

376 Richmond Road  
Flood Risk Assessment  
February 2024



## Quality Management

<b>Project</b>	376 Richmond Road Flood Risk Assessment
<b>Location</b>	376 Richmond Road, Twickenham, TW1 2DX
<b>Reference</b>	LE2024065FRA

## Revision History

<b>Rev</b>	<b>Date</b>	<b>Issue / Purpose/ Comment</b>	<b>Prepared</b>
R01	February 2024	Final	ZY

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Contact Us:

Liska Environmental Ltd  
Tel: 07449 043037  
Email: [info@liskaltd.co.uk](mailto:info@liskaltd.co.uk)  
[www.liskaltd.co.uk](http://www.liskaltd.co.uk)

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# Executive Summary

<b>Site Name</b>	376 Richmond Road Flood Risk Assessment
<b>Location</b>	376 Richmond Road, Twickenham, TW1 2DX
<b>Grid Reference</b>	517495, 174283
<b>Area (ha)</b>	Approximately 0.01ha
<b>EA Flood Zone Classification</b>	Flood Zone 3
<b>Current Site Use</b>	Residential
<b>Description of proposed development</b>	Retention of shop front
<b>Vulnerability Classification</b>	Residential – ‘Less Vulnerable’
<b>Summary of Pre-development Risks</b>	<ul style="list-style-type: none"> <li>• Fluvial/Tidal Flood Risk: Low Risk</li> <li>• Flood Risk from Land, Surface Water and Sewers: Low Risk</li> <li>• Groundwater Flood Risk: Low Risk</li> <li>• Flood Risk from Artificial Sources: Low Risk</li> <li>• Residual Flood Risk: High Risk</li> </ul>

# 1. Introduction

## 1.1 Requirement

1.1.1 Liska Environmental has been commissioned to undertake a desk based Flood Risk Assessment (FRA) for a development at 376 Richmond Road, Twickenham, TW1 2DX (Figure 3-1). It is understood by Liska Environmental that this report is to support a planning application for the retention of shop front.

## 1.2 Report Objectives

1.2.1 The contents of this FRA describe the assessment of the proposal and the implications of the proposed development on flood risk. The FRA has been prepared following guidance provided in the revised National Planning Policy Framework (July 2021) and the Planning Policy Guidance (November 2016).

1.2.2 The aim of this assessment is to provide the level of detail necessary to demonstrate that the potential effects of flood risk (to the proposal) have been addressed by:

- Identifying the source and probability of flooding to the application site, including the possible effects of climate change;
- Determining the consequences of flooding to and from the proposed development proposal and advising on the how this will be managed, if necessary; and
- Demonstrating the flood risk issues described in this assessment are compliant with the relevant guidance.

## 1.3 Limitations

1.3.1 This report relies on publicly available information which Liska Environmental assumes to be correct: Liska Environmental cannot and does not verify accuracy of this data, and it is outside the scope of this commission to do so.

## 1.4 Sources of Information

1.4.1 Sources of information used during the compilation of this report include:

- Environment Agency (EA) website – ‘*Flood Map for Planning*’ [Accessed 03/02/2024];
- British Geological Survey (BGS) website – ‘*GeoIndex*’ and ‘*Lexicon of Named Rock Units*’ [Accessed 03/02/2024];
- Department of Environment, Food, and Rural Affairs (DEFRA) website – ‘*MAGIC Map Application*’ [Accessed 03/02/2024];
- Environment Agency (EA) website - ‘*Catchment Data Explorer*’ [Accessed 03/02/2024].

## 2. Policy and Guidance

### 2.1 Thames Catchment Flood Management Plan (CFMP), 2009

2.1.1 A Catchment Flood Management Plan (CFMP) is a high-level strategic plan prepared by the EA, which identifies long-term (50 to 100 year) policies for sustainable flood risk within a catchment.

