

FLOOD RISK ASSESSMENT

Proposed Minor Development:

45 PINN WAY RUISLIP MIDDLESEX HA4 7QG

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DATE: 21 JULY 2019

Dated: 21 July 2019



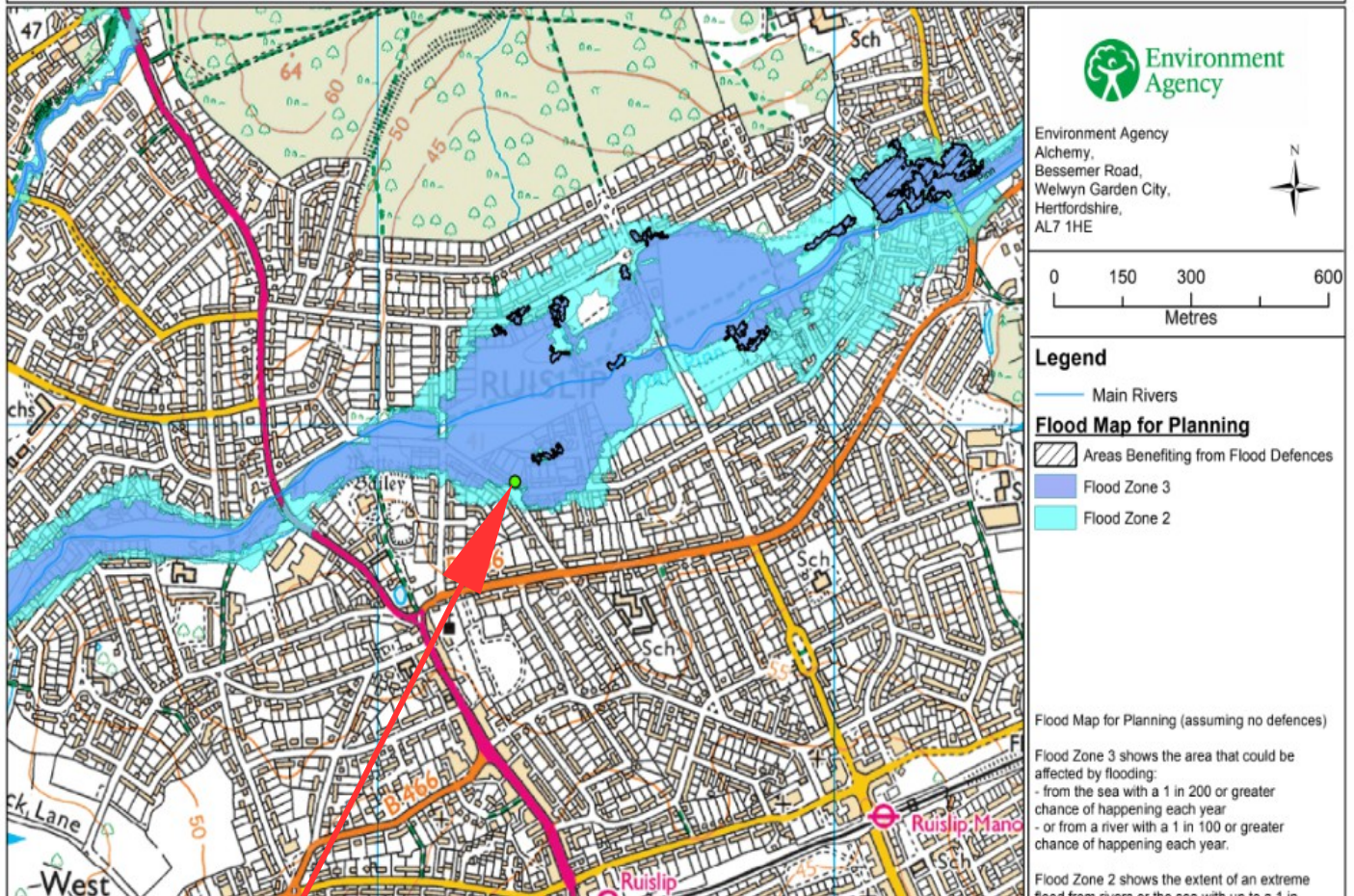
GEOGRAPHICAL LOCATION.



