flood each year
- ‘Very low’ - means less than 0.1% (1 in 1000) chance of a flood each year”

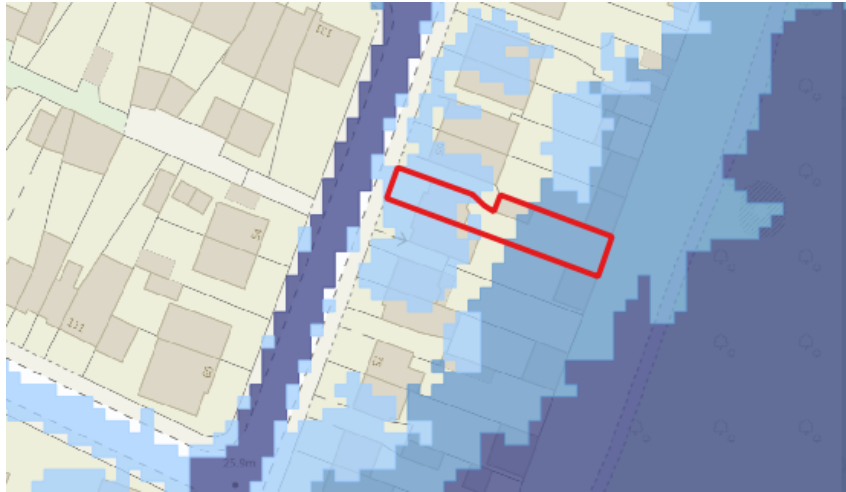


Figure 5: SW flood risk mapping including climate change. The rear of site is in an area at a Medium future risk

Depth	Probability of occurrence
0.2m	Very Low at the extension, Low at the outbuilding
0.3m	Very Low at the extension, Low at the outbuilding
0.6m	Nil at the extension, Very Low at the outbuilding
0.9m	Nil at the extension, Very Low at the outbuilding
1.2m	Nil at the extension, Very Low at the outbuilding

Table 1: SW flood depth, relative to external ground levels, and highest related probability of occurrence

4.1.5 Flood risk from infrastructure failure

Flooding occurs because of canals, reservoirs, industrial processes, burst water mains or failed pumping stations.

The site is shown to be at flood risk due to reservoir failure, but only in the event that failure coincides with a reservoir failure (a Wet day event) as shown in Figure 6.

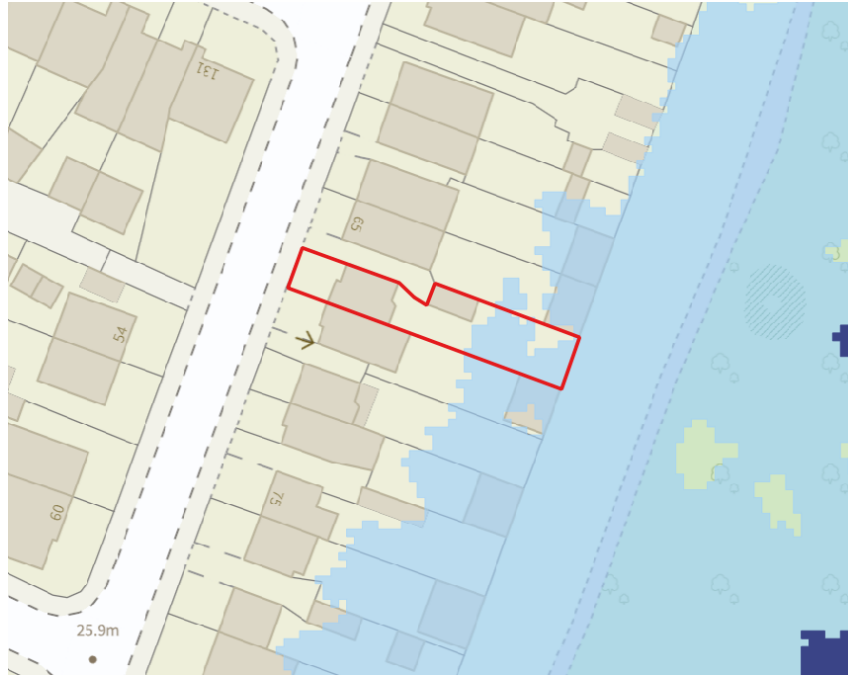


Figure 6: Flood risk from reservoir flooding. The risk is classed under a Wet Day scenario (Source: EA flood mapping)

However the EA have previously stated that:

“Reservoir flooding is extremely unlikely to happen. There has been no loss of life in the UK from reservoir flooding since 1925. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, we ensure that reservoirs are inspected regularly and essential safety work is carried out.”

