

Flood Risk Statement

13 Maze Road, Kew, TW9 3DA

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## Introduction

This Flood Risk Assessment has been prepared for the Planning Application to the London Borough of Richmond Upon Thames for the site indicated below, 13 Maze Road.

This report considers the Flooding Risk associated with the site in light of the National Planning Policy Framework and Technical Guidance. This report establishes the flood risk of the site, the impact of development of the site on the flood risk and its effect on others and determines any mitigation measures which may be required to take account of the flood risk.

## Description of Site and Proposed Works

- The site is located on the corner of Maze Road and Haverfield Gardens.
- The site is located within the CA2 Kew Green Conservation Area.
- No. 13 Maze Road is a end of terrace residential property class C3.
- The property sits in the Flood Zone 3, area that benefits from flood defences.

*Land and property in this flood zone would have a high probability of flooding without the local flood defences. These protect the area against a river flood with a 1% chance of happening each year, or a flood from the sea with a 0.5% chance of happening each year.*

The design proposal is for a Loft Conversion and Dormer with associated internal and external remodelling.

## National Planning Policy Framework

- The NPPF, March 2012, replaces most of the Planning Policy Guidance Notes (PPG's) and Planning Policy Statements (PPS's)
- The underlying principle in the NPPF is a presumption in favour of sustainable development promoting positive planning, where Local Planning Authorities should approve without delay proposals that accord with the development plan.
- Flood risk and coastal change policies can be found in paragraphs 155- 169 of the NPPF with technical guidance setting out how these policies should be implemented contained in the *Technical Guidance to the National Planning Policy Framework*.
- Policy for Planning and Flooding Risk '*Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*' (para 155)
- The NPPF retains the Sequential and Exception Tests. In drawing up Local Plans, LPAs "*should apply a sequential, risk based approach to the location of development*" (Para 157).
- *When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:*
  - *a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
  - *b) the development is appropriately flood resistant and resilient;*
  - *c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*
  - *d) any residual risk can be safely managed; and*
  - *e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.* (para 163)
- Planning Policy Guidance on Flood Risk and Coastal Change are also considered necessary and helpful in relation to these policy areas. With regard to flood risk:
  - "areas at risk of flooding" means land within Flood Zones 2 and 3 or land within Flood Zone 1 which has critical drainage problems and which has been notified to the local planning authority by the Environment Agency.
  - "flood risk" means risk from all sources of flooding – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources.
- Table 1 of the Guidance Notes deals with the definition, appropriate uses, flood risk assessment requirements, and policy aims of the 4 flood zones –

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)
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)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the [Strategic Flood Risk Assessment](#) when considering location and potential future flood risks to developments and land uses.

**Table 3: Flood risk vulnerability and flood zone 'compatibility'**

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	x	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	x	x	x

**Key:**      ✓ Development is appropriate.  
                  x Development should not be permitted.

**Notes to table 3:**

This table does not show:

- a. the application of the Sequential Test which guides development to Flood Zone 1 first, then Zone 2, and then Zone 3;
- b. flood risk assessment requirements; or
- c. the policy aims for each flood zone.

- Section 6 of the Guidance Notes refers to a site-specific flood risk assessment which is carried out by, or on behalf of, a developer to assess the risk to a development site and demonstrate how flood risk from all sources of flooding to the development itself and flood risk to others will be managed now, and taking climate change into account. There should be iteration between the different levels of flood risk assessment.
- It should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account. Those proposing developments should take advice from the emergency services when producing an evacuation plan for the development as part of the flood risk assessment
- In Planning Practice Guidance Minor development means:
  - *Minor non-residential extensions: industrial/commercial/leisure etc. extensions with a footprint less than 250 square metres.*
  - *Alterations: development that does not increase the size of buildings e.g. alterations to external appearance.*
  - *Householder development: For example; sheds, garages, games rooms etc. within the curtilage of the existing dwelling, in addition to physical extensions to the existing dwelling itself. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling e.g. subdivision of houses into flats.*
- Minor developments are unlikely to raise significant flood risk issues unless:
  - *they would have an adverse effect on a watercourse, floodplain or its flood defences;*
  - *they would impede access to flood defence and management facilities, or;*
  - *Where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.*

After applying a sequential approach so that, as far as possible, development is located to where there is the lowest risk of flooding, new development can be made safe by:

- designing buildings to avoid flooding by, for example, raising floor levels;
- providing adequate flood risk management infrastructure which will be maintained for the lifetime of the development, for example, using Community Infrastructure Levy or planning obligations, or [Partnership Funding](#) where appropriate
- leaving space in developments for flood risk management infrastructure to be maintained and enhanced, and;
- Mitigating the potential impacts of flooding through design and flood resilient and resistant construction.