2.1.2 The relevant key messages contained within the Thames Region CFMP (2009) are that:

- Climate change will be the major cause of increased flood risk in the future; in urban areas and areas of narrow floodplain, flooding from heavy rainfall will be more regular and more severe. Surface water, sewer and fluvial flooding can occur within minutes of a severe rainfall event. Flooding can therefore occur at any time of the year, and there is very little time to provide flood warnings.
- Development and urban regeneration provide a crucial opportunity to manage flood risk; the location, layout and design of development can all reduce flood risk. For example, the use of SuDS can help to control surface water runoff.

### 2.2 Flood and Water Management Act, 2010

2.2.1 Combined with the Flood Risk Regulations 2009 ('the Regulations'), (which enact the EU Floods Directive in the England and Wales) the Flood and Water Management Act 2010 ('the Act') places significantly greater responsibility on Local Authorities to manage and lead on local flooding issues. The Act and the Regulations together raise the requirements and targets Local Authorities need to meet, including:

- Playing an active role leading Flood Risk Management;
- Development of Local Flood Risk Management Strategies (LFRMS);
- Implementing requirements of Flood and Water Management legislation;
- Development and implementation of drainage and flooding management strategies; and
- Responsibility for first approval, then adopting, management and maintenance of Sustainable Drainage Systems (SuDS) where they service more than one property.

2.2.2 The Act also clarifies three key areas that influence development:

1. **Sustainable Drainage Systems (SuDS)** - the Act makes provision for a national standard to be prepared on SuDS, and developers will be required to obtain local authority approval for in accordance with the standards, likely with conditions. Supporting this, the Act requires local authorities to adopt and maintain SuDS, removing any ongoing responsibility for developers to maintain SuDS if they are designed and constructed robustly.
2. **Flood risk management structures** - the Act enables the EA and local authorities to designate structures such as flood defences or embankments owned by third parties for protection if they affect flooding or coastal erosion. A developer or landowner will not be able to alter, remove or replace a designated structure or feature without first obtaining consent from the relevant authority.
3. **Permitted flooding of third party land** - The EA and local authorities have the power to carry out work, which may cause flooding to third party land where the works are deemed to be in the interest of nature conservation, the preservation of cultural heritage or people's enjoyment of the environment or of cultural heritage.

## 2.3 National Planning Policy Framework (NPPF), July 2018

2.3.1 In determining an approach for the assessment of flood risk for the proposal there is a need to review the policy context. The National Planning Policy Framework requires that consideration be given to flood risk in the planning process. The National Planning Policy Framework was revised and issued in July 2018 and outlines the national policy position on development and flood risk assessment.

2.3.2 The Framework states that the appropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. Where development is necessary in flood risk areas, it can be permitted provided it is made safe without increasing flood risk elsewhere.

2.3.3 The essence of NPPF is that:

- Local Plans should be supported by Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking advice from the Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards;
- Policies in development plans should outline the consideration, which will be given to flooding issues, recognising the uncertainties that are inherent in the prediction of flooding and that flood risk is expected to increase as a result of climate change;
- Planning authorities should apply the precautionary principle to the issue of flood risk, using a risk-based search sequence to avoid such risk where possible and managing it elsewhere;
- The vulnerability of a proposed land use should be considered when assessing flood risk;
- Opportunities offered by new developments should be used to reduce the causes and impacts of flooding;
- Planning authorities should recognise the importance of functional floodplains, where water flows or is held at times of flood, and avoid inappropriate development on undeveloped and undefended floodplains; and
- Development is based on the concept of Flood Risk Reduction, particularly in circumstances where development has been sanctioned on the basis of the “Exception Test”.

### 3. Development Site Planning Considerations

#### 3.1 Location

3.1.1 The site, of approximately 0.01ha, is located at 376 Richmond Road, Twickenham, TW1 2DX at Ordinance Survey (OS) coordinates 517495, 174283.



Figure 3-1 Site Boundary. Source: Google Map

#### 3.2 Proposed Development

3.2.1 The proposal consists of the retention of shop front. Further details about the proposals have been provided in Appendix A.

