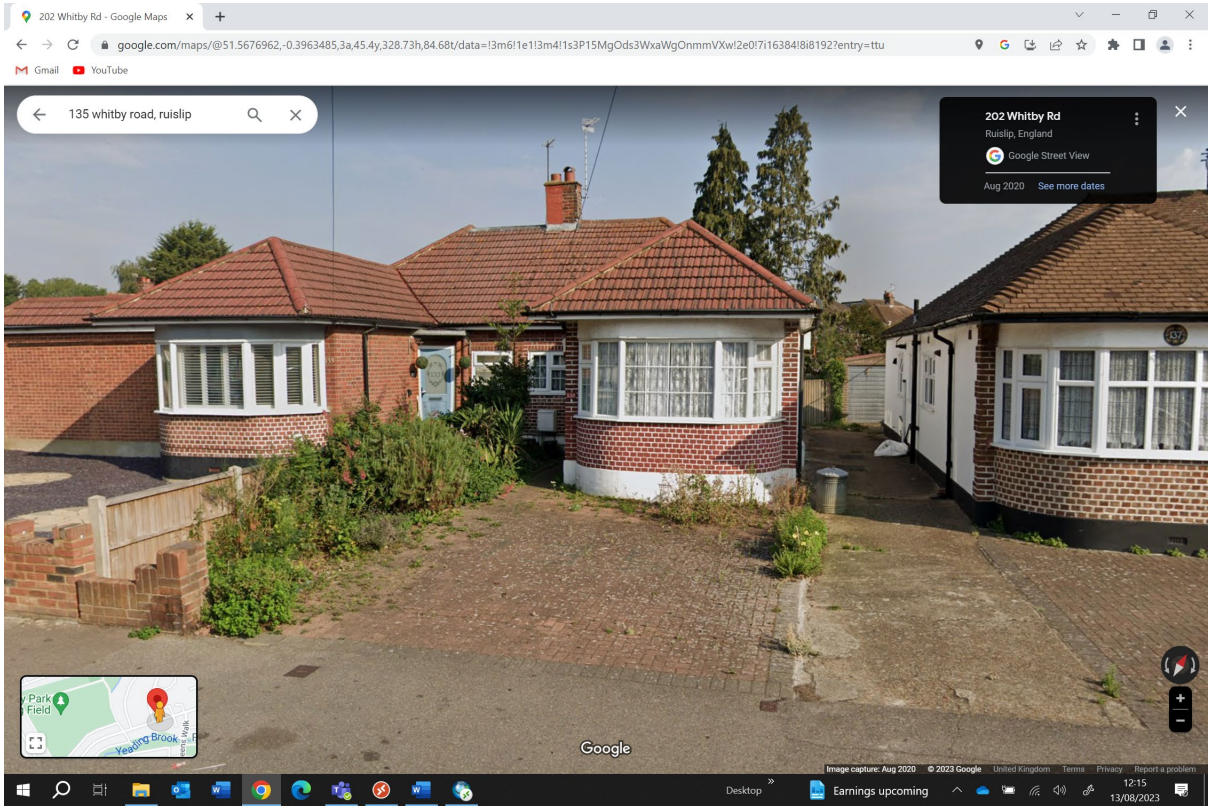
Flood Risk Assessment to support a planning application for a proposed extension at 135 Whitby Road, South Ruislip



