

FLOOD RISK ASSESSMENT

LAND TO THE REAR OF 63 DALEHAM DRIVE UXBRIDGE UB8 3HP

DATED: 12 NOVEMBER 2020



GEOGRAPHICAL LOCATION

FLOOD MAPPING FROM THE WEST LONDON STRATEGIC FLOOD RISK ASSESSMENT



SITE

SITE THREATENED BY UP TO 600MM OF URFACE WATER.

DEPTH (Six bands)



**PROPOSED REPLACEMENT OF EXISTING BUILDING AT 63 DALEHAM DRIVE
UXBRIDGE UB8 3HP . TO BE REPLACED BY A NEW RESIDENCE.**

FLOOD RISK ASSESSMENT / DESK TOP STUDY

This report is compiled to accompany a planning application. Detailed plans are provided within the application.

It adheres to the criteria within the National Planning Policy Framework (NPPF) and its guidance notes as well as the Environment Agency (EA) Advice notes to local authorities.

The proposal is looked upon as "more vulnerable" due to its residency classification . As it is an application for change of use the sequential test is not required. It is also replacement of an existing building which is being demolished due to its poor state of repair. This is another reason for the sequential not being required.

It was originally used as an outhouse.

The site is to be cleared and the existing slab will be retained and enlarged for the house to be built It is of moderate proportions and has living accommodation on the ground floor with three bedrooms upstairs. There is an internal staircase between the two levels.

This report does not showing any fluvial flood mapping because it is agreed with the planners that the site is not threatened by fluvial flood. Hence it is in Flood Zone 1 . The LA is concerned however that the site lies in a critical drainage area as shown on the mapping above. This is referred to as a CDA where drainage could malfunction because it could surcharge due to it being under capacity or where surface water/groundwater may come to the surface at times of exceptional storms.

The legend from the West of London SFRA shows there could be surface water flooding on the site to a height of up to 300mm but the EA mapping shows it could be as high as 900mm.

The sustainable lifetime of the proposed property would be 100 years and experts on climate change expect heavy storms already experienced will be repeated. However these forecasts are very much conjecture and can only be judged by future events.

Anecdotal evidence is to the effect that such heights have never ben witnessed in this area. There has been "pooling" for short periods but no more than that. Credence is given to this information as the ground in a wide area around is very permeable as

shown in BGS mapping below



Superficial deposits

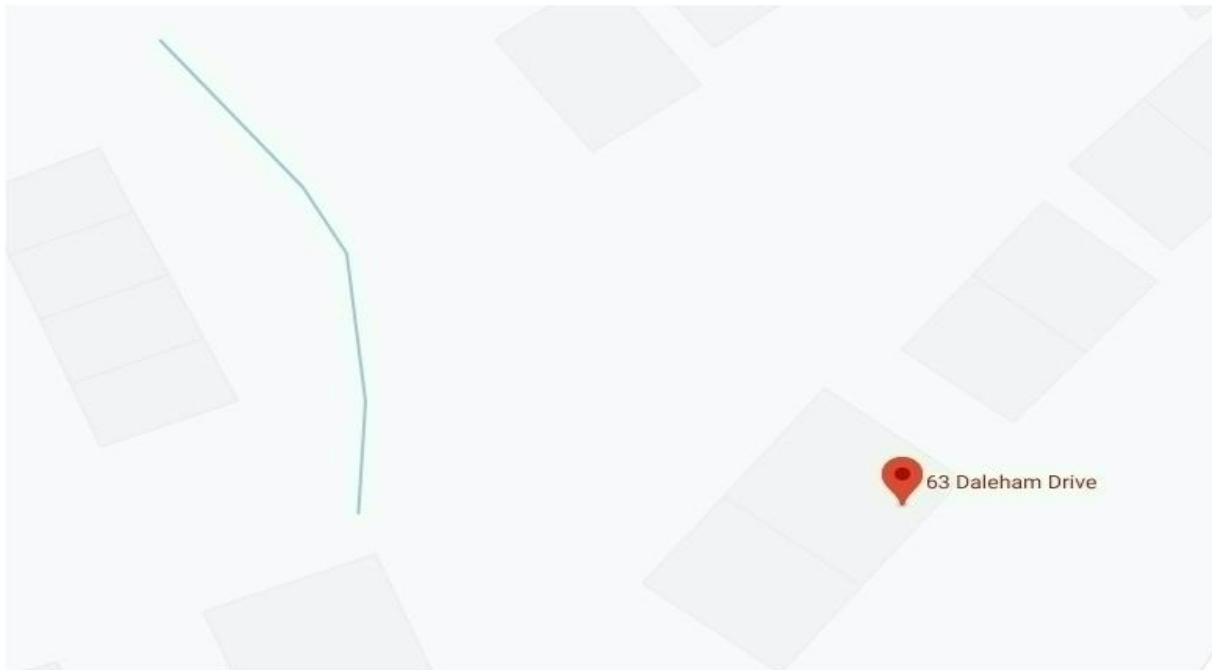
-  ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
-  LANGLEY SILT MEMBER - CLAY AND SILT
-  SHEPPERTON GRAVEL MEMBER - SAND AND GRAVEL
-  LYNCH HILL GRAVEL MEMBER - SAND AND GRAVEL
-  BOYN HILL GRAVEL MEMBER - SAND AND GRAVEL
-  BLACK PARK GRAVEL MEMBER - SAND AND GRAVEL