SITE MAP SHOWING EXTENSION IN BLUE

SITE ON THE EDGE OF FLOOD ZONE 3 CONTIGUOUS WITH FLOOD ONE 2

Flood Map for Planning centred on: 45 Pinn Way, Ruislip, HA4 7QG - 02/07/2019 - HNL132392NR



SITE

**PROPOSED RESIDENTIAL EXTENSION AT 45 PINN WAY RUISLIP MIDDLESEX HA4
7QG**

FLOOD RISK ASSESSMENT / DESK TOP STUDY.

This study report is compiled to accompany a planning application. Detailed plans are provided within the application . The report is compiled under criteria within the National Planning Policy Framework (NPPG)2019 and the Environment Agency (EA) Advisory Notes to Local Authorities.

As can be seen from the mapping above the latest EA mapping shows the site lies in Flood Zone 3 contiguous with flood zone 2.

This is considered a minor development within NPPG. Under NPPG it states that minor developments are unlikely to cause significant flood risk unless they :

Have an adverse effect on a watercourse , flood plain or its flood defences

Would Impede access to flood defence and management facilities,

OR

Where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows . None of the above applies in this case. The NPPG definition of minor development is as follows :

The requirements for an FRA that is submitted to the Local Planning Authority for minor development within Flood Zone 1/3, in relation to flood risk, is defined as follows,

1. minor non residential extensions:: industrial/commercial/leisure etc. extensions with a footprint less than 250 m2.
2. Alterations:: development that does not increase the size of buildings e.g. alterations to the external appearance. householder development: For example; sheds, garages, games rooms etc. within the curtilage of the existing dwelling, in addition to physical extensions in the existing dwelling itself.

The proposed extension is very much below the 250sq.metre ceiling.

According to the EA's advices the minimum requirements for an FRA that is submitted to the Local Planning Authority for Residential/Industrial/Commercial extensions less than 250m2 within Flood Zone 3 should confirm that:

Floor levels within the proposed development will be set no lower than existing level
AND

Flood proofing of the proposed development has been considered by the applicant and will be

incorporated where appropriate.

OR

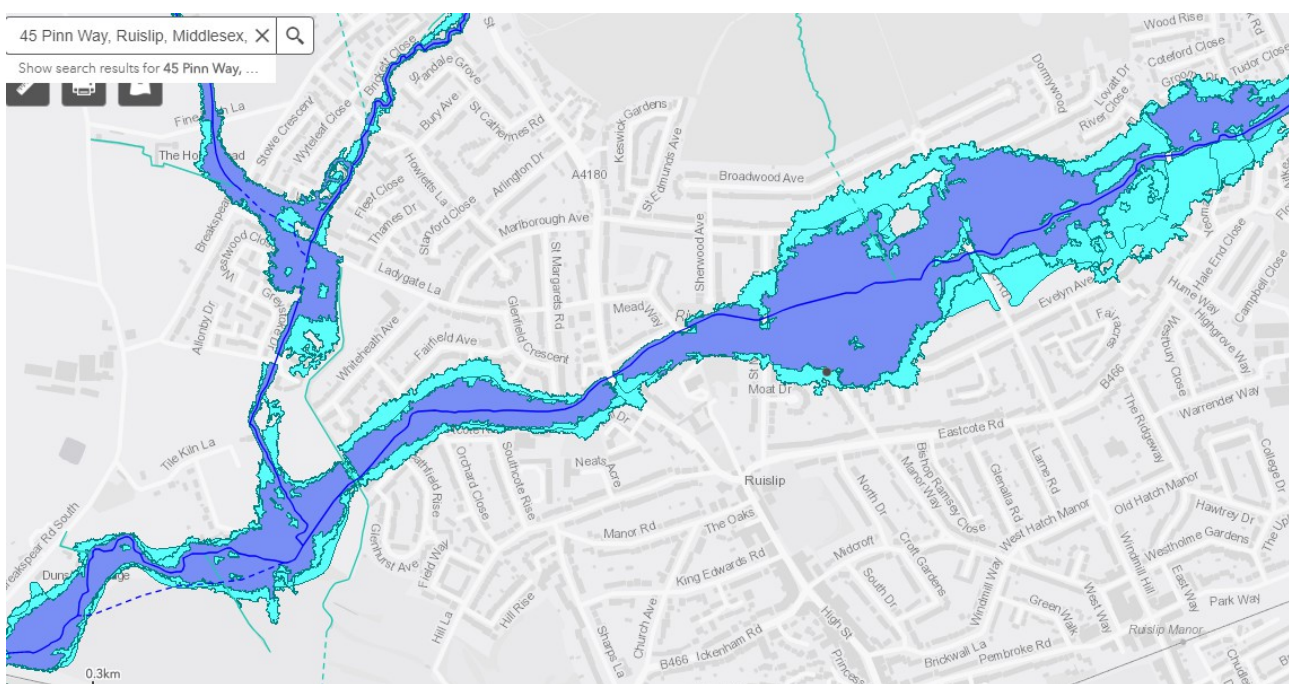
Floor levels within the extension will be set 300mm above the known or modelled 1%(1 in 100 chance each year) river flood level or 0.5% (1 in 200 chance each year) tidal and coastal flood level. This must be demonstrated by a plan to OS Datum/GPS showing finished floor levels relative to the known or modelled flood level. It is considered that paragraphs 1 and 2 are appropriate for this development .

