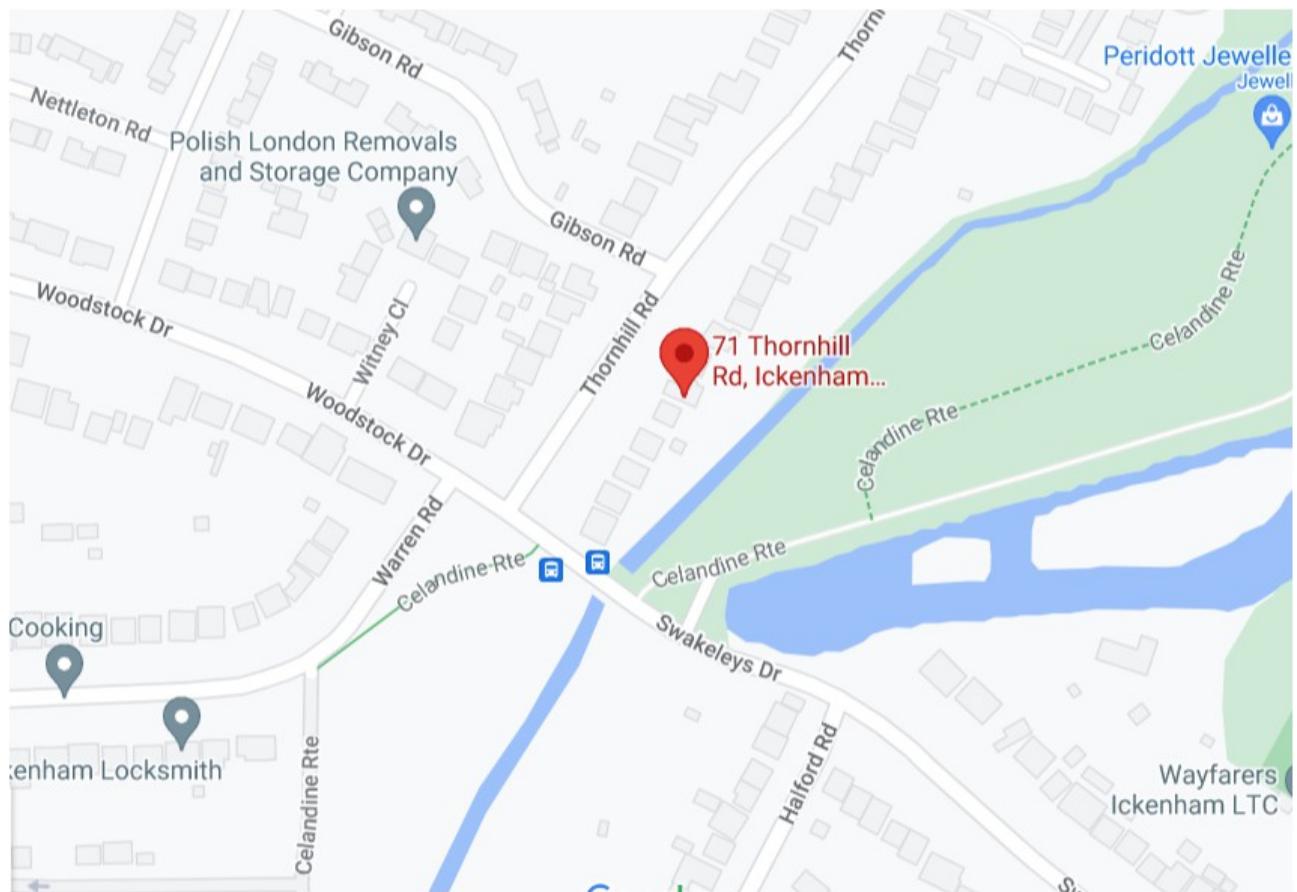


FLOOD RISK ASSESSMENT FOR MINOR DEVELOPMENT

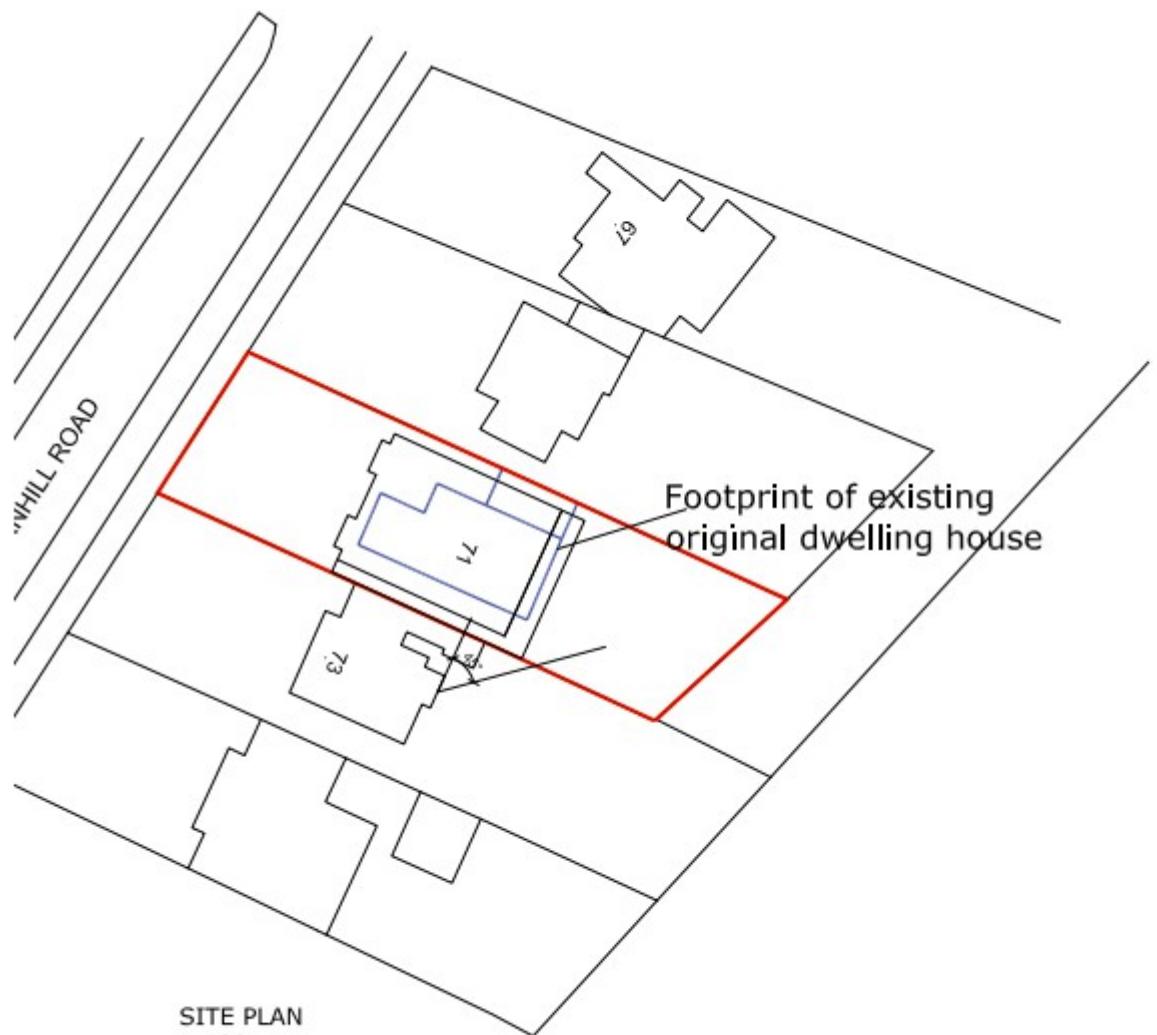
71 THORNHILL ROAD ICKENHAM

Dated 8 August 2022



GEOGRAPHICAL LOCATION