The site is well within an area composed of Boyn Hill gravel member – sand and gravel. The bedrock is composed of London clay. Boreholes carried out in the vicinity showed groundwater levels at rest varied between 4.5 metres and 8.2 metres below the surface

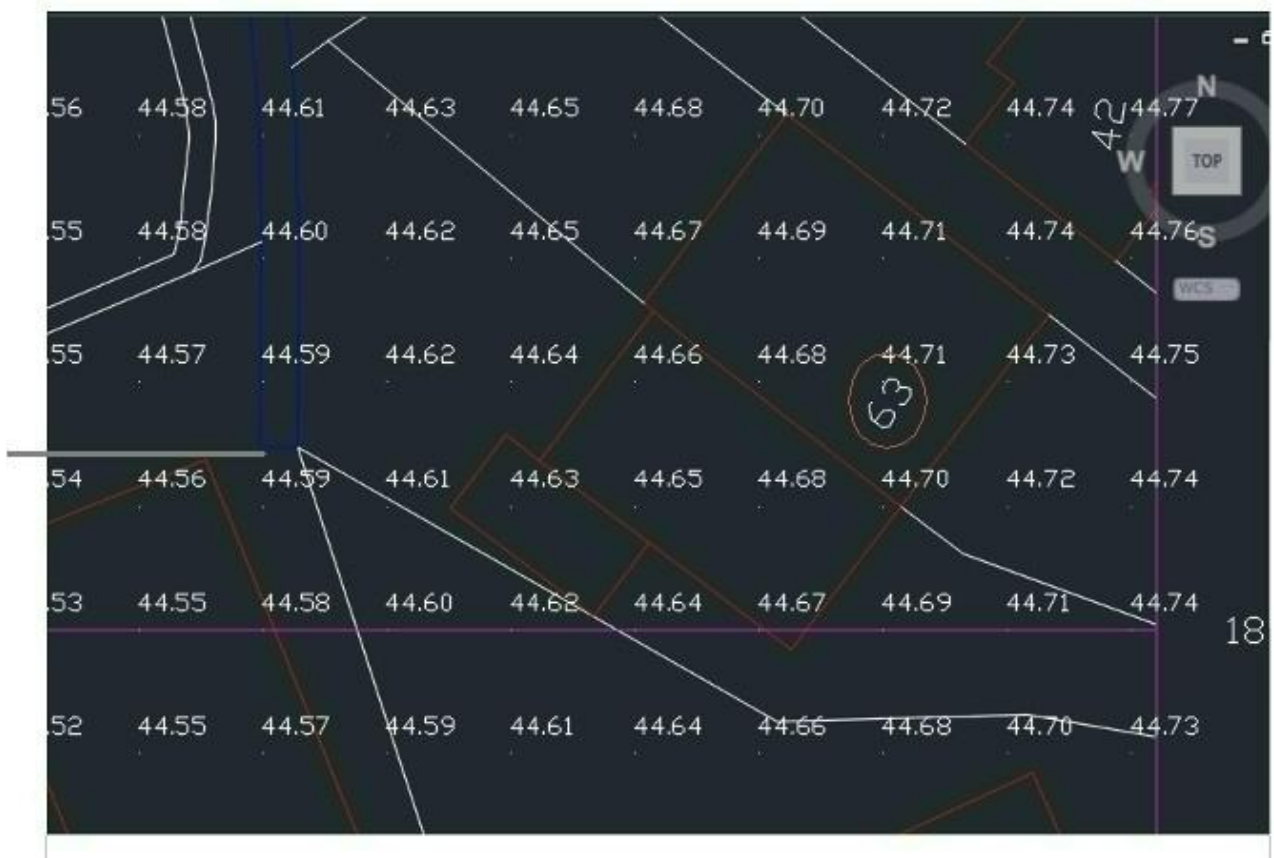
However Hillingdon has published a “screening” exercise to keep a history of CDA hot spots and Daleham Drive does not figure in this.