#### 3.3 Flood Zone

3.3.1 Flood Zones describe the extent of flooding that would occur on the assumption that no flood defences are in place. The definition of Flood Zones is provided in Table 1 of the PPG and in table 3.1 below:

Table 3-1: Flood zone terminology

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



<b>Flood Zone</b>	<b>Definition</b>
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

3.3.2 The site lies within the Environment Agency’s Flood Zone 3 which is described within PPG Table 1 as having a ‘ High Probability’ of flooding. The Environment Agency’s flood zone map is shown in Appendix B.

### 3.4 Vulnerability Classification

3.4.1 The proposed development is considered to fall under the classification of ‘Less Vulnerable’ land uses based on Table 2 of PPG Technical Guidance. Table 3: Flood Risk Vulnerability and Flood Zone Compatibility in PPG, states that these land uses are compatible in Flood Zone 3 (with the requirement to apply the Exception Test) (as in Table 3.2 below).

**Table 3.2: Flood Zone Risk and Vulnerability**

<b>Flood Zones</b>	<b>Flood Risk Vulnerability</b>				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Zone 3b	Exception Test required	X	X	X	✓

Key: ✓Development is appropriate XDevelopment should not be permitted

## 3.5 Sequential Test and Exception Test

- 3.5.1 Paragraph 101 of the NPPF sets out guidance on the application of the Sequential Test, the aim of which is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. Where areas of lower risk are not available, the Exception Test, as set out in paragraph 102 of the NPPF can be applied, to ensure that flood risk to people and property will be managed satisfactorily.
- 3.5.2 As the proposed development is classified as a 'Minor Development', and there would be no additional vulnerability to flood risk nor any worsening of flood risk elsewhere over that as a result of the proposal on this site. Therefore, a Sequential and Exception Test are considered as passed.

## 4. Sources of Flooding – Actual Flood Risk

4.1.1 The NPPF describes potential sources of flooding. It is necessary to consider the risk of flooding from all sources within a FRA. This section provides a review of flooding from land, sewers, groundwater and artificial sources, in addition to that from rivers and the sea.

### 4.2 Fluvial/Tidal Flood Risk

4.2.1 The Environment Agency’s Flood map for Planning, was used to identify risk of flooding at site (refer Appendix B). These confirm that the site is in Flood Zone 3 . The site benefits from flood defences.

### 4.3 Flood Risk from Land, Surface Water and Sewers

4.3.1 Flooding from land can be caused by rainfall being unable to infiltrate into the natural ground or entering the drainage systems due to blockage, or flows being above design capacity. This can then result in (temporary) localised ponding and flooding. The natural topography and location of buildings/structures can influence the direction and depth of water flowing off impermeable and permeable surfaces.

4.3.2 Surface water flooding can be difficult to predict, much more so than river or sea flooding as it is hard to forecast exactly where or how much rain will fall in any storm. The Environment Agency classifies the site, as being within a low risk area of flooding (i.e. each year this area has a chance of flooding of between 0.1% and 1%).



Figure 4-1: Surface Water Flood Map (Source Environment Agency<sup>1</sup>)

<sup>1</sup> <http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?&topic=ufmfs#x=357683&y=355134&scale=2>  
[accessed 03/02/2024]

## 4.4 Groundwater Flood Risk

4.4.1 According to the Richmond Interactive Maps - Susceptibility to Groundwater Flooding Version 6 (British Geological Survey), the site is not located in the area with the potential for groundwater flooding below ground level, as the proposed development is mainly for internal alterations and does not involve lowering the existing floor levels, the risk of flooding from this source could be considered low.

## 4.5 Flood Risk from Artificial Sources

4.5.1 Artificial sources of flooding include reservoirs, canals, ponds and mining abstraction.

4.5.2 A review of the Environment Agency Reservoir Maps indicates that the site is not within an area at risk from reservoir flooding when river levels are normal.