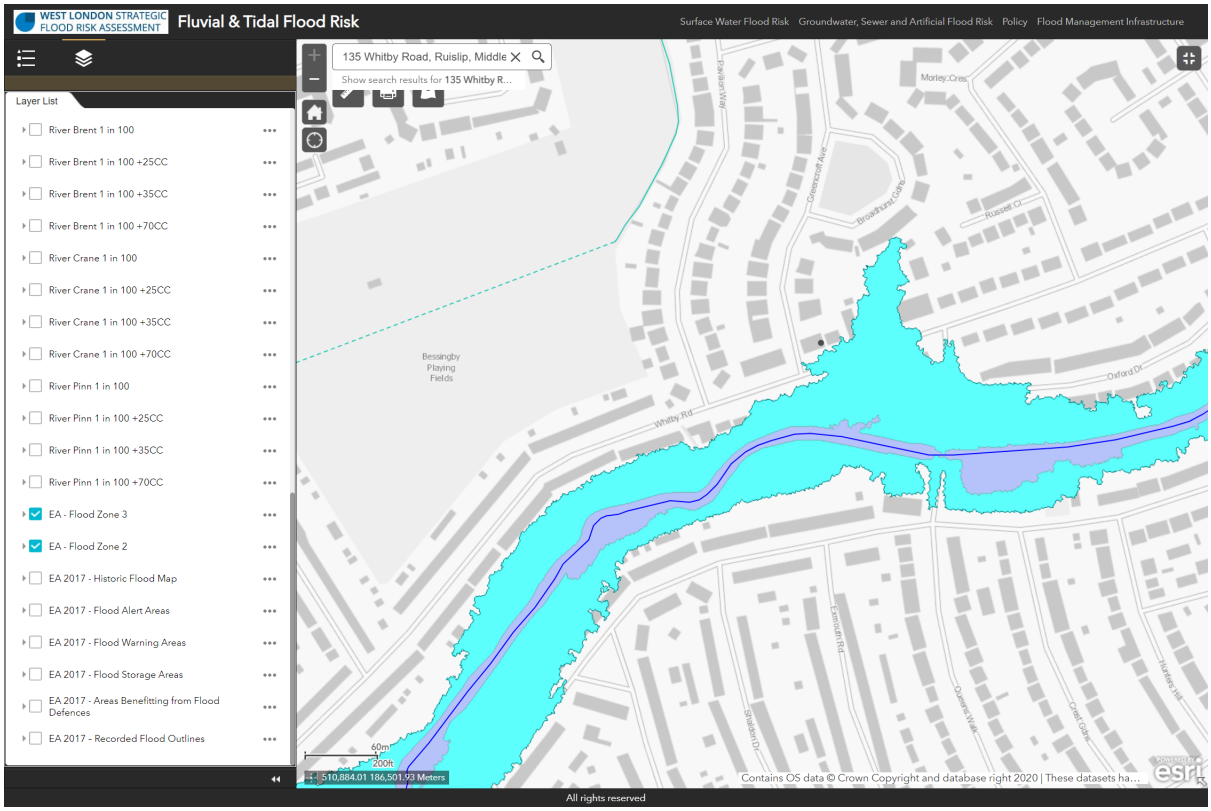
Existing and Proposed Drainage:

Details of the existing drainage at the site are not known. It is considered likely that surface water runoff outfalls into a public drainage system within the road.