A more intensive examination shows that according to the SFRA mapping the land close to the site is bordered by a higher level of flooding.

Rather than groundwater this is because a ditch runs to the rear of 63 Daleham Drive and would appear to disappear into a culvert which could block under extreme storm conditions. (see mapping below)



The water would tend to hold in this area but not stay there for long.



The site levels range from 44.68AOD down to 44.59AOD meaning the mean level would be 44.63AOD.

As the waters rise the ditch would overtop at 44.59AOD and the waters would then travel down hill to the East.

This would mean that in exceptional circumstances the land at its mean level of 44.63AOD would be above the flood level before its flood path went to the East.



A continuation OS sheet below shows the flood path would carry on to 44.17AOD



Travelling this distance would mean the velocity of the flooding would gradually lose its velocity and the flooding would have only a minor threat would have a “spread” to the North and South from the site under assessment.

This is confirmed by contour mapping on the page below below.

Contour Map Creator

0.314

[improvement ideas](#)

ub8 3hp



Finished Floor level

It is recommended that this should be 300mm above the mean ground level.

On this basis no flood resilience measures would be required.

Evacuation in the dry would be available.

Emergency vehicles would be able to get to and from the site at times of flooding.

Compensation is not required, The site is in Fluvial flood Zone 1.

Any walkways or driveways should be installed using permeable permeable material.

Surface Water/Groundwater

Should either of these rise above the surface they would drain into the ditch by way of gravitational flow . The site is higher to the North than the South next to the ditch.

Sustainable drainage

BGS hydrology mapping (below) shows that the superficial strata is conducive to soakaways being installed but it should be a condition of the planning permission that ground tests be carried out to check for permeability and also the height of groundwater.

Another option is use a French drain to transmit offsite flows to the ditch. Pipework to the French drain should be oversized but interceptors and a flow control mechanism should be fitted to the pipe work. Interceptors would clean the water on its way to the ditch and flow control – such as hydro brakes – would prevent any “surge” entering the ditch.

A further option is to install over capacity water butts to hold run off. This could then be used as “grey” water for use in the house for washing and toilet flushing. It would also be useful for external vehicle washing , cleansing of outside furniture and for irrigation of the garden during dry periods of weather.

The site does not lie over a source protection zone.

It is not at threat from reservoirs.

It lies in an area with a susceptibility for ground water. This is above 75%.

There is no threat from artificial sources.

Offsite Implications

There will be none with the recommendations as made in this report

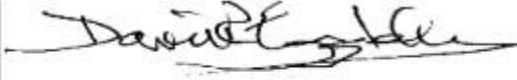
CONCLUSION

A close examination of the site's topography and also the “lay of the land” in this area shows that the site slopes to the area of the ditch so no appreciable depth of water would stay on the ground . Flooding from the ditch would take a pathway to the East as shown in this report.

This is why it is so important for a detailed analysis to be carried especially in cases

such as this. The EA accedes to the fact that it's mapping is for general use only , not to be relied upon and inappropriate for site specific assessment. The same could be said about the SFRA mapping . It is doubtful that hydraulic modelling was used for this water course and if it was modelling is subject to assumption and conjecture. Topography plays a big part in this assessment because it shows Ordnance Survey levels in detail rather than relying on mapping which in many cases can be misleading due to the methodology used. Sometimes “interpolation” is involved which can be a very coarse assessment.

Signed



David Eggleton
Managing Director.