The Accuracy Of Flood Mapping

The EA mapping from the national flood map is looked upon as of a general nature only . It is accepted that it is not to be relied upon and is unacceptable for individual site assessment.

The mapping for the West London SFRA (provided by the EA) is more accurate because consultants were commissioned to use more advanced technology. This mapping shows that the site is on the very edge of the flood plane during the 1 in 100 return period and throughout the range of levels as required under the EA guidance notes February 2016.return period (see mapping below)

It is contiguous with flood zone 2.



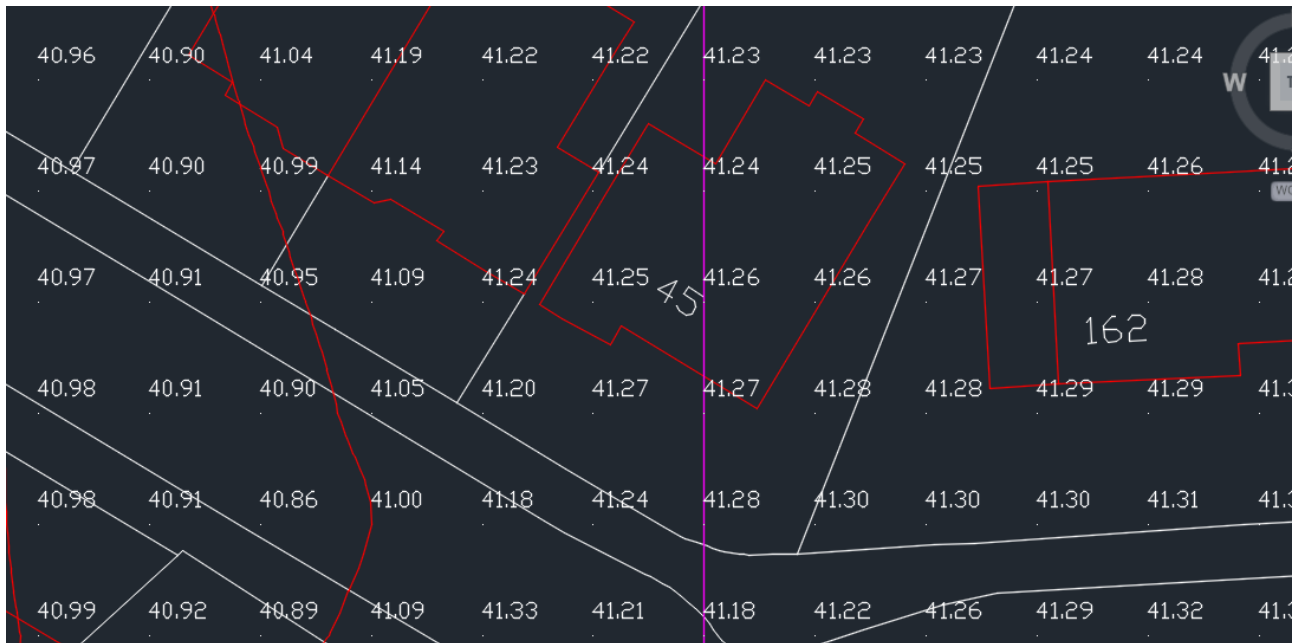
The historic flood map also shows it is on the extreme edge of past flooding

It is just within a flood alert and flood warning area.