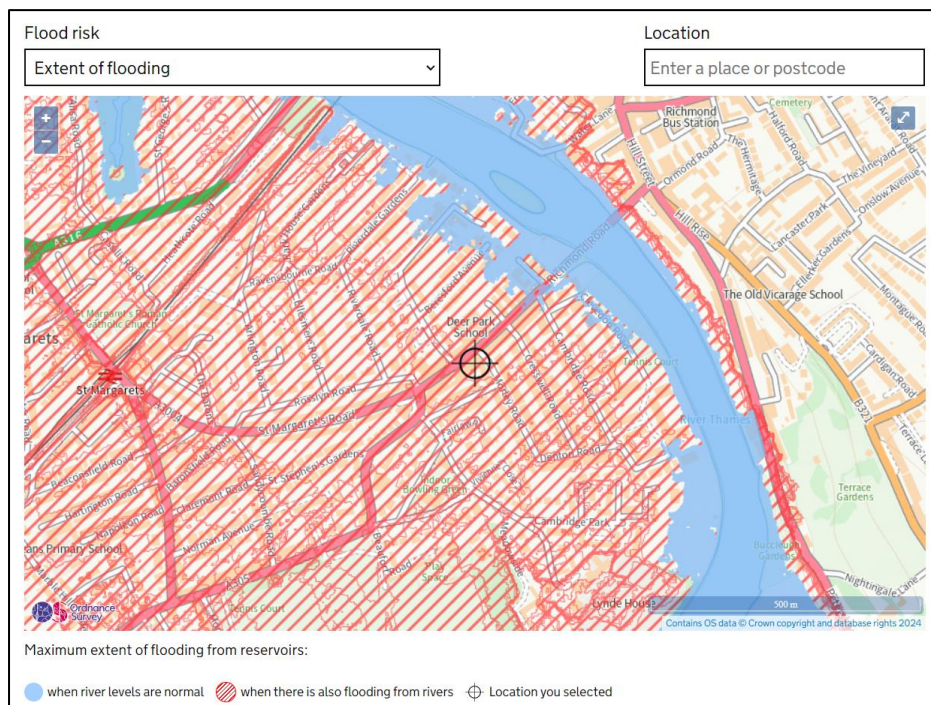


Figure 4-2: Extend of flooding from reservoirs (Source Environment Agency<sup>2</sup>)

## 4.6 Residual Flood Risk

4.6.1 Residual Risk is defined as 'the risk which remains after risk avoidance, reduction and mitigation measures have been implemented'. For the purpose of assessing flood risk, it is assumed that events greater than those assessed as Actual Risk are considered a 'Residual Risk'.

4.6.2 As proposed development is located in a high flood risk zone and does benefit from the presence of significant defences. As such, the residual risk to the site could be considered to be high.

<sup>2</sup> <http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?&topic=ufmfs#x=357683&y=355134&scale=2>  
[accessed 03/02/2024]

## 4.7 Summary of flood risk

4.7.1 Table 4.1 below summarises the types of flood risk at the Site:

**Table 4-1: Summary of flood risk**

<b>Source of risk</b>	<b>Ongoing risk</b>
Fluvial Flood Risk	Low Risk
Flood Risk from Land, Surface Water and Sewers	Low Risk
Groundwater Flood Risk	Low Risk
Flood Risk from Artificial Sources	Low Risk
Residual Flood Risk	High Risk

## 5. Flood Risk Management

### 5.1 Principles of Flood Risk Management

- 5.1.1 NPPF requires a precautionary approach to be undertaken when making land use planning decisions regarding flood risk. This is partly due to the considerable uncertainty surrounding flooding mechanisms and how flooding may respond to climate change. It is also due to the potentially devastating consequences of flooding to the people and property affected.
- 5.1.2 Flood risk is a combination of the probability of flooding and the consequences of flooding. Hence 'managing flood risk' involves managing either, the probability of flooding or the consequences of flooding, or both.
- 5.1.3 NPPF requires flooding from tidal, fluvial, land, surface water & sewerage and from groundwater to be considered. The flood risk management measures discussed in this section are based on the sources of flooding identified in Section 4 that are considered to pose a risk to the development proposals.