## Flood Risk Information

### Fluvial/Tidal

The Environment Agency Flood Map for Planning for the site (as shown below) indicates that the site is located in Flood Zone 3 and benefits from flood defences.

As the site is located within Flood Zone 3, where the chance of flooding in any given year is greater than 1 in 100 (0.5%) in a tidal flood event.

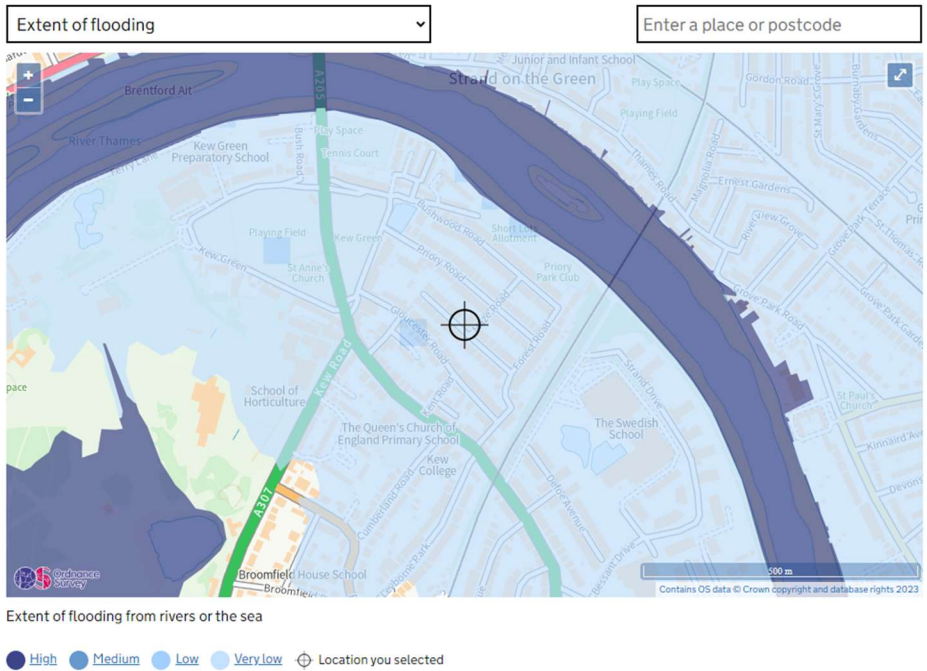
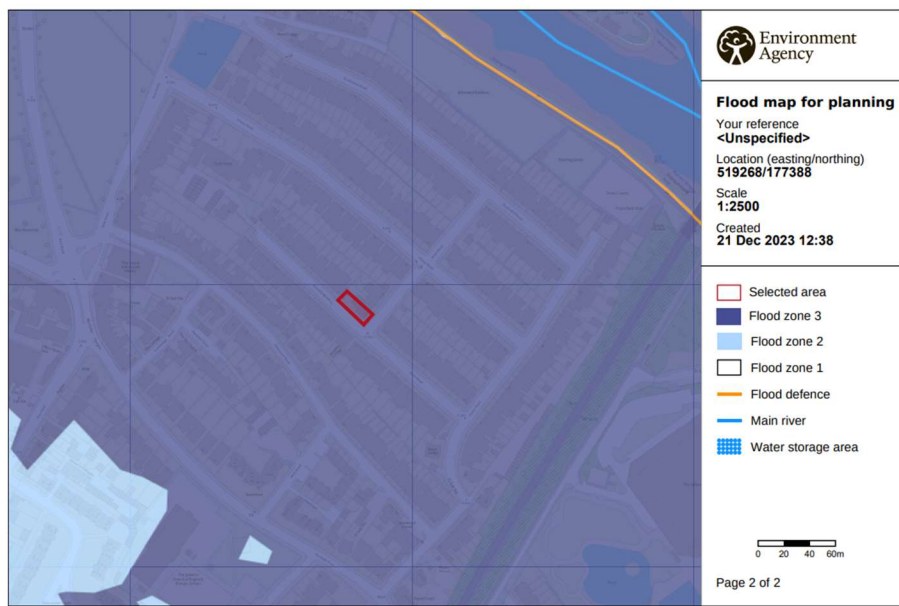


