

## **FLOOD RISK ASSESSMENT (FRA)**

**SITE: 56 Diamond Road, Ruislip, HA4 0PG**

**PROPOSAL: Retrospective application to retain existing single storey front extension with proposed alterations to roof**

### **GUIDANCE:**

- **CLG 2007 'Improving the Flood Performance of New Buildings' publication**
- **Flood maps from the Environment Agency**

### **Contacts:**

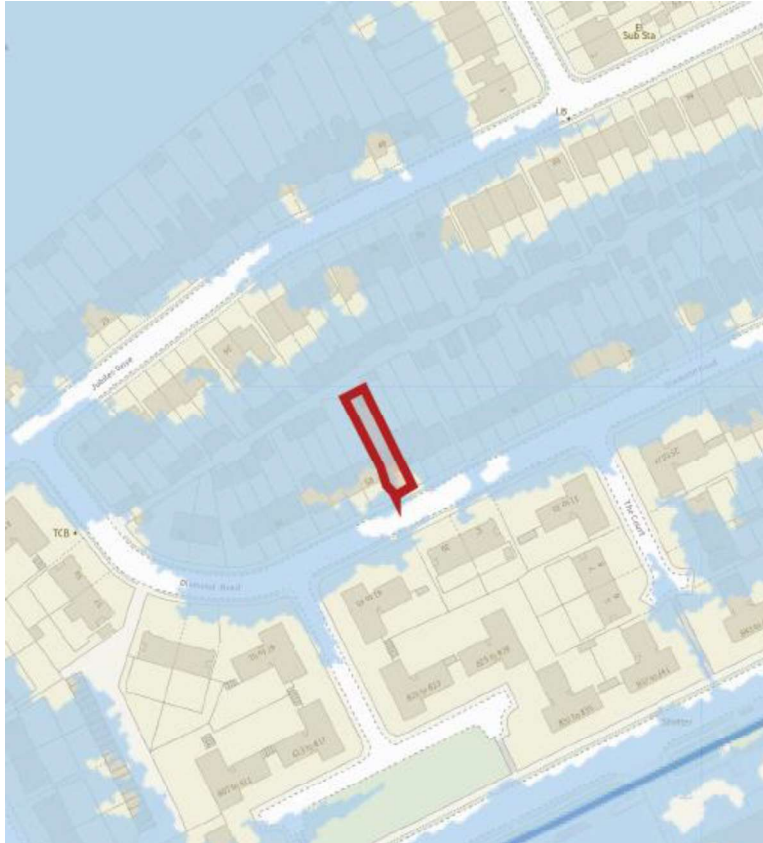
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## **Introduction**

This statement has been prepared on behalf of our client, Mr S. Kugathasan for whom we submit a Flood Risk Assessment in support of the Planning application.

## **Flood zone**

A flood zone map detailed by Environment Agency indicates that the property is in flood zone 2, an area with a medium probability of flooding.