SITE MAP



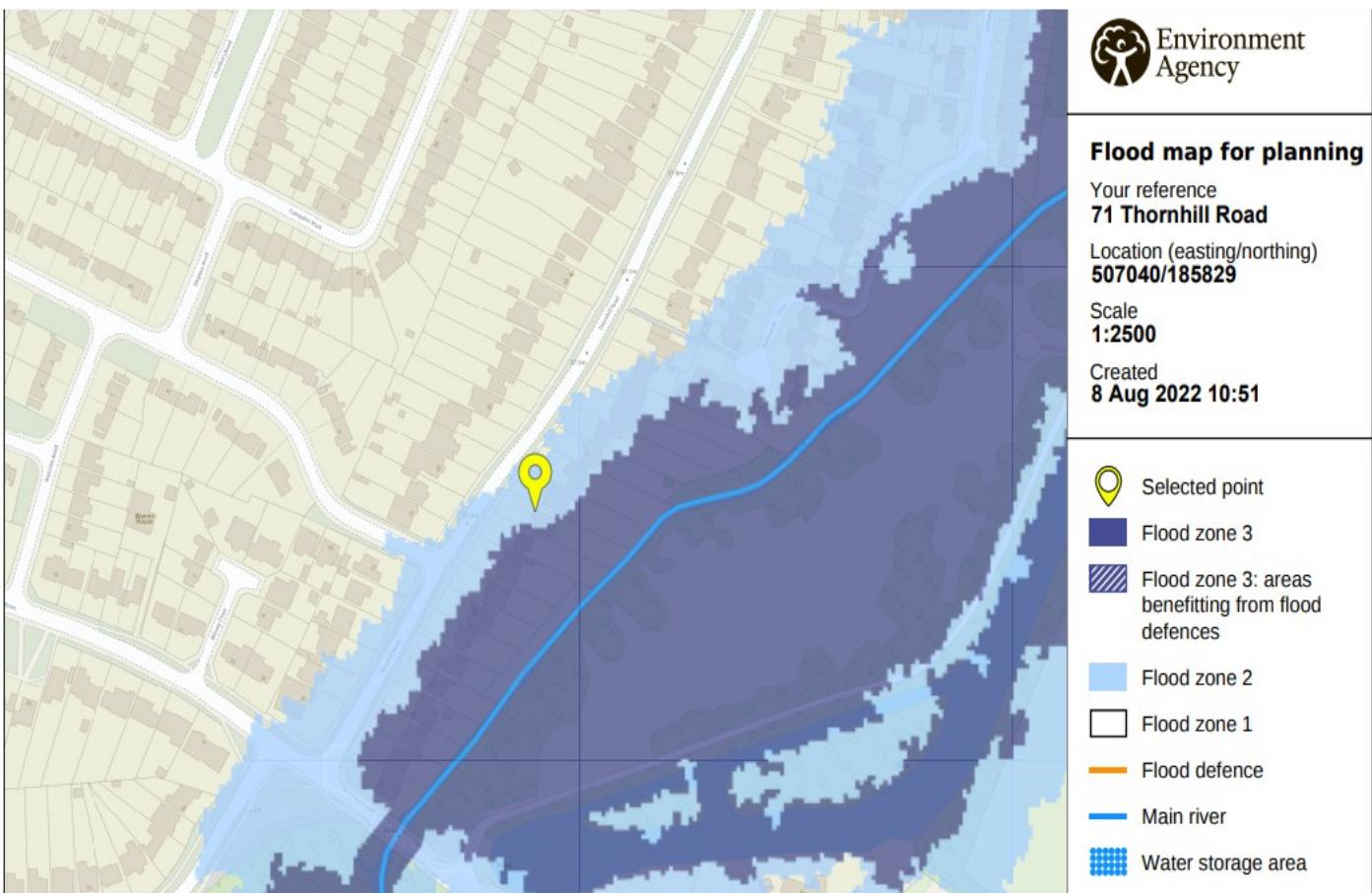
Flood map for planning

Your reference
71 Thornhill Road

Location (easting/northing)
507040/185829

Created
8 Aug 2022 10:51

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



ENVIRONMENT AGENCY FLOOD MAPPING FOR SURFACE WATER THREAT

Flood risk

Medium risk: depth



Surface water flood risk: water depth in a medium risk scenario

Flood depth (millimetres)