Fig 4 – Flood Map for Planning for the site. - Environment Agency Long Term Risk Information



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**Surface Water Flooding**

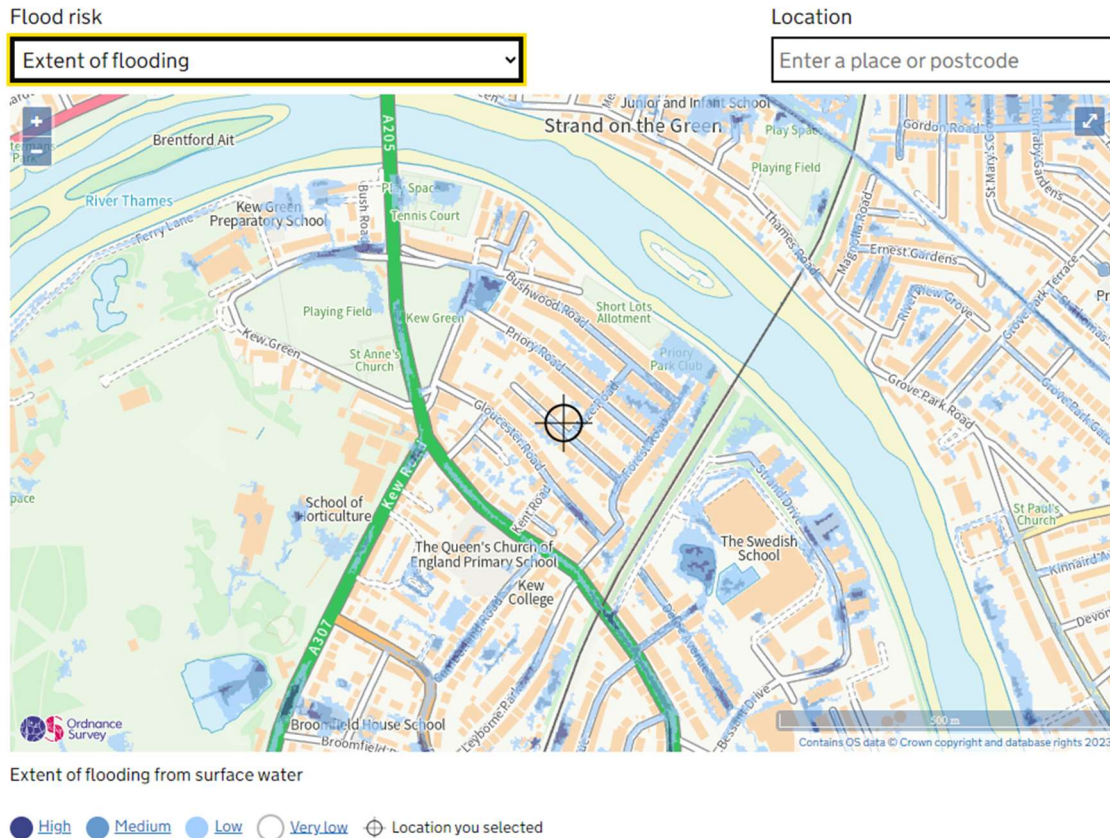


Fig 5 – Flood Map of Surface Water – Environment Agency Long Term Risk Information

The EA map for pluvial flooding for the application site is shown below. This shows that the site is at medium risk of surface water flooding. This flood risk summary reports the highest risk from surface water within a 20m radius of this property. Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.



### Flooding From Reservoirs

The EA map for flooding from reservoirs is shown below. The site is at risk of flooding from reservoirs in this case it is at risk of flooding from the Queen Mary Reservoir in Spelthorne Surrey.

However the event of flooding from a reservoir is extremely unlikely. As all reservoirs under the Reservoir Act are inspected regularly ensuring they are maintained to a safe standard.

