Flood Risk Assessment

Address

43 The Avenue,

Ickenham,

Uxbridge UB10 8NR

Site Context

The site is a 2 storey detached house, comprising 4 bedrooms, 1 ½ bathrooms, a kitchen, dining, utility, living room and garage.

The GOV.UK website states that the site is located in flood zone 2, so it has a medium risk of flooding from rivers and the sea; between 0.1% and 1% chance of flooding from rivers, and between 0.1% and 0.5% chance of flooding from the sea each year.

However, the chance of flood risk from surface water is low, which means the property has between at 0.1% and 1% chance of flooding from surface water each year.

There is a risk of flooding from reservoirs in this area, namely the George V FSA reservoir, and the Ruislip Lido.

Furthermore, flooding from ground water is unlikely in this area.

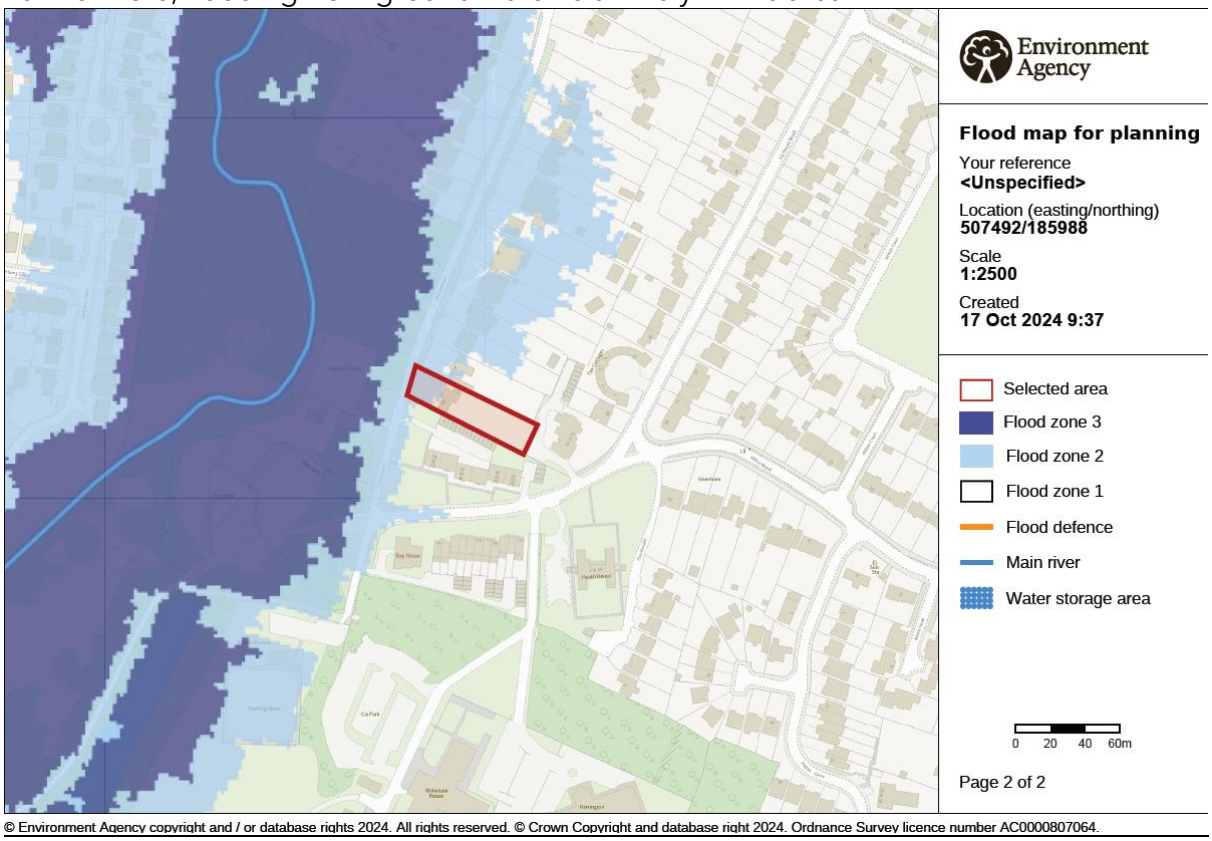

Figure 1: Flood risk map of the property from rivers

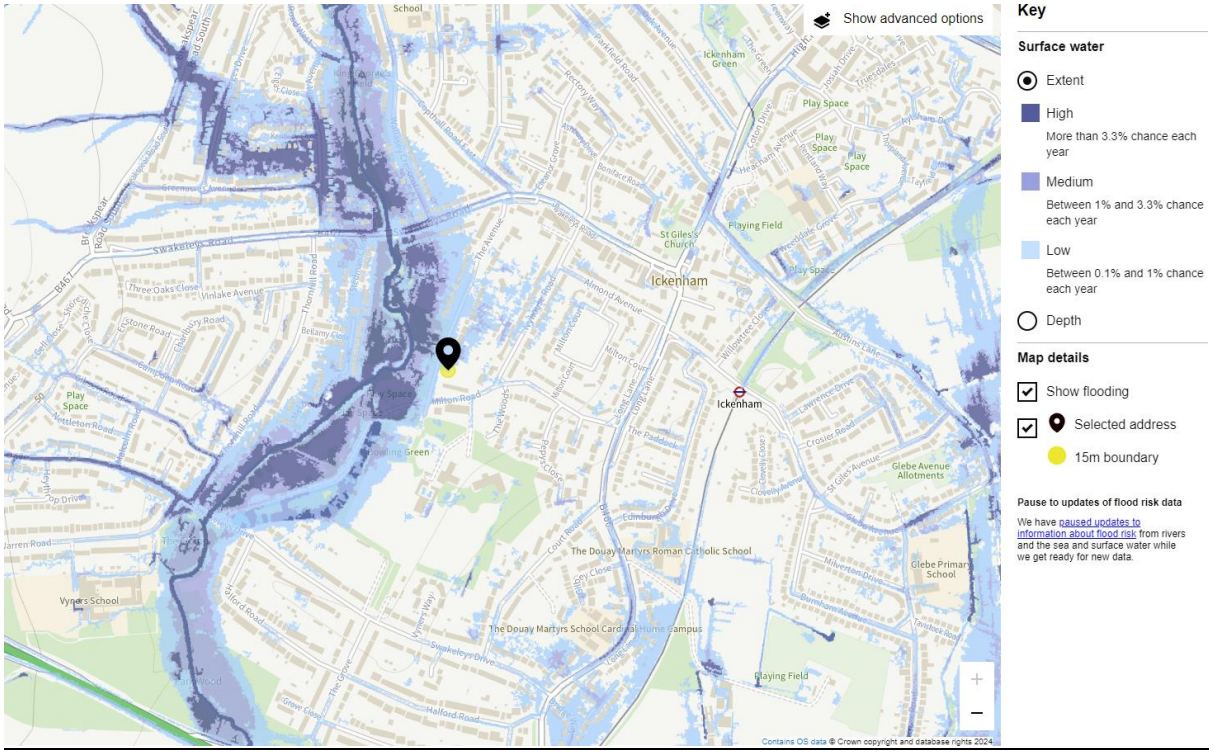

Figure 2: Flood risk map of the property from surface water

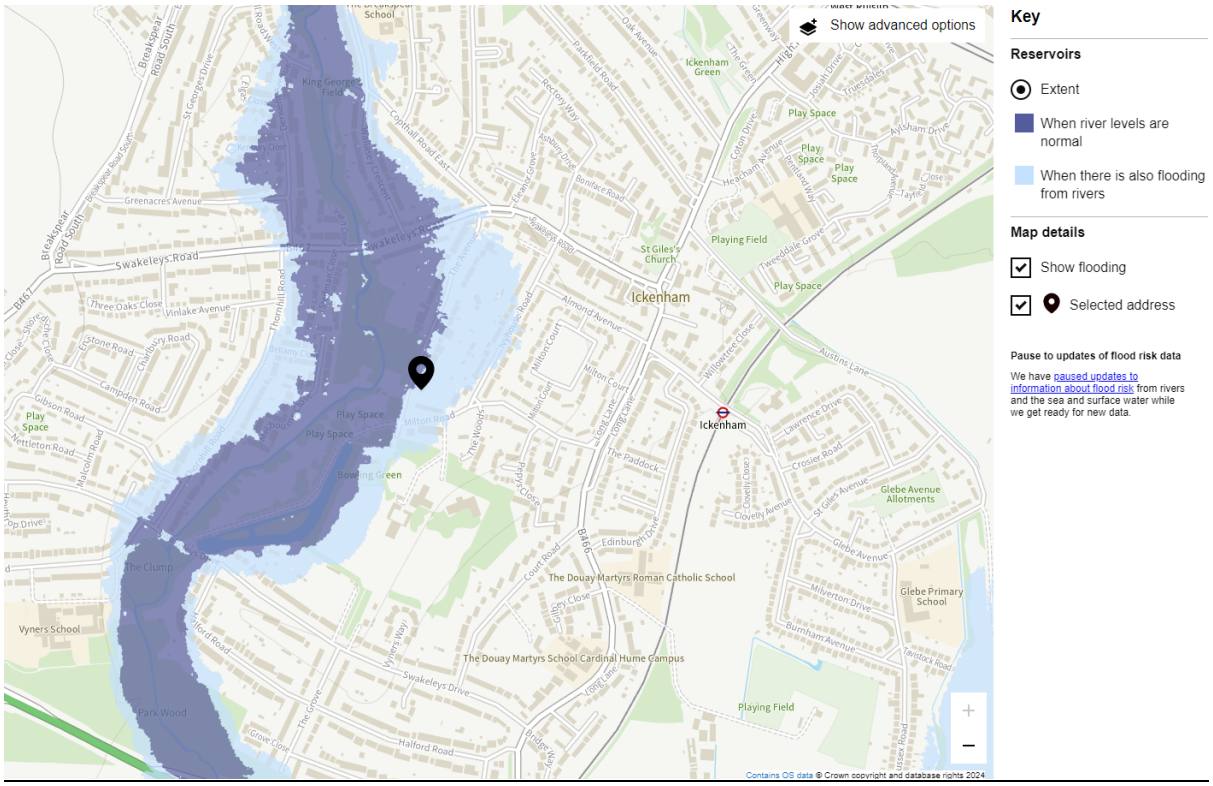

Figure 3: Flood risk map of the property from reservoirs

Proposal

The proposal is for a single storey wrap-around extension, extending out 3.22m from the side of the property, then extending 4m from the left-hand side of the rear of the property, 4m from the right-hand