But it is not within a flood storage area which means it is within an area of Flood Zone 3 not Flood 3b the functional flood plain.

Site levels.

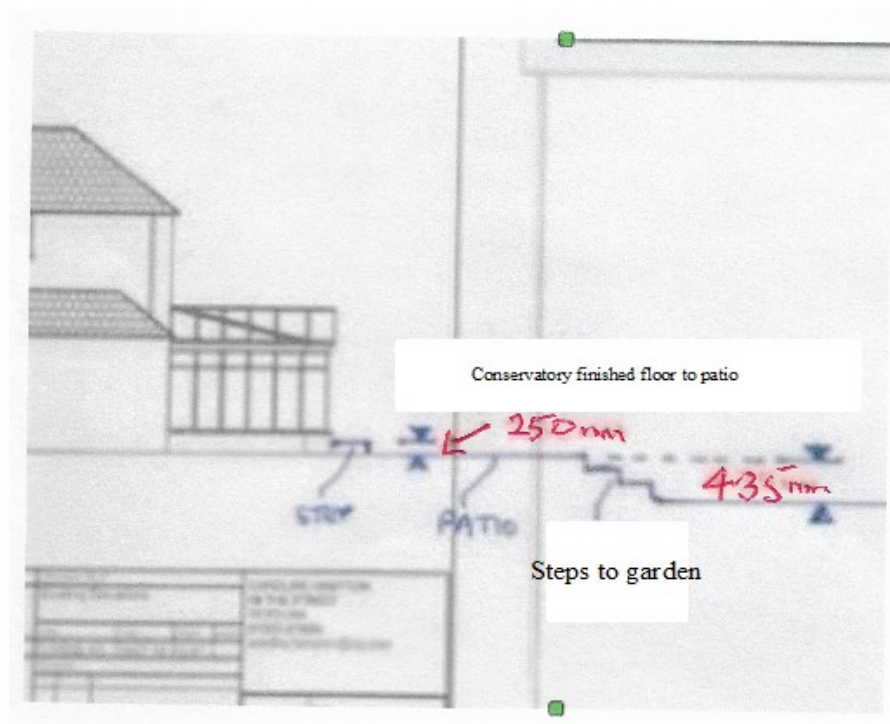
These are shown below :



The site levels to the south of the site are 41.20AOD and 41.24AOD. To the North the site levels are at 41.23AOD so it is very much at an even dwell.

A cross section has been drawn showing the height at which the proposed extension is above the garden area to the rear of the property.