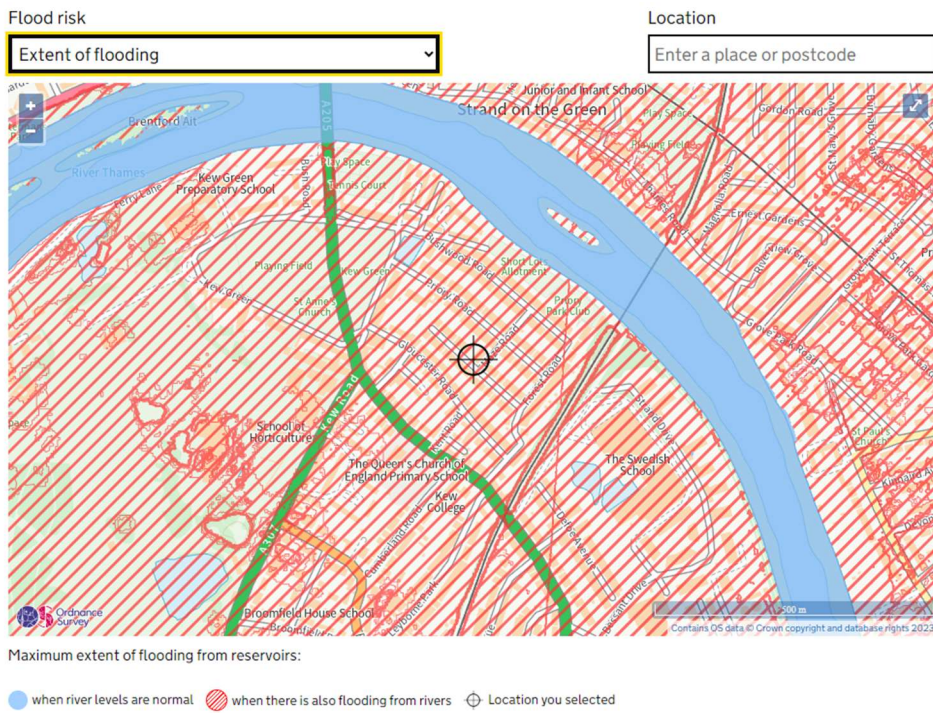


Fig 6 – Flood Map of Reservoir Flooding - Environment Agency Long Term Risk Information

## Proposed Development

The current building on the site is a detached residential house– residential (class C3). The design proposal is for Ground Floor Side Extension, Loft Extension and associated internal and external remodelling.

Developments used for residential dwellings are classified as being More Vulnerable development within Table 2 of the National Planning Practice Guidance. More Vulnerable minor developments are acceptable within Flood Zone 3.

Even if the footprint of the building will be slightly increase by the proposal, this is a minor development, and the level will remain the same. Therefore, there is no increase of flood risk.

## Surface Water Drainage

It is assumed that the existing arrangement for the discharge of surface water from the development is into the surface water / combined sewerage system. The impermeable area of the site *will not be increased*, and the discharge of the surface water will be still suitable for the existing system as it does not alter.

## Flood Warning and Evacuation Plan

As the site is located within Flood Zone 3. It is recommended that residents of the property establish a flood warning and evacuation plan. This would include:

- Signing up to the EA Flood warning service
- Understanding the Flood warnings given by EA, and when to take action.



Flood Alert

What does a Flood Alert mean? - *Flooding is possible and you should be prepared.*

When is an Alert issued? - *2 hours to 2 days in advance of flooding*

What causes an Alert?

- Forecasts indicate that flooding from rivers may be possible
- Forecast of intense rainfall for rivers that respond very rapidly
- Forecasts of high tides, surges or strong winds

What should you do?

- Be prepared to act on your flood plan
- Prepare an emergency flood kit of essential items
- Avoid walking, cycling or driving through flood water
- A Flood Alert could be upgraded to a so check for updates regularly



Flood Warning

What does a Flood Warning mean? - *Flooding is expected and immediate action is required*

When is a Flood Warning issued? - *half an hour to one day in advance of flooding*

What causes a Flood Warning?

- High tides and surges combined with strong wind
- Forecasted heavy rainfall potentially causing flash flooding of rivers
- Forecasted flooding from rivers

What should you do?