Over 900mm 300 to 900mm Below 300mm Location you selected

SITE

SHOWS EXISTING PROPERTY BORDERED BY AREA BELOW 300MM OF SURFACE WATER .

“MEDIUM” IS THE EQUIVALENT OF THE 1 IN 100 FLOOD RETURN CATEGORY.

**PROPOSED REPLACEMENT OF EXISTING DOMICILE WITH A NEW HOUSE AT 71
THORNHILL ROAD ICKENHAM LONDON UB10 8SH**

FLOOD RISK ASSESSMENT / DESK TOP STUDY.

This report is compiled for a planning application . Detailed plans are within the appendices to this report.

It is written under the criteria within the National Planning Policy Framework (NPPF) and the Environment Agency (EA) Guidance notes to local authorities.

Environment Agency flood mapping for planning shows the site under assessment stands in fluvial flood zone 2 which the EA considers is a medium threat and in its surface water flood mapping the EA puts the property in an area below 300mm.

The NPPF guidelines direct that all forms of authenticated mapping should be used in flood risk assessments . The mapping for the West of London SFRA is also used in this assessment in order to conform with NPPF criteria that all sources of flooding should be considered in an FRA.

The proposal by the applicant is that the existing residential property on the site should be demolished to make way for a replacement dwelling on very much the same footprint.

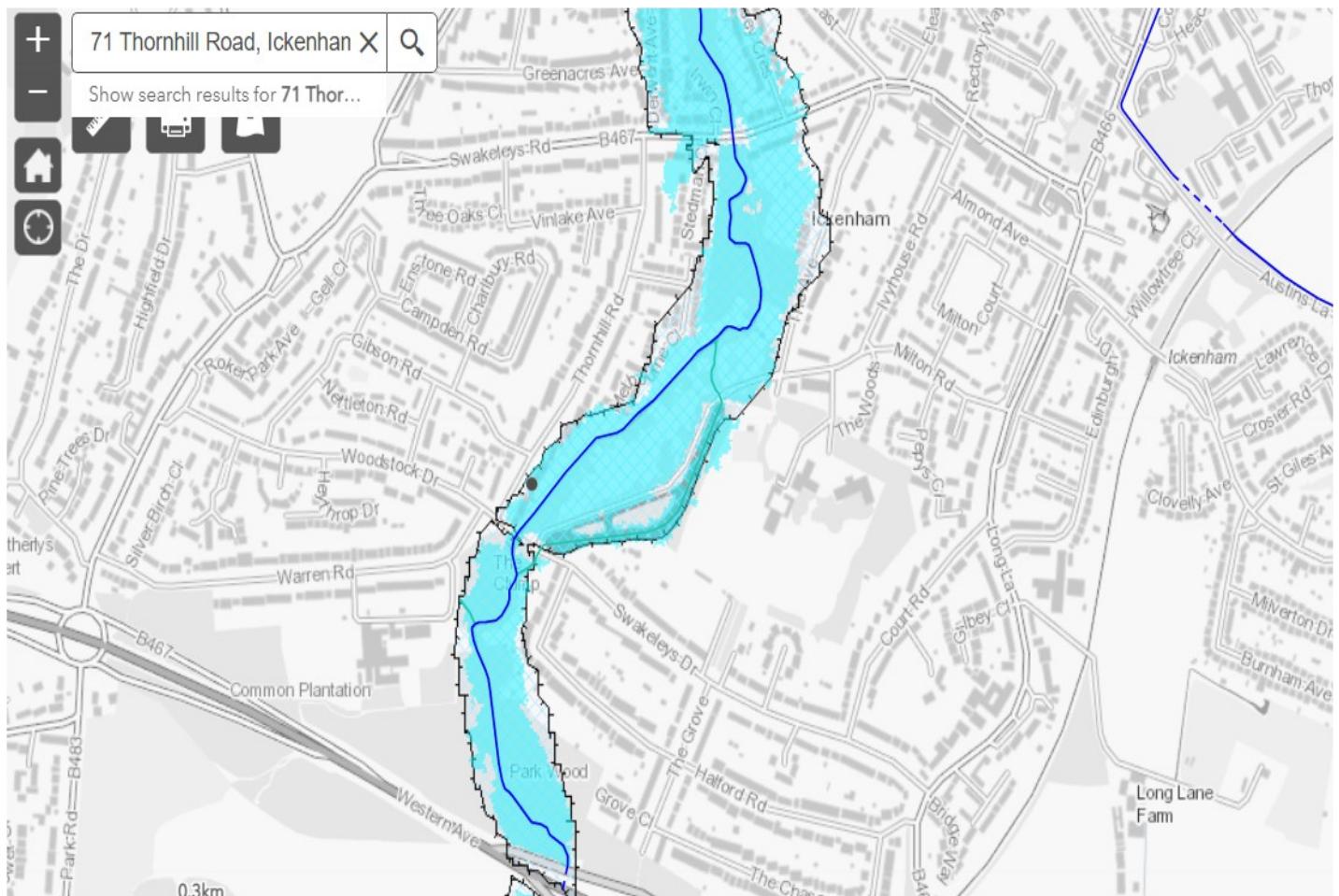
The new development is considered to be “more vulnerable” under NPPF and EA criteria . This is the same category as the existing property.