Hence the flood risk to the site from reservoir failure is considered to be Low.

4.2 EA summary of flood risk

Figure 7 gives the EA’s overall summary of flood risk to the site.

Your selected location: 67, Rossville Road, Hayes, UB3 4QY

This information tells you the flood risk of the land around a building, not the building itself.

- How we assess an area's flood risk
- Flood risk and climate change

Surface water [More about your surface water flood risk](#)

Yearly chance of flooding

Very low Low Medium High

Yearly chance of flooding between 2040 and 2060

Very low Low Medium High

What surface water is

Surface water flooding is sometimes known as flash flooding. It happens when rainwater cannot drain away through normal drainage systems.

[Why surface water flooding is a problem](#)

Rivers and the sea [More about your rivers and sea flood risk](#)

Yearly chance of flooding

Very low Low Medium High

Yearly chance of flooding between 2036 and 2069

Very low Low Medium High

What makes rivers and sea flooding more likely

Low-lying areas that are close to rivers or the sea are more likely to flood when water levels rise.

This information takes into account any flood defences.

[Why flood defences cannot completely prevent flooding](#)

Groundwater [More about your groundwater flood risk](#)

We use groundwater flood alert areas to check the risk of flooding from groundwater.

This location is outside of a groundwater flood alert area.

[What this means](#)

What groundwater is

Groundwater is the water that is usually held in rocks and soil underground.

Groundwater flooding happens when this water rises and flows above the surface.

Flooding from rivers is more likely when groundwater levels are high.

Reservoirs [More about your reservoir flood risk](#)

Flooding from reservoirs is unlikely in this area.

What a reservoir is

A reservoir is a large natural or artificial lake that is designed to collect and store water.

They are usually formed by building a dam across a river, or by building a large tank or surrounding embankment. If one of these dams or embankments fails, then water could escape from the reservoir. This would result in land or properties being flooded.

Figure 7: EA summary of flood risk to the site

4.3 Surface water management

4.3.1 Generation of Run-off

The post-development surface water run-off volume will increase when compared to the pre-development level because there is an overall reduction in permeable areas. Hence all surface water arising must be managed on site in line with current best prac-

tice.

4.3.2 SuDS Statement:

Surface water will be managed in full alignment with the SuDS hierarchy as required under provisions made under the Town and Country Planning Act 1990.

While not required for Planning permission consent it can be confirmed that all SW on site will be also be designed, installed and tested in full accordance with Part H of the Building Regulations 2010 (as amended 2013), Requirement H3, as made under the Building Act 1984.

It is possible that soakaways will be viable given the expected ground conditions associated with the local geology (subject to testing) hence the designer will in the first instance detail a soakaway in line with BRE 365 and these will be installed and inspected under by the Building Control Body under Part H of the Building Regulations. This is a viable and proportionate SuDS provision on site if site conditions allow.

If testing on site shows that soakaways will be not viable then the recommendation of this report would be then to adopt the use of raised rain-garden planters and water butts as a alternative viable and proportionate SuDS solution with the naturally reduced outfall from these taken to the existing drainage provision on site.

4.3.3 Impact on flood risk elsewhere

SW arising: Since the proposal is intending to manage any additional surface water at source the impact on flood risk elsewhere is Low.

5 Levels

5.1 Ground level

With reference to Figure 8:

Lowest ground level on site at the rear is c25.5m AOD.

Ground level at the extension is 26.03m AOD.

Ground level at the front entrance door is 26.2m AOD.

