

# FLOOD RISK ASSESSMENT

## SITE: GARAGES OFF GREEN WALK, RUISLIP MANOR, HILLINGDON HA4 8NL

### INTRODUCTION

The following Flood Risk Assessment is provided in relation to a planning application made to the London Borough of Hillingdon Council for development that proposed the demolition of the existing garages and erection of two semi-detached dwellinghouses, including landscaping and parking.

The site comprises of an area of approximately 714.7 sqm (0.07 hectares) and is currently occupied by domestic garaging. The majority of the site is laid out as hard standing, but also incorporates a small area of existing garden land.



Figure 1: Site Location (provided by Hester Architects)

### ASSESSMENT

The purpose of the assessment is to identify the likely flood risk to the proposed development.

#### National Planning Policy Framework (NPPF)

Section 14 of the NPPF (2019) outlines the requirements for determining if a Flood Risk Assessment is required to be undertaken for new developments. A site-specific FRA should be provided for all sites which are located in Flood Zone 2 and 3.

An FRA should be provided for sites located in Flood Zone 1 where:

- The development site area > 1ha;
- The site has been identified by the Environment Agency as having critical drainage problems;
- The site has been identified in a strategic flood risk assessment as being at increased flood risk in future; or

- land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

## Flood Risk

The site is located approximately 60km inland from the nearest sea and as such, the site is not affected by tidal flooding, and approximately 1km South of the River Pinn.

The Environment Agency Flood Map for Planning also shows the overall site to be located within Flood Zone 1 and therefore is at a very low risk of flooding from rivers as shown in figure 2 below:

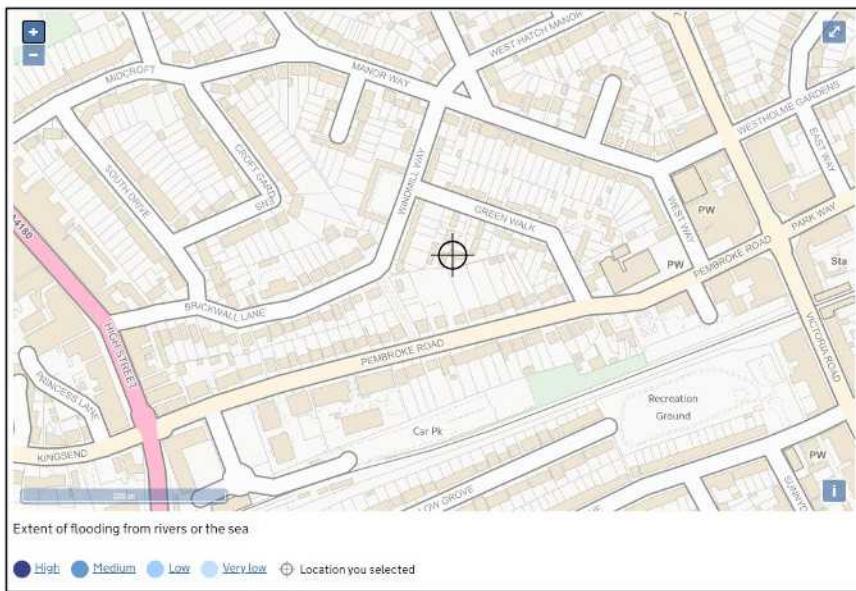


Figure 2: Environment Agency Indicative Flood Map from Rivers and Sea

(Source: [www.gov.uk](http://www.gov.uk))

The site is also at very low risk from surface water flooding as shown in figure 3 below:



Figure 3: Environment Agency Indicative Flood Map from Surface Water

(Source: [www.gov.uk](http://www.gov.uk))

In having regard to the above, the proposed development is in a location that is suitable for development without risk from flooding from rivers or sea.

### Drainage

A search of the Local Planning Authority's Planning Policy Map does however identify the site as falling within a 'critical drainage area'.