### 5.2 Flood Resilient Measures

- 5.2.1 The flood risk management measures discussed in this section are based on the sources of flooding identified in section 4. The following flood resilient measures should be adopted to minimise the damage and to enable quick recovery and clean up after the flooding event:
- Sealed PVC external framed doors should be used and, where the use of wooden doors is a preferred option, all effort should be made to ensure a good fit and seal to their frames.

### 5.3 Finished Floor Level (FFL)

- 5.3.1 Finished floor levels will be set no lower than existing levels.

## 6. Conclusions & Recommendations

- 6.1.1 An assessment of areas potentially at risk from flooding has been undertaken and the development proposals have been examined in relation to their potential to increase flood risk both on and off site. This desk based FRA accompanies the full planning application for the retention of shop front at 376 Richmond Road, to demonstrate that flood risk has been given material consideration throughout the development planning process and development should not be restricted at this Site due to flood risk.
- 6.1.2 The site is located within Flood Zone 3 according to the Environment Agency Flood Zones Maps. The current and proposed development Site use is classified as a 'Less Vulnerable' land use and 'Minor Development' according to NPPF. Therefore, the site is compatible with the Environment Agency's vulnerability tests.
- 6.1.3 In line with the NPPF, all sources of flooding have been considered and assessed, using readily available sources of information. The site is located in the area with high from residual risk and low risk from all other sources including fluvial/tidal risk, surface water, groundwater, sewer and reservoir.
- 6.1.4 The development proposal has considered flood risk at all stages throughout the development of the final layout and reflects the flood risk constraints and the need to manage, and where possible reduce, flood risk in compliance with the guidance in NPPF. The proposal will not increase the risk of flooding to others and as a result, proposed development at this site should not be restricted as a result of flood risk.