FFL is seen to be 300mm (4 x 75mm brick courses) above ground level at the front entrance at 26.50m AOD.



Figure 8: Spot levels on site relative to the areas of 1 in 100yr + CC flood risk. The transition occurs at c25.8m AOD

5.2 Flood level data

5.2.1 Pluvial

With further reference to Figure 8, for the purpose of design the estimated surface water flood level (1 in 100yr + CC allowance) is **25.8m AOD**. There is, given the non site specific nature of the data set, a level of uncertainty in these levels (ref to Section 3.2).

5.2.2 Fluvial

No design period fluvial flooding on site.

5.3 Freeboard

Minimum freeboard = 600mm where there is a degree of uncertainty with the flood data.

5.4 Floor levels

5.4.1 Extension's floor level

In line with EA standing advice the FFL of the extension should be set no lower than $25.8 + 0.6^1 = 26.4\text{m AOD}$.

Given the existing FFL is higher than this the minimum freeboard is readily achieved.

5.4.2 Outbuilding's floor level

In line with EA standing advice the FFL of the outbuilding should also be set no lower than = 26.4m AOD.

This would in practice require the outbuilding's floor to be elevated 0.8m above the existing ground level.

However, the designer has stated that:

“Such a high floor level would not be possible given the height restrictions of a similar outbuilding in the adjacent site. Furthermore, the outbuilding is not intended for anything other than transient occupancy and incidental use.”

Therefore floors are to be set as high as is practicable and, so as to align with EA standing advice, the design will now include “extra flood resistance and resilience measures” that are considered proportionate to the nature and scale of this building.

¹Noting the degree of uncertainty with the “estimated” flood level

6 Management of residual risk

6.1 Flood risk resilience measures

6.1.1 Extension

In specific measures required.

6.1.2 Outbuilding

Because the site at a High risk from surface water flooding and floor levels cannot be raised 600mm above estimated flood levels then in line with EA standing advice and current best practice^[4], flood risk resilience measures will be incorporated into the development's construction, specifically at ground floor and all construction below such that "the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment"^[5].

For the purpose of the following guidance the estimated 1 in 100yr + CC flood level is 25.8m AOD.

The Government's guidance states:

The design for the outbuilding should be appropriately flood resistant and resilient by:

- using flood resistant materials that have low permeability to at least 600mm above the estimated flood level;
- making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level;
- using flood resilient materials (for example lime plaster) to at least 600mm above the estimated flood level;
- by raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level;
- making sure there is access to all spaces to enable drying and cleaning;

In accordance with the document "Improving the Flood Performance of New Buildings - Flood Resilient Construction"^[3] a series of design approaches should be planned to mitigate the flood risk based on the flow chart as at Figure 9.