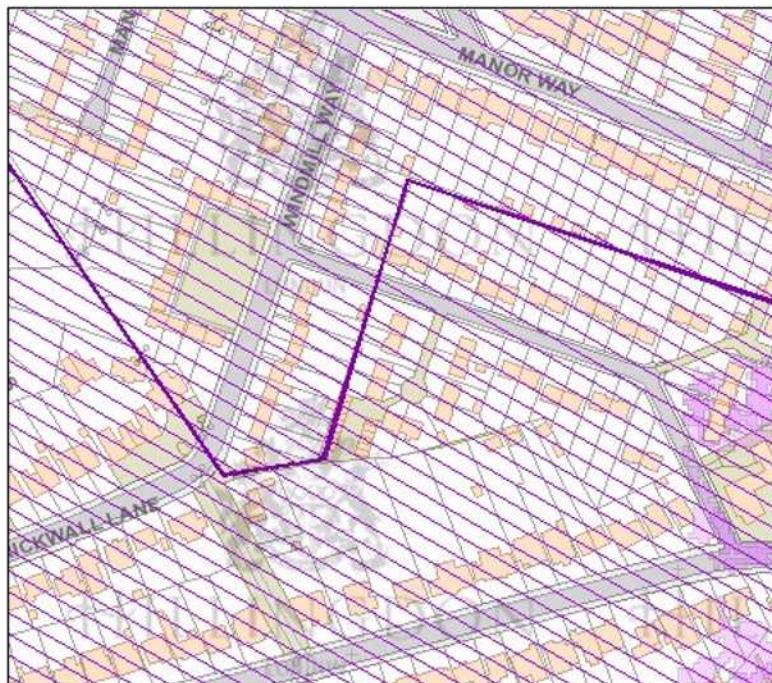


Figure 4: Critical Drainage Area (Source: [www.hillingdon.gov.uk](http://www.hillingdon.gov.uk))

Development Management Plan Policy DME1 10: Water Management, Efficiency, and Quality, states that:

*“...in Critical Drainage Areas or an area identified at risk from surface water flooding must be designed to reduce surface water run-off rates to no higher than the pre-development greenfield run-off rate in a 1:100 year storm scenario, plus an appropriate allowance for climate change for the worst storm duration.”*

In this case, the existing overall site covers an area of approximately 714.7sqm. The total impermeable area of the existing site comprising of approximately 453.8sqm which equates to 63.5% of the site. Under the proposed development this will reduce to approximately 318.0sqm or 44.5% of the site (assumes drive/parking areas will not be permeable) and therefore will mark an improvement in permeable surface across the site, allowing more natural drainage than at present.

The proposed development will also seek to utilise sustainable drainage systems to minimise the negative impacts of surface water runoff from developed areas. SuDS provide a flexible approach to drainage, with a wide range of components from soakaways to large-scale basins or ponds. The individual techniques should be used in a management train that reinforces and, where possible, follows the natural pattern of drainage. These include:

- Prevention – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (examples include minimising paved areas and the use of sweeping to remove surface dust from car parks),

- Source control – control of runoff at or very near its source (such as the use of rainwater harvesting, pervious pavements, green roofs, or soakaways for individual houses).
- Site control – management of water from several sub-catchments (including routeing water from roofs and car parks to one large soakaway or infiltration basin for the whole site).
- Regional control – management of runoff from several sites, typically in a detention pond or wetland.

The priority for the discharge of surface water run-off should be:

- Infiltration;
- Discharge to surface waters;
- Discharge to a surface water sewer, highway drain or another drainage system;
- Discharge to a combined sewer.

In this case, the proposed reduction in impermeable areas will have a significant impact on prevention of excess surface water. The proposed development will also make use of permeable surfaces for pavements and incorporate a soakaway which will control runoff near to the source. These will be designed to accommodate an above ground flooding for the 1:100 year storm scenario, plus an appropriate allowance for climate change for the worst storm duration.

## **CONCLUSION**

The development site is located within Flood Zone 1 and therefore is at very low risk of flooding from rivers or seas. The proposed development will also reduce the overall impermeable area for the site , in comparison with the existing use, and therefore surface runoff rates would be expected to improve as a result of the development.

The proposal will also incorporate SuDS features, in the form of a soakaway and will utilise permeable paving for footpaths. In combination, the proposed surface water drainage system would be expected to prevent flooding for a 1:100 storm event plus allowances for climate change. Full details can be controlled by planning condition.

Based on the information collated as part of this FRA, the proposed development flood risk from all sources has been assessed as low.