side of the rear of the property, and a further 3.883m out from this extension centrally. The proposal also includes a first-floor rear extension and a first-floor side extension, as well as enlarging the existing porch to the front of the property. This adds an external footprint of 111.962m2 to the existing house, for a total footprint of 217.268m2 for a combined total of the existing house plus the extensions.

The extensions are to comprise of tiled pitched roofs.

The extensions will also match the existing ground floor level of the property, and therefore will have a ground floor level of 80mm above ground level to the rear of the property, and 130mm above ground level towards the front of the property, and so threshold drain channels will be utilised in front of all doors, including the garage.

In order to minimise flooding from surface water, the proposal is to contain 110mm UPVC half round gutters taken and connected into 68mm diameter UPVC downpipes. Rainwater will be taken to new soakaway, situated a min distance of 5.0m away from any building, via 110mm diameter UPVC pipes surrounded in 150mm granular fill. Soakaway to be a minimum of 1 cubic metre capacity (or to depth to Local Authorities approval) with suitable granular fill and with geotextile surround to prevent migration of fines. If necessary, a porosity test will be carried out to determine design and depth of soakaway.

Details of floor proofing / Resilience and Resilience Techniques:

1. Floor levels will be no lower than the existing property.
2. Low permeable bricks to be used, however it is important to match the style with the existing brickwork.
3. Mortar Specifications are to be as follows: (see figure 1)
    - Mortars below DPC to be 1:3 (cement:sand)
    - Mortars above DPC to be 1:6 (cement:sand)
4. Hardcore & blinding to be 'well' compacted.
5. Proposed floor to be solid concrete ground supported (see figure 2)
6. Floor insulation to be closed cell type.
7. Engineering bricks to be specified up to DPC level (see figure 1)
8. Damp Proof Membrane (DPM) – Impermeable polythene membrane to be a minimum 1200 gauge. Overlaps of min 300mm and taped.
9. All openings to be adequately sealed to the fabric of the house.
10. Non-return valves to drainage services to prevent back-flow into the property.
11. All electrical services to be installed above flood level.
12. Communication wiring to be properly insulated.

Table 6.1 **Flood resilience characteristics of building materials (based on laboratory testing)**			
Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good
* Resilience characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth			