- Protect yourself and your family
- Move family, pets and valuables to a safe place
- Turn off gas, electricity and water supplies if it is safe to do so
- Put flood protection equipment in place
- Help others if you can
- A Flood Warning could be upgraded to a so check for updates regularly



Severe Flood Warning

What does a Severe Flood Warning mean? - *Severe flooding and danger to life*


When is a Severe Flood Warning issued? - *When flooding poses a significant risk to life or significant disruption to communities*




What causes a Severe Flood Warning?

- Actual flooding where the conditions pose a significant risk to life and/or widespread disruption to communities
- Observations made in flooded locations
- A breach in defences or failure of a barrier that could cause significant risk to life

What should you do?

- Stay in a safe place with a means of escape
- Be ready if you need to evacuate from your home
- Co-operate with the emergency services
- Call 999 if you are in immediate danger

**Flood warnings - know what to do?** 

	<b>FLOOD ALERT</b>	<b>PREPARE</b>	<ul style="list-style-type: none"> <li>• Prepare a bag that includes medicines and insurance documents</li> <li>• Visit <a href="http://flood-warning-information.service.gov.uk">flood-warning-information.service.gov.uk</a></li> </ul>
	<b>FLOOD WARNING</b>	<b>ACT</b>	<ul style="list-style-type: none"> <li>• Turn off gas, water and electricity</li> <li>• Move things upstairs or to safety</li> <li>• Move family, pets and car to safety</li> </ul>
	<b>SEVERE FLOOD WARNING</b>	<b>SURVIVE</b>	<ul style="list-style-type: none"> <li>• Call 999 if in immediate danger</li> <li>• Follow advice from emergency services</li> <li>• Keep yourself and your family safe</li> </ul>

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[floodsdestroy.campaign.gov.uk](http://floodsdestroy.campaign.gov.uk)

 Floodline on 0345 988 1188 #PrepareActSurvive

Fig 7 – Flood Warnings and what they mean

Prepare a personal flood plan, this would include:

**Before a Flood**

- Prepare and keep a Contact/Information List, that can be easily accessed in times of emergency, this would include:
  - FloodLine, the Environment Agency
  - Electricity Provider
  - Gas Provider
  - Water Company
  - Telephone Provider
  - Insurance Company and Policy Number
  - Local Council
  - Local Radio Station
  - Where to find Travel and Weather information
- Take note of where Service Cut off Locations including:
  - Electricity
  - Gas
  - Water
- Contact Information of a Relative/s and or a Neighbour/s
- Put important documents out of flood risk and protect in polythene
- Look at the best way of stopping floodwater entering your property
- Find out where you can get sandbags
- Identify what you would need to take with you if you had to leave your home
- Check your insurance covers you for flooding

- Make a flood plan and prepare a flood kit. This can include: a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons
- Identify who can help you/ who you can help
- Understand the flood warning codes

## During a Flood Warning

- Move furniture and electrical items to safety
- Put flood boards, polythene and sandbags in place
- 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
- Move your car out of the flood risk area
- Move any large or loose items or weigh them down
- Inform your family or friends that you may need to leave your home

Take the advice of the emergency services and evacuate if told to do so. If you need to evacuate, take with you your prepared flood kit.

Avoid walking or driving through flood water, even shallow fast-moving water can knock over an adult or move a car.

## Conclusions

The site is located within Flood Zone 3. Where the chance of flooding in any given year is greater than 1 in 100 (0.5%) in a tidal flood event.

The site is at risk of reservoir flooding, however, this is highly unlikely as the reservoirs are maintained and monitored regularly.

The proposed development is for a Loft Conversion, Dormer and associated internal and external remodelling.

These alterations will slightly increase the footprint of the building. The application is classed as minor development. Minor development is appropriate in more vulnerable sites in Flood Zone 3.

It is assumed that the existing arrangement for the discharge of surface water from the development is into the surface water / combined sewerage system. The impermeable area of the site won't be increased, and the existing system is able to support the discharge of water. The proposal will not increase the risk of flooding.

As the site is located in Flood Zone 3. It is recommended that any residents sign up for flood warnings and prepare a flood plan.

Therefore, the proposed development in this compared to the flooding risk of the area is appropriate and in accordance with the National Planning Policy Framework.

Appendix  
Photographs of the Site

