Flood Risk Assessment for

30 Elmbridge Drive, Ruislip HA4 7UT

April 2025

This Flood Risk Assessment is written in support of the application for the planning permission for

13071/APP/2025/854.

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Introduction

This document has been prepared in relation to a proposed 'Erection of single storey extension following demolition of existing conservatory, and conversion of existing garage into storage and home office'. The objective of this FRA is to establish whether the proposed development is likely to be affected by current or future flooding from any source; whether it will increase flood risk elsewhere and whether the measures proposed to deal with these effects and risks are appropriate.

Location

The property is situated mid-way of Elmbridge Drive overlooking Kings College playing fields. The rear of the property backs onto Coteford Infant School. It is a residential road within a short walk of the centre of Ruislip and Eastcote.

Site Analysis

The site is located between Ruislip and Eastcote. River Pinn is around 32m to the south of the site. The site occupies an area of approximately 429 m2. The area of the building footprint is approximately 99m2 and the garage is approximately 23 m2. Most of the remaining site is covered by grass and soft scape, approximately 323 m2. Approximately 64 m2 area is covered by hard-standing pavement. There are no major watercourses around the site.

Site Characteristics

A four bedroom, three-storey, semi-detached house, currently occupies the site. The house is built of predominantly brickwork with a tiled dormer to the loft conversion. There is a suspended timber floor and air bricks designed to allow a free passage of air and water under the building. The main floor level is more than 400mm above the adjacent road level to the property.

Flood Risk from Flooding

The Environment Agency flood map shows that the site is situated in Flood Zone 3 with a chance of a 1 in 30-year flood from rivers or the sea. Please see Environment Agency Flood Map attached.

Flood risk from rivers or the sea

The site is identified as a zone 3 means that this area has a high chance of flooding of 3.3% AEP (1 in 30) each year. The closest river is the River Pinn.

Flood Risk from surface water

The chance of surface water flooding at this location could be more than 3.3% (1 in 30) each year. Therefore, the risk is high.

Flood Risk from reservoirs

There is a risk of flooding from reservoirs in this area. Flooding from reservoirs is extremely unlikely. Ruislip Lido is the reservoir that could affect the area.

Site Topography

The site is rectangular in shape with a max length of 44 m and a max width of 13 m. The site topography is mostly flat and level.

Design

The proposal consists of an erection of single-storey rear extension to include the demolition of the existing garage and rebuilding of the garage to include an office space. The footprint area of the proposed extension is approximately 17.6 m2 of additional floor area.

Good Design Principles

With the flood risk classed as high the following design principles will be adopted

- Electrical sockets are set 500mm above finished floor level.
- The introduction of underfloor heating would help the building to dry out
- The damp proofing course (DPC) will be raised 1200mm above ground level

Finished floor levels should be a minimum of (whichever is higher of) 600mm above the:

- average ground level of the site
- adjacent road level to the building
- estimated river or sea flood level

The guidance requires that the development should be designed to exclude flood water where possible and to speed recovery in case water gets in. The design should be appropriately flood-resistant and resilient by:

- Using flood resistant materials that have low permeability to at least 600mm above the estimated flood level
- Making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level
- Using flood resilient materials (for example lime plaster) to at least 600mm above the estimated flood level
- By raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level
- Making it easy for water to drain away after flooding such as installing a sump and a pump
- Making sure there is access to all spaces to enable drying and cleaning
- Ensuring that soil pipes are protected from back-flow such as by using non-return valves.

Access and escape

The nearest open space is Kings college playing fields approximately 13 m from the property, should any residents need to evacuate from the house and wait at the playing fields for assistance.

Flood Levels

As the proposal levels will match the ground floor level of the main house, floodproofing of the proposed development will be incorporated. It is proposed that flood resilient measures

are used in the development as far as practicable to manage the residual risk, reduce the damage and clean up time following a flood.