-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

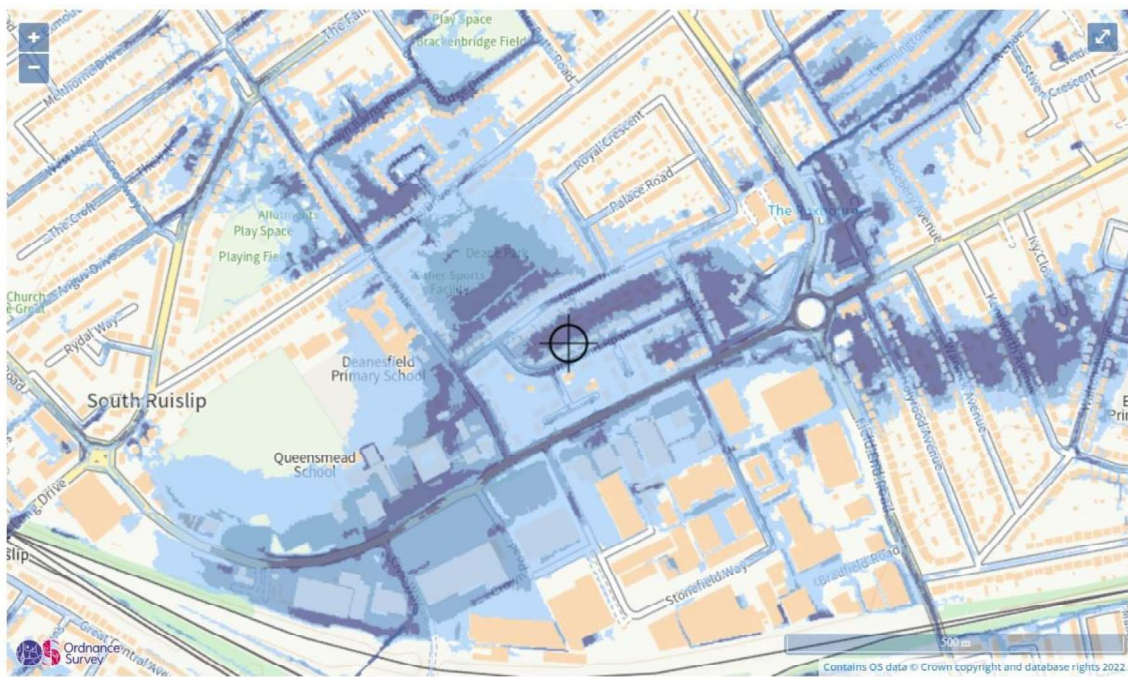
Extract from the flood map from Environment Agency (Map 01)



Extent of flooding from rivers or the sea

Extract from the flood map from Environment Agency (Map 02)

The above map (Map 02) by Environment Agency shows that there is a low risk from flooding from rivers or the sea. Low risk means that this area has a chance of flooding of between 0.1% and 1% each year.