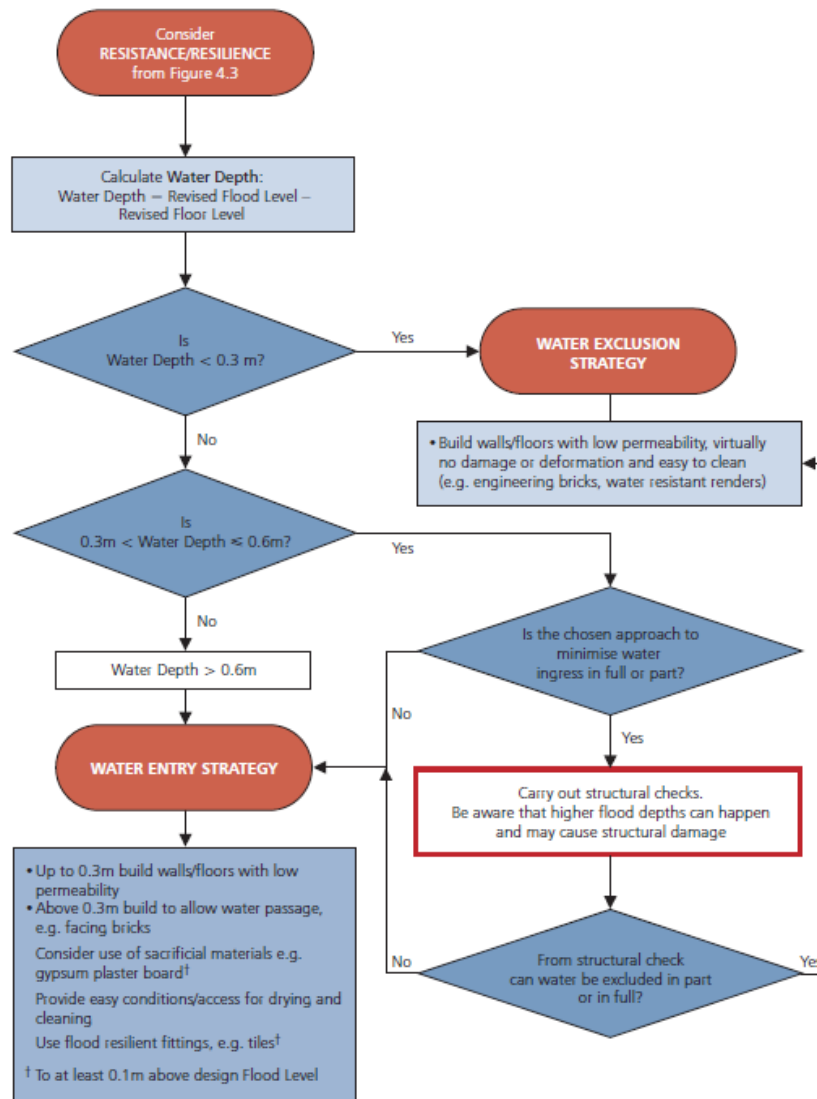


Figure 9: Design strategies for resistance and resilience^[3]

Note. Flood depths are predicted to exceed 600mm hence a “water entry” strategy should be followed.

Table 2 provides guidance on which materials are most suitable, suitable and unsuitable, when considering construction work involved in this project. This report recommends the use of materials from the “most suitable” column were this is at all possible on site, however they are not mandatory requirements.

Component	Most suitable	Suitable	Unsuitable
Flooring	Concrete, pre-cast or in situ	Timber floor, fully sealed, use of marine plywood.	Untreated timber, Chipboard
Floor Covering	Clay tiles, Rubber sheet floors, Vinyl sheet floors	Vinyl tiles, Ceramic tiles	
External Walls - to max flood level	Engineering brick, Reinforced concrete	Low water absorption brick	Large window openings
Doors	Solid panels with waterproof adhesives, Aluminium, plastic or steel	Epoxy sealed doors	Hollow core plywood doors
Internal Partitions	Brick with waterproof mortar, Lime based plasters	Common bricks	Chipboard, Fibreboard panels, Plasterboard, Gypsum plaster
Insulation	Foam or closed cell types	Reflective insulation	Open cell fibres
Windows	Plastic, metal	Epoxy sealed timber with waterproof glues and steel or brass fittings.	Timber with PVA glues and mild steel fittings

Table 2: Summary of Material Suitability for Building Components^[1]

6.2 Management of residual risk

Any residual risk can be safely managed by not impairing access and evacuation routes, signing residents up to flood warning schemes and preparation of domestic flood plans.

6.2.1 Safe access and egress routes

The NPPF stipulates that, where required, safe access and escape routes should be available to/from new developments in flood risk areas. Access routes should be such that occupants can safely access and exit buildings in design flood conditions. The proposal does not impact on the existing access and egress routes as shown in Figure 10.



Figure 10: Access and Egress routes are existing and not impacted by the extension or outbuilding.

6.2.2 Flood warning schemes

No warning schemes available for surface water flooding.

6.2.3 Flood Plan

Given part of the site is at a High risk from surface water flooding this report also provides the owners of the dwelling with a proforma Flood Plan (See Appendix A for an example). The plan will (when completed bespoke to the owner, dwelling and related risks) provide guidance on emergency response procedures in the event of flooding to the site.