# Appendix A Existing Site and Proposed Plans



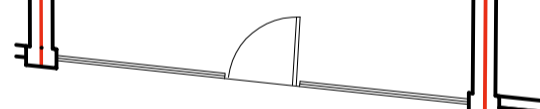


376



PRE-EXISTING ELEVATION

376



EXISTING PLAN

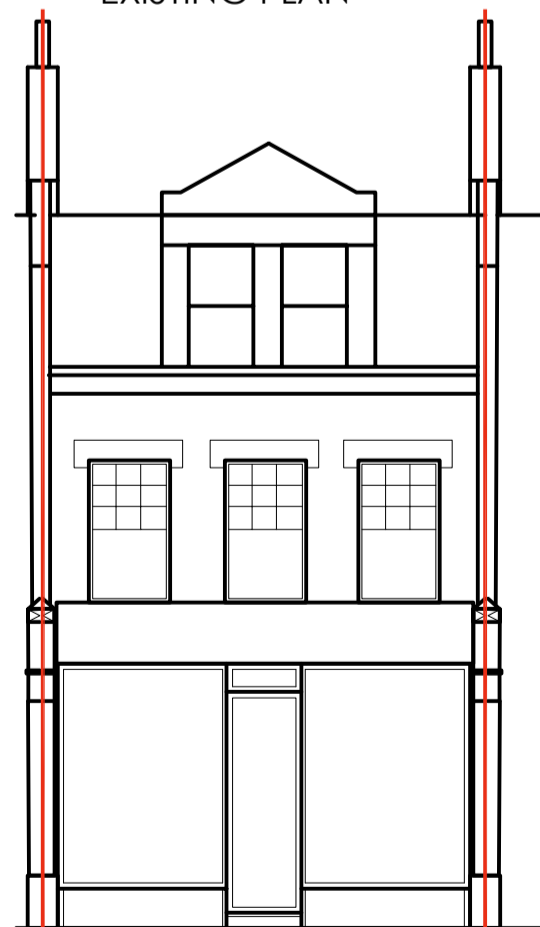
PRE-EXISTING PLAN



PRE-EXISTING ELEVATION 1:100@A3



EXISTING ELEVATION



EXISTING ELEVATION

PROJECT  
APPLICATION FOR THE RETENTION  
OF SHOP FRONT

REVISIONS		REVISIONS	
R. NO	DATED	DESCRIPTION	SIGN

SITE.  
376 Richmond Road  
East Twickenham,  
TW1 2DX

PROJECT NO:  
PL/01  
SCALE  
as shown  
@A3

EXISTING AND PROPOSED  
DRAWINGS

DATE  
25/01/2024

SHEET TITLE  
CHECKED  
AW

CLIENT  
Mr Noman

Drawing produced by  
AW Architecture  
Contact: 07934 906060  
abdul@awarchitecture.co.uk

# Appendix B Environment Agency Flood Map for Planning



## Flood map for planning

Your reference	Location (easting/northing)	Created
<Unspecified>	517494/174280	3 Feb 2024 10:33

**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))

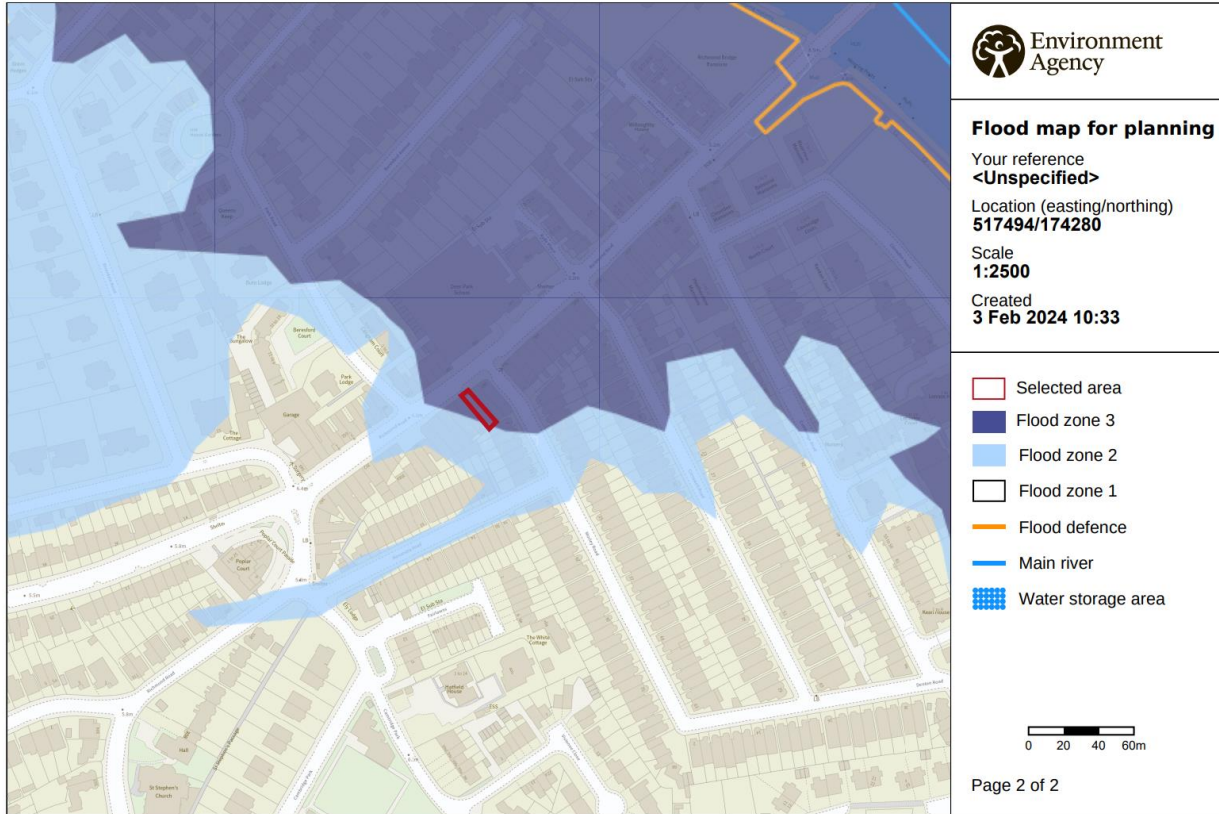
### Notes

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>



## Householder and other minor extensions in Flood Zones 2 and 3

Applications for planning permission should be accompanied by a completed form. An electronic version can be submitted by 'printing' it to a PDF writer.