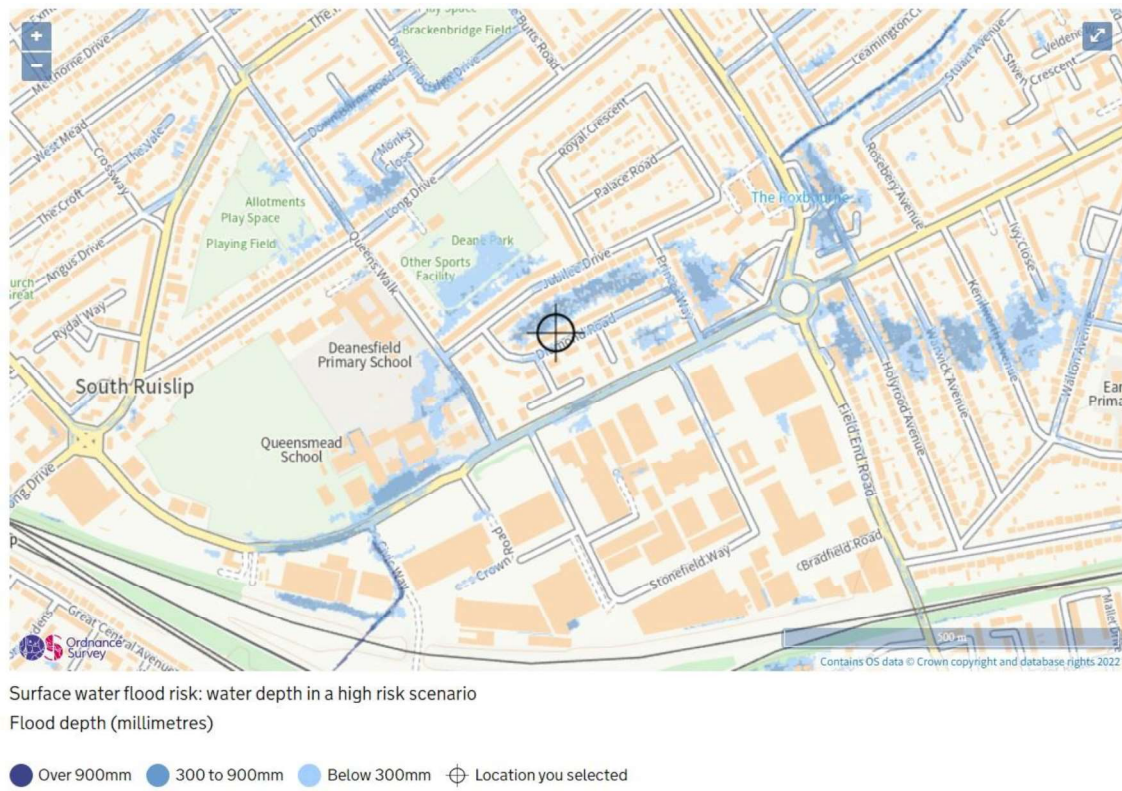


Extent of flooding from surface water

Extract from the flood map from Environment Agency (Map 03)



The above map (Map 03) by Environment Agency shows that there is a high risk from flooding from surface water. This flood risk summary reports the highest risk from surface water within a 15 metre radius of this property. High risk means that this area has a chance of flooding of greater than 3.3% each year.



Extract from the flood map from Environment Agency (Map 04)

The above map (Map 04) shows that the surface water flood depth for the site is below 300mm.

At predicted depths less than 0.3m, and for short duration floods, the strategy is to adopt a 'resistant' approach and try to keep water out of a building i.e. water exclusion strategy. For flood depths between 300 and 600mm a decision needs to be taken as to whether it is feasible or practical to adopt the water exclusion strategy. At predicted depths more than 600mm, the strategy to adopt is the water entry strategy- 'resilient' design.

The depth of surface water flooding expected for the site is below 300mm, therefore it is considered to adopt the water exclusion strategy- 'resistant' approach.

## **LIST OF FLOOD MITIGATION MEASURES:**

### **GROUND SUPPORTED FLOORS:**

Hardcore and blinding: 40mm sand blinding on min. 150mm thick well compacted hardcore is necessary to reduce the risk of settlement and consequential cracking.

Damp proof membrane: Impermeable polythene membrane should be at least 1200 gauge to minimise ripping. DPM should be lapped a min. of 150mm with inner leaf DPC and taped and sealed together. Care should be taken not to stretch the membrane in order to retain a waterproof layer.

Insulation: Floor insulation should be of the rigid closed- cell type to minimise the impact of flood water.

Floor finish: 65mm thick sand/ cement screed floating with chicken mesh. Alternative finishes include ceramic or concrete based floor tiles, stone etc. 1200 gauge polythene vapour barriers should be provided below screed to avoid drying of the insulation material. All tiles should be bedded on a cement based adhesive/ bedding compound and water resistant grout should be used. Suitable materials for skirting boards include ceramic tiles or PVC.

### **EXTERNAL CAVITY WALLS**

Masonry walls: External Brickwork from the new foundation to DPC level to be engineering bricks (either Class A water absorption < 4.5% or Class B water absorption < 7.0%) to increase resistance to water penetration. The mix for concrete and mortar should use sulphate resisting cement. Internal wall to be of aircrete blocks and they should be sealed with impermeable materials to minimise the entry of water.

Insulation: Cavity Insulation should be rigid closed- cell material.

Internal linings: Internal cement renders (with good bond) should be used on the internal surface of the wall.

### **DOORS AND WINDOWS:**

Doors: Raising the threshold as high as possible, while complying with level access requirements, should be considered as primary measure. In addition, sealed PVC external framed doors should be used.

Windows: Window sills should be sealed adequately to the fabric of the house. Double glazing windows should resist the pressures generated by flood waters.

### **SERVICES:**

All new electrical services, boilers and communications wiring should be installed above flood level for ground floors to minimise damage to electrical services and

allow speedy re-occupation with raised sockets, and controls such as thermostats should be placed above flood level.

#### SURFACE WATER RUN-OFF:

The increase in surface water run-off from the development will be minimal and unlikely to have any overall detrimental effects upon the surface water system. However, in order to reduce peak flow rates, water butts to be installed to catch the increased surface water.