7 Conclusions

Given that:

- The domestic extension and ancillary outbuilding are minor development;
- The extension is at a Low risk from surface water flooding;
- The rear of the site, at the location of the outbuilding, is at a Medium risk from surface water flooding;
- The site is at a Low risk from ground water and reservoir flooding;
- Floor levels in the extension are set no lower than the existing floor level and provide a satisfactory freeboard greater than 600mm;
- The outbuilding will not contain sleeping accommodation and is classed as non-habitable, it is of low intrinsic value with only transient occupancy.
- Floor levels in the outbuilding cannot be raised 600mm above the estimated flood level;
- Floor levels in the outbuilding are to be set as high as is reasonably practicable;
- Flood resilience and mitigation methods will be therefore implemented in the outbuilding in line with a “water exclusion” strategy in lieu of an elevated floor;
- Access/egress routes are existing, retained and are not affected;
- There is no documented evidence of flood risk from any other sources;
- The development does not impact on flood risk elsewhere;

and assuming the recommended resilience, mitigation and evacuation procedures can be maintained over the lifetime of the development, the proposed minor development to, and within the curtilage of an existing dwelling is considered acceptable.

Signed:




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Date: 2nd April, 2026

References

- [1] J Wingfield; M Bell; P Bowker. Improving the flood resilience of buildings through improved material, methods and details. Technical Report WP2c, CIRIA, 2005.
- [2] BSI. BS 8533:2011. Technical report, 2011.
- [3] CIRIA, CLG, EA and DEFRA. Improving the flood performance of new buildings. Flood resilient construction, 2007.
- [4] D Kelly, M Barker, J Lamond, S McKeown, E Blundell, and E Suttie. Code of practice for property flood resilience. Technical report, CIRIA, 2020.
- [5] Ministry of Housing, Communities and Local Government. National planning policy framework. 2021.

A Emergency flood plan (example)



Environment Agency

Personal flood plan

Name

Are you signed up to receive flood warnings?
 If not call Floodline on 0345 988 1188 to see if your area receives free flood warnings.

Let us know when you've completed your flood plan by calling Floodline on **0345 988 1188**.
 This will help us learn more about how people are preparing for flooding.

General contact list	Company name	Contact name	Telephone
Floodline	Environment Agency		0345 988 1188
Electricity provider			
Gas provider			
Water company			
Telephone provider			
Insurance company and policy number			
Local council			
Local radio station			
Travel/weather info			


Key locations	Description of location
Service cut-off	
Electricity	
Gas	
Water	

Who can help/who can you help?	How can they/you help?
Relationship	Contact details
Relative	
Friend or neighbour	

Be prepared for flooding. Act now

Personal flood plan

What can I do NOW?



Environment Agency

Put important documents out of flood risk and protect in polythene

Check your insurance covers you for flooding

Look at the best way of stopping floodwater entering your property

Make a flood plan and prepare a flood kit

Find out where you can get sandbags

Identify who can help you/who you can help

Identify what you would need to take with you if you had to leave your home

Understand the flood warning codes

What can you do if a flood is expected in your area?

Actions	Location
<p>Home</p> <ul style="list-style-type: none"> ● Move furniture and electrical items to safety ● Put flood boards, polythene and sandbags in place ● Make a list now of what you can move away from the risk ● Turn off electricity, water and gas supplies ● Roll up carpets and rugs ● Unless you have time to remove them hang curtains over rods ● Move sentimental items to safety ● Put important documents in polythene bags and move to safety 	
<p>Garden and outside</p> <ul style="list-style-type: none"> ● Move your car out of the flood risk area ● Move any large or loose items or weigh them down 	
<p>Business</p> <ul style="list-style-type: none"> ● Move important documents, computers and stock ● Alert staff and request their help ● Farmers move animals and livestock to safety 	
<p>Evacuation - Prepare a flood kit in advance</p> <ul style="list-style-type: none"> ● Inform your family or friends that you may need to leave your home ● Get your flood kit together and include a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons 	

There are a range of flood protection products on the market to help you protect your property from flood damage. A directory of these is available from the **National Flood Forum** at www.bluepages.org.uk

Be prepared for flooding. Act now