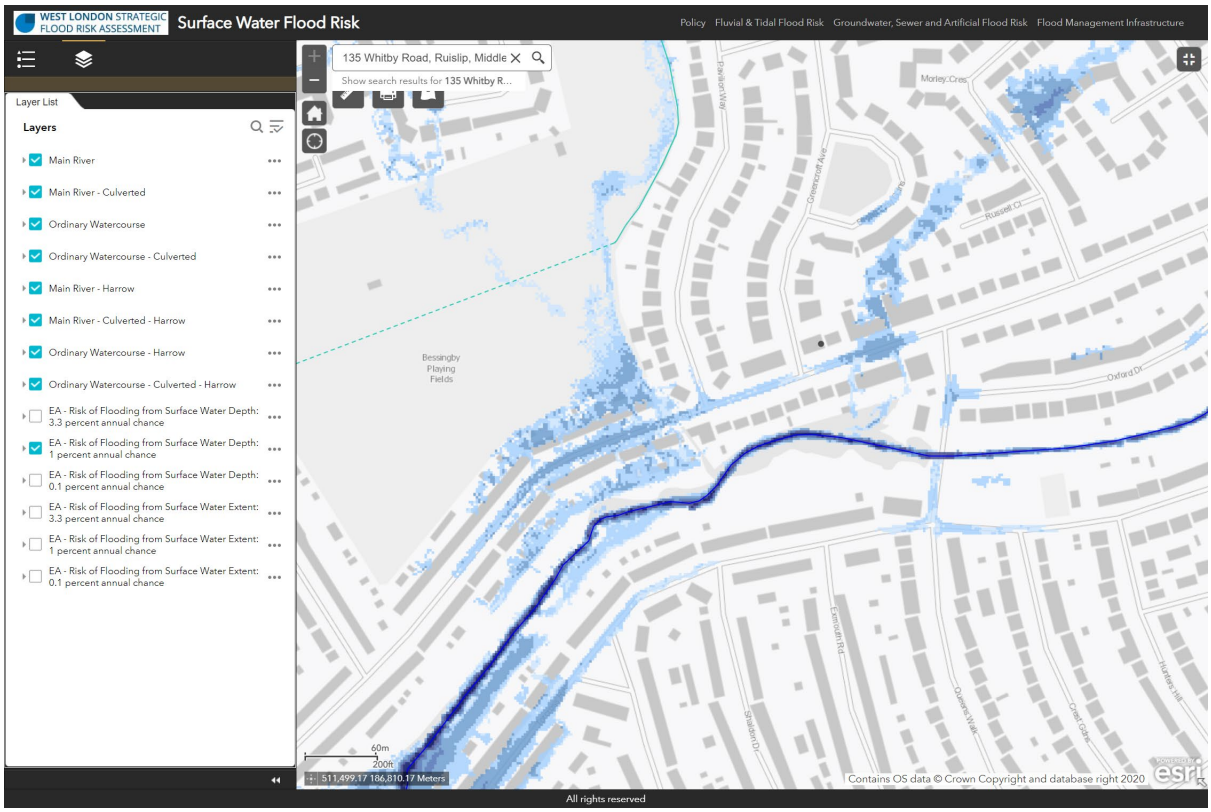
In order to provide no increase in surface water run-off from the development, it is proposed to drain the proposed roof areas into a new soakaway system to be located within the front garden of the property.
Although the clay ground conditions are not typically favourable for infiltration, soakaway systems can still be provided based on conservative design principles calculated at $1m^3$ for every $16m^2$ of surface area being drained.
Alternatively, a such minor development can discharge to the existing surface water drain.

Flood Risk Status and Development Viability

Fluvial flood risk originates from a main river / watercourse of any size that may affect a site when the channel capacity is exceeded. This type of flooding often occurs following an extreme rainstorm event or a prolonged period of wet weather.
The EA Flood Map below shows that the site is located within fluvial Flood Zone 2, however, a new construction is not in a flood plain.



The EA Flood Map below indicates that Whitby Road public highway may be flooded from surface water during a 1 in 30 (3.3%) and 1 in 100 (1%) year event but are not expected to impact the development proposals.



In accordance with Table 2 of the NPPF: Flood Risk and Coastal Change, the development type is considered to be appropriate in Flood Zones 1 & 2.

The development proposals comprise:

- A proposed porch extension.
- The footprint of the proposed ground floor extension is approximately 6.7m^2.

The West London SFRA (2018) requires proposed developments to provide Flood Compensation Storage for loss of flood plain in surface water flood Zones 3a & 3b and fluvial zone 3.
Given the dwelling is not located within any of these flood zones, Compensation Flood Storage is not required and fluvial & pluvial floodings in the area are not expected to impact the development proposals.

Access/Egress

Access and Egress to the site is via Whitby Road.

Access and Egress to the site may be restricted during a flood event should the public highway flood. Should the public highway ever flood, the occupants should remain within the site until floodwater has receded so that safe access and egress can be achieved.
The occupants should not drive through flood water.
It is recommended that all occupants are signed up to the EA Flood Warning Service and are aware of weather warnings that could provide an indication as to when surface water flooding may occur. A Flood Action Plan could also be prepared.

Flood Resistance

Although the dwelling is located within Flood Zone 1, surface water flood depths are indicated to potentially affect the site. Therefore, flood resistance measures could be considered as part of the design proposals should the occupier wish to mitigate against extreme flooding scenarios.
Flood resistance measures that could be considered include:
 Flood Doors or Barriers: Flood doors could be installed at external entrances at the lower ground floor level. Alternatively, demountable barrier systems could be installed across doorway openings to prevent water ingress.
 Raised Floor Levels: It is good practice to raise the ground floor above adjacent external ground levels to minimise the risk of water ingress should localised surface water flooding occur adjacent to the building. It is recommended that ground floor levels are set a minimum of 150mm above surrounding external ground levels.
 Air Bricks / Vents: Should a suspended floor (timber or beam and block) be proposed as part of the development, self-closing anti-flood air bricks can be provided to prevent water ingress into the floor void should low-level flooding ever occur adjacent to the site.
 Non-Return Valves: To mitigate against sewer surcharging within the private drainage system, surcharge protection would be achievable through the use of non-return valves within the drainage system or pan seals with backflow valves on sink outlets.
 Masonry: The occupier should keep external walls in good condition to minimise the potential for flood water to ingress through this point. Basic maintenance includes keeping masonry pointing in good order. Brickwork could be treated with a waterproofing cream to help reduce ingress and pointed with a waterproof additive.