Flood Resilient Measures

The following flood resilient measures will be adopted, wherever practicable, for the erection of the proposed extension to minimise the damage and to enable quick recovery and clean up after the flooding event:

Foundations - Concrete blocks used in foundations will be sealed with an impermeable material or encased in order to prevent water movement from the ground to the walls.

Floor - Preference will be given to ground supported floors. The concrete slabs will be provided at least 150mm thickness for non-reinforced constructions. If hollow slabs are used, the joints and all elements will be effectively sealed.

Hardcore and binding - bed will be provided at least 100mm thick of well compacted inert materials blinded with fine inert material to provide a smooth base in order to reduce the risk of settlement and cracking.

Damp Proof Membrane - The Damp Proof Membrane will be provided in order to minimize the passage of water through ground floor. Impermeable polythene membranes will be of 1200 gauge in order to minimise ripping. Join membrane sections with a minimum overlap of 300mm and mastic tape with a minimum overlap of 50mm will be provided.

Floor Finishes - Suitable floor finishes include ceramic or concrete-based floor tiles, stones and sand/cement screeds. All tiles will be bedded on a cement-based adhesive/bedding compound and water-resistant grout will be used. Suitable materials for skirting boards include ceramic tiles and PVC.

Insulation materials - Floor insulation will be of the closed-cell type in order to minimise the impact of floodwater.

Wall construction - External brickwork, internal face consisting of blocks, internal cement-based render will be effective for flood resilience.

Doors - Sealed external framed doors will be used.

Services - Where practicable, all services will be sealed with expanding form or similar closed cell material. Pipework Close cell insulation will be provided for pipes which run below the predicted flood level.

Drainage services - Non-return valves will be fitted in the drainage system in order to prevent back-flow during the sewer surcharging.

Electrical Services - Electric sockets will be installed above the maximum flood level in order to minimise damage to electrical services and allow speedy re-occupation.

Heating Services - Boiler units and ancillary devices will be installed above the predicted flood levels.

Communication Wiring - Wiring for telephone, TV, internet and other services will be protected by suitable insulation in order to prevent damage by floodwater.

Surface Water Management

The surface runoff from the site will be improved by implementing appropriate Sustainable Drainage Systems (SuDS). The requirements for SuDS will ensure that any redevelopment or new development does not negatively contribute to the surface water flood risk of other properties and instead provides a positive benefit to the level of risk in the area. It will also ensure that appropriate measures are taken to increase the flood resilience of new properties and developments in surface water flood risk areas, such as those identified as being locally important flood risk areas. Based on the general assessment of the potential SuDS measures, it is proposed that a soakaway will be implemented to improve the surface runoff from the site. A soakaway of a minimum storage volume of 3m3 will be implemented at the site to improve the surface runoff. The location of the soakaway can be changed in order to suit the location condition.

Conclusion

The proposal consists of the erection of single storey extension following demolition of existing conservatory, and conversion of existing garage into storage and home office, located at 30 Elmbridge Drive, Ruislip, HA4 7UT. The River Pinn is located approximately 32m away to the South of the site. The Environment Agency's Flood Maps show that the site lies within Flood Zone 3 (i.e. has a high chance of flooding). The overall risk of surface water flooding to the site is high. The flood risk from other sources including underground water and sewer is low, but with a risk of flooding from the reservoirs in the area. To provide a level of protection against flooding, the floor level of the proposed extension will be set no lower than the existing level of the property. Floodproofing of the proposed development will be incorporated where appropriate. One of the key requirements of the Flood Risk Assessment process is to demonstrate that proposals will not increase flood risk elsewhere. Surface water runoff from the site will therefore be appropriately managed to comply with the requirement of the NPPF as outlined in this report. A soak away will be implemented to improve the surface runoff from the site. The development will not give rise to backwater effects or divert water towards other properties. The National Planning Policy Framework sets out planning policy to avoid inappropriate development in areas at risk of flooding by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.