Replacement of an existing property does not attract the sequential test but a FRA is required to ensure that all sources of flooding are considered to make sure occupants would be safe , that the fabric of the property is protected and that there would be no offsite implications affecting other residents nearby.

There will be five bedrooms in the new house , all of them above the ground floor which will be used for living accommodation alone.

Historic Flood Mapping

This is shown on the page below taken from the West of London SFRA mapping



From this it is shown that the site has flooded from the River Pinn to the East but it is so much on the edge of flooding that it is highly likely that there was no internal flooding of the existing house itself. It would have been very much standing water in the garden with limited , if any , velocity.

- ◆ The site does lie in a flood alert and a flood warning area.
- ◆ It is not within Flood Zone 3b a flood storage area
- ◆ The site does not have the benefit of flood defences.
- ◆ Thames Water has recorded up to 40 instances of sewer malfunction in a very wide area of the site under assessment (presumably over a ten year period) . This is not considered significant to this assessment.
- ◆ The EA considers the susceptibility to groundwater flooding is at its lowest level which is 25%
- ◆ There is increased potential for elevated ground water .
- ◆ The site does not fall within a source protection zone
- ◆

- ◆ There is a threat from reservoirs from water borne on the River Pinn.
- ◆ The EA considers there is hardly a threat, however, due to the husbandry and inspection works carried out at reservoirs throughout the country

Artificial sources

There is a large pond to the North East of the site under assessment. This would appear to be an attenuation area for local housing to the North and would take flood water from the River Pimm to assist attenuation. This would appear to be the major pathway due to gravitational flow from the River.

Obviously this takes flood water which otherwise would flow towards the site under assessment.

Ground Floor Construction

The ground floor and the entry level to the proposed house should be at 350mm above ground level which is very much the norm for new residential building. Anything higher than that could conflict with planning regulations for ceiling heights and elevations.

Flood Resilience Measures.

As there is a history of flooding here and considering climate change over the sustainable lifetime of the property – which is 100 years - it is considered that flood resilience measures are required for the proposed building.

It is recommended that the external doors should be made floodproof and that further flood resilience measures be taken.