Figure 4: Table showing the floor resilience of proposed materials

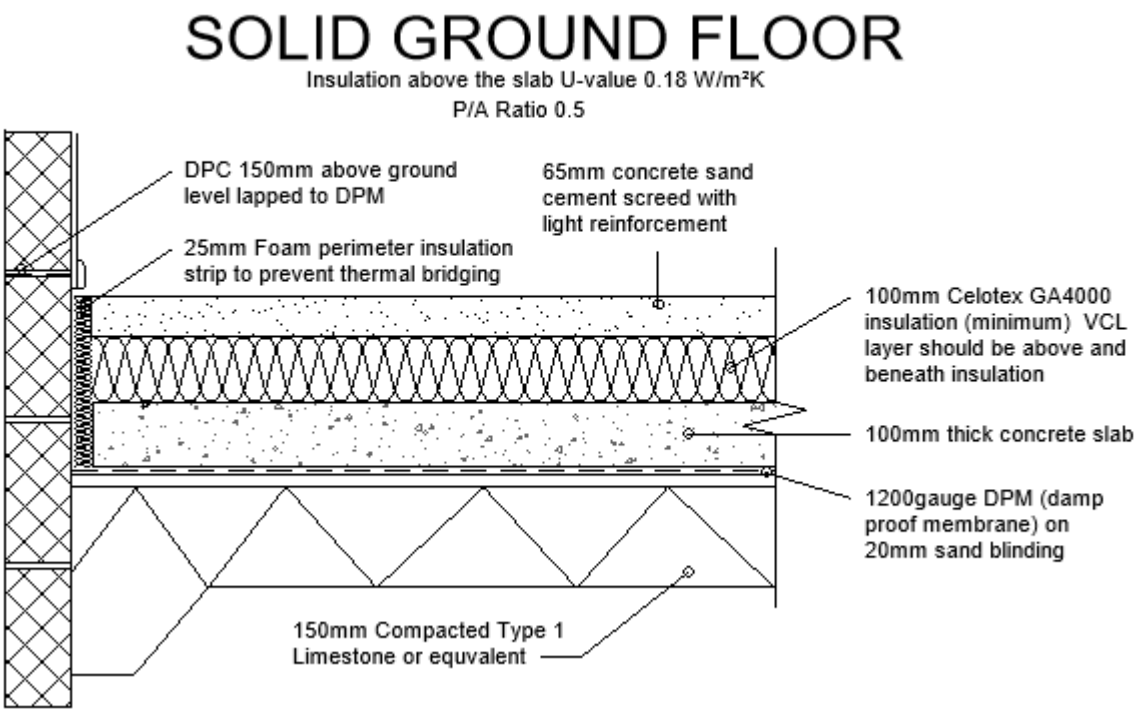

Figure 5: Proposed detail of the ground floor.

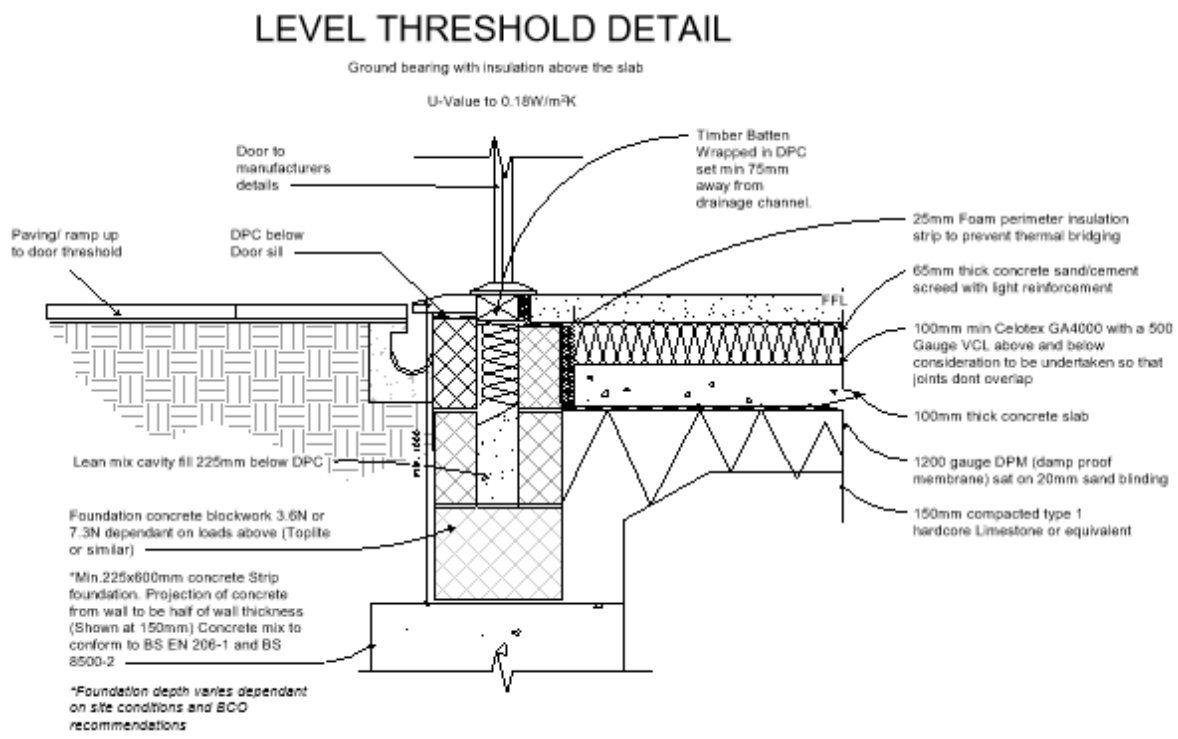

Figure 6: Proposed threshold detail