**This guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250 sq. metres. It should NOT be applied if an additional dwelling is being created, e.g. a self contained annex.**

We recommend that:

### Planning Authorities:

- 1) Refer the applicant to the standing advice pages on the Environment Agency website or provide them with a copy of this page for them to include as part of the planning application submission.
- 2) Check the planning application to ensure that one or other of the mitigation measures from the table below has been incorporated.

### Applicants:

Complete the table below and include it with the planning application submission. The table, together with the supporting evidence, will form the Flood Risk Assessment (FRA) and will act as an assurance to the Local Planning Authority (LPA) that flood risk issues have been adequately addressed.

Applicant to choose one or other of the flood mitigation measures below	Applicant to provide the LPA with the supporting information detailed below as part of their FRA	Applicant to indicate their choice in the box below. Enter 'yes' or 'no'
Either ;  Floor levels within the proposed development will be set no lower than existing levels AND, flood proofing of the proposed development has been incorporated where appropriate.	Details of any flood proofing / resilience and resistance techniques, to be included in accordance with <i>'Improving the flood performance of new buildings'</i> CLG (2007)	Yes
Or;  Floor levels within the extension will be set 300mm above the known or modelled 1 in 100 annual probability river flood (1%) or 1 in 200 annual probability sea flood (0.5%) in any year. This flood level is the extent of the Flood Zones	This must be demonstrated by a plan that shows finished floor levels relative to the known or modelled flood level. All levels should be stated in relation to Ordnance Datum <sup>1</sup>	No

### Subterranean/basement extensions

Due to the risk of rapid inundation by floodwater basements should be avoided in areas at risk of flooding. The LPA may hold additional guidance for basement extensions.

Self-contained basement dwellings are 'highly vulnerable' development and should not be permitted in Flood Zone 3. We are opposed to these developments.

### Continued...

<sup>1</sup> Ordnance Datum or the abbreviation 'OD' is the mean level of the sea at Newlyn in Cornwall from which heights above sea level are taken. The contour lines on Ordnance Survey maps measure heights above OD for example, though these are not accurate enough for a flood risk assessment..

## Cumulative impact of minor extensions and the removal of Permitted Development rights.

There is potential for the cumulative impact of minor extensions to have a significant effect on flood risk. Where local knowledge (Strategic Flood Risk Assessment held by the LPA/information provided by the parish council) suggests this is the case the guidance contained in FRA guidance note 2 should be applied. FRA guidance note 2 can also be applied where permitted development rights have been removed for flood risk reasons. The Environment Agency does not usually comment on minor development in this category.

## Permeable paving and changes to permitted development rights for householders

On the 1<sup>st</sup> October 2008 the General Permitted Development Order (GPDO) in England was amended by the Government (Statutory Instrument 2008 No. 2362).

One of the changes introduced by the GPDO amendment is the removal of permitted development rights for householders wishing to install hard surfacing in front gardens which exceeds 5sq. metres (i.e. 1m x 5 m) without making provision to ensure permeability. This means that use of traditional materials, such as impermeable concrete, where there is no facility in place to ensure permeability, requires an application for planning permission.

In order to help and advise householders of the options for achieving permeability and meeting the condition for permitted development status the Department for Communities and Local Government (CLG) has produced guidance on permeable paving which can be found on the following link <http://www.communities.gov.uk/publications/planningandbuilding/pavingfrontgardens>

The Environment Agency supports the GPDO amendment as it is in line with the recommendations of the Pitt Report regarding the need to better tackle the impact of surface water flooding. However, Local Planning Authorities should determine these applications in accordance with the CLG guidance **without** consulting the Environment Agency.

**End of comment**