- ◆ Both the inside and outside of the extension works should be coated with flood resilient material to a height 400mm above the ground floor level.
- ◆ The electrical wiring should drop from the ceiling to sockets 400mm above ground floor level.
- ◆ All drainage and waste pipes would be fitted with 'non-return valves' to prevent the ingress of contaminated water back into the building.
- ◆ No metal piping should be used under the extension to abort future corrosion.
- ◆ The mortar mix should include flood protective material including the foundations.
- ◆ The ground floor should be of concrete rather than wood.
- ◆ The electrics should be connected to the mains box so that this controls all electrics to the whole property..
- ◆ Covers should be available to cover any airbricks in the construction. These should

be removed as quickly as possible after the flooding to help drying out

Evacuation Procedure

This is considered to be a long term measure to include the sustainable life time of the property. It will face climate change change and exceptional storms both of which hve been forecast for the years to come.

In a worst case scenario it is considered relevant for the occupants to be subscribers to the EA Floodline initiative which gives a three phase warning of possible flood threat : 1. Be aware that flooding could be possible : 2. Prepare for evacuation and 3.Get out.

However in the FRAs we compile all over the country we make it clear that there is only one method of safe evacuation. That is to get out when the escape route is still dry .

The Floodline initiative may give occupants of the site a misconception as to how long they should stay on site before going. We consider that the sight of advancing floodwater can create panic particularly to the old ,infirm and the disabled and children as well.

Better to go at the first warning when everything can be done in a controlled and orderly manner and in the dry. If the flood waters do not actually reach the site then nothing is lost .

But there is a big gain in terms of safety. It will also show the evacuation plan works and will give everybody concerned the confidence of knowing the site owners value their safety.

As part of the evacuation procedure a predetermined sanctuary in the dry should be decided upon and agreed with the local authority.

Also by using the first floor as “safe haven” during a flood event is not necessarily the answer . The reason being that vital services -such as water , gas and electricity- to the premises could be knocked out by the floods and this could cause major disruption to the safety and well being of occupants

We have used this methodology on many occasions for FRAs throughout the country . We have had no objections from the local authorities involved in all the FRAs recommending this form of early evacuation.

Quite simply it is better“to be “safe than sorry” particularly when human lives are at stake.

Sustainable drainage.

All authorities need to see that applicants are conscious of sustainable drainage being used in new development. This is within the criteria of the NPPF and the EA . It should be improved upon if possible otherwise developers must get as near to this as possible.

The West of London SFRA shows that there is permeability under the site but this should not be considered if groundwater can be near the ground surface .Apart from that five boreholes were investigated under BGS and all of them near the site showed signs of

London clay being present.

This is not conducive to soakaways being used . Soakaways are not considered viable unless ground tests have been carried out at the site to prove otherwise.

The history of this would be available from previous building works carried out.

A preferred strategy would be the use of overcapacity water butts to harvest the run off from the proposed building. A French drain should also be installed to take any overtopping of the butts during and after an exceptional storm event. The drain should carry water to an area of the site which can be used for attenuation.

It may be considered that the run off from the extension should be tapped into the existing mains drainage in which case the drainage should be fitted with interceptors to make sure only clean water enters the receptor. Also flow control devices should be fitted to ensure the water doesn't create a "surge" into the receptor.

CONCLUSION

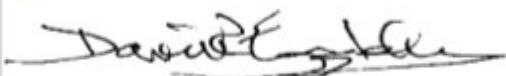
Flood mapping from the EA shows that the property under assessment is at limited threat from flooding from all sources but in a worst case scenario there could be a more significant threat during the property's sustainable lifetime.

This is why flood resilience measures have been recommended and also a well regimented evacuation plan has been included in the study report.

The duty of an assessor is to consider the safety of occupants and recommend measures to make sure there will be no offsite implications by virtue of the proposed development. Measures also need to be made for the protection of the fabric of the proposed development.

All such measures have been considered in this report adhering to the criteria as within NPPF guidelines and the EA Advisory Notes to Local Authorities.

Signed



David Eggleton
Managing Director.