Flood Recoverability

Flood recoverability is where emphasis is placed upon making a site recoverable from a flooding event as quickly and economically as possible. Flood recoverable buildings are designed and constructed to reduce the impact of flood water entering the building so that no permanent damage is caused, structural integrity is maintained and drying and cleaning is easier. There is an opportunity to consider flood recoverability measures within the internal fixtures and fittings proposed. However, as the flood risk at the dwelling is low, such measures are not considered critical.
Flood recoverability measures that could be adopted include:

- **Internal Walls:** Promoting the use of water-resistant plaster and plasterboard (horizontal application where possible).
- **Skirting boards:** There are various options available for skirting boards. Wooden skirting boards can be treated with sealants such as Yacht Varnish to improve their flood resistance, or alternative materials can be used such as Tricoya or Plastic. It is also possible to use a tiled upstand.
- **Wiring:** Raising of electrical sockets as far up the wall as reasonably practicable and avoiding low level junction boxes or fuse boards will reduce any water damage to these items.
- **Flooring:** The use of water-resistant flooring (such as concrete, tiles or stone), which would minimize the time and effort to clean away any flood water.
- **Raise Internal Apparatus:** Where possible, any internal apparatus that is not designed to resist water ingress should be raised (e.g. white goods); and,
- **Puddle Pump/Wet Vac:** To enable the efficient dewatering of the site in the event of water ingress, the provision of such items should be kept internally.

Flood Awareness & Maintenance

It is important that all residents at the site have an awareness of flood risk at a local level, and that any necessary actions can be taken prior to flooding.

- **Flood Warnings & Alerts:** The site is located within close proximity to an EA Flood Alert Area: *River Crane.* It is recommended that all occupants of the site are subscribed to the EA Flood Warning service through the following website:
https://www.gov.uk/sign-up-for-flood-warnings
- **Weather Alerts:** The Met Office provide weather warnings when extreme weather is forecast. Their service includes warnings for rain and thunderstorms. Surface water flooding typically occurs during and following torrential and/or high intensity rainfall and therefore these warnings may provide an indication of when flooding could happen. The occupants can check the local weather forecast and register to receive weather warnings from the Met Office through the following website:
https://www.metoffice.gov.uk/weather/warnings-and-advice
- ☐ **Flood Plan:** In order to efficiently prepare for a potential future flood event, the occupants could prepare an all-encompassing Flood Action Plan. The action plan should consider how to respond in the event of a flood. The Environment Agency provide template flood plan documents, copies of which are provided can be downloaded from the following webpages:
https://www.gov.uk/government/publications/personal-flood-plan
- ☐ **Drainage:** The site occupants should regularly inspect guttering and downpipes and clear any debris that exists. This will reduce the likelihood of any blockages and subsequent increase in surface water risk during heavy rainfall events.

Conclusion

The site has been assessed for a variety of flood sources, and based upon detailed analysis, this FRA has identified that fluvial flood risks at the site are considered to be medium, with the main dwelling potentially experiencing no flooding. Flooding from surface water, tidal, Groundwater, Reservoir and Artificial Sources are considered to be low/negligible. The client's development aspirations can manage/mitigate any residual flood risk as part of the design.
Flood Compensation Storage is not required, the proposed construction will not have any detrimental flood impacts on neighbouring areas.
A new soakaway system will be provided within the front garden of the property to drain a new roof.
This FRA has therefore demonstrated that the proposed development can be undertaken in-line with NPPF guidance, and that it is:

- Suitable in the location proposed.
- Unlikely to place additional persons at risk of flooding.
- Unlikely to increase flood risk elsewhere through the loss of floodplain storage, impedance of flood flows, or increase in surface water run-off.