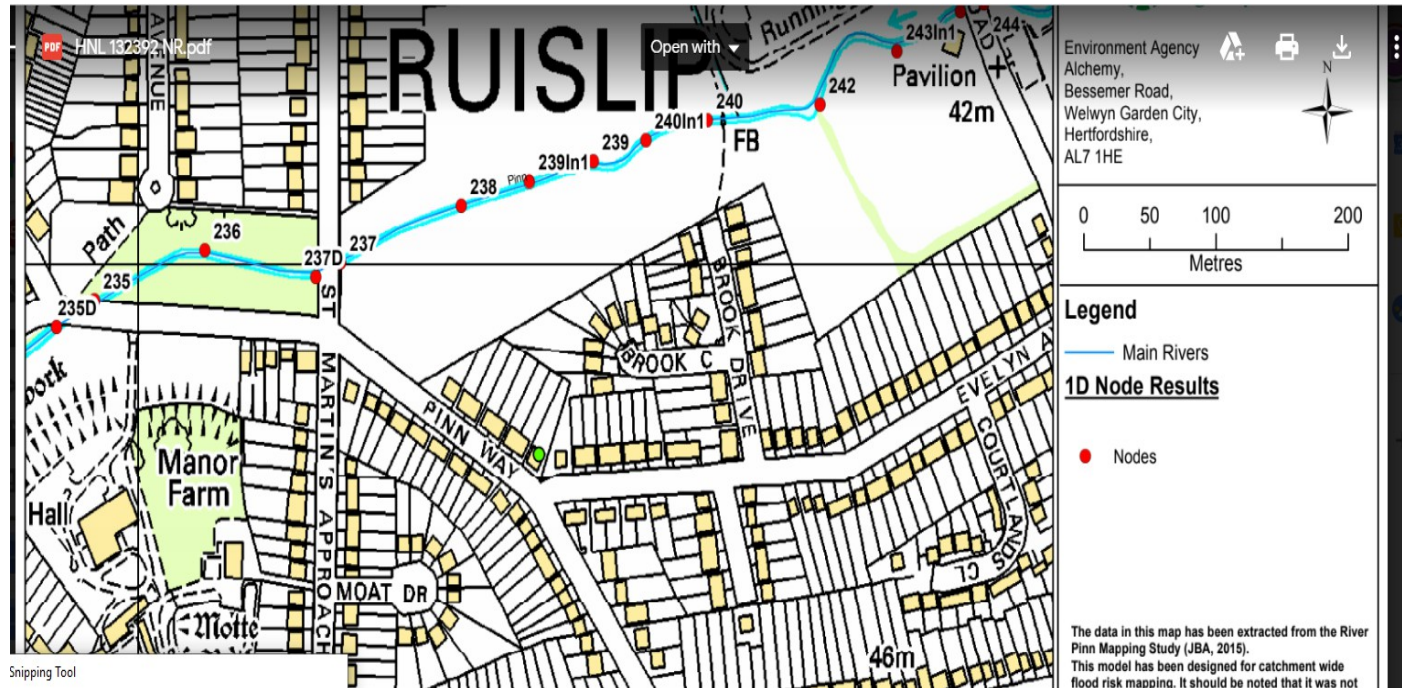
ELEVATION FROM GARDEN TO PROPOSED EXTENSIONS
EQUALS 250MM PLUS 435MM = 685MM



As already stated from the site levels survey the ground level at the rear of the property is shown to be 41.230AOD . So if 685mm is added to this the extension would at a height of 41.915AOD.

Environment Agency Flood Level information .

The Environment Agency has introduced node points to ascertain flood level information. These are shown below.



MODELLED FLOOD LEVEL

			Return Period													
Node Label	Easting	Northing	2 yr	5 yr	10 yr	20 yr	30 yr	50 yr	75 yr	100 yr	100yr + 20%	100yr + 25%	100yr + 35%	100yr + 70%	250 yr	1000yr
244	509640	188151	41.108	41.254	41.324	41.379	41.413	41.489	41.570	41.615	41.683	41.696	41.728	41.814	41.722	41.894
243	509622	188147	41.098	41.238	41.306	41.357	41.389	41.459	41.530	41.567	41.620	41.629	41.652	41.708	41.647	41.763
243In1	509574	188124	41.011	41.118	41.168	41.206	41.230	41.273	41.309	41.339	41.392	41.406	41.434	41.527	41.428	41.638
242	509516	188092	40.933	41.023	41.068	41.101	41.122	41.157	41.182	41.205	41.264	41.280	41.319	41.452	41.306	41.592
240	509430	188083	40.837	40.952	41.006	41.045	41.068	41.104	41.131	41.157	41.224	41.243	41.287	41.435	41.271	41.583
240In1	509384	188072	40.745	40.885	40.950	40.997	41.023	41.068	41.100	41.130	41.206	41.226	41.273	41.428	41.256	41.578
239	509344	188059	40.655	40.811	40.884	40.937	40.968	41.022	41.061	41.097	41.185	41.207	41.259	41.421	41.241	41.574
239In1	509296	188047	40.597	40.766	40.845	40.905	40.941	41.004	41.048	41.087	41.178	41.201	41.254	41.417	41.235	41.571
238	509244	188033	40.549	40.745	40.836	40.902	40.941	41.006	41.051	41.090	41.182	41.205	41.257	41.420	41.239	41.572
237	509153	188000	40.474	40.680	40.768	40.834	40.871	40.938	40.985	41.027	41.129	41.154	41.211	41.389	41.190	41.550
237D	509134	187992	40.471	40.677	40.764	40.829	40.866	40.932	40.978	41.021	41.122	41.147	41.205	41.382	41.184	41.542
236	509050	188007	40.413	40.614	40.717	40.793	40.836	40.910	40.960	41.005	41.111	41.137	41.195	41.374	41.174	41.534
235	508966	187978	40.386	40.583	40.690	40.768	40.812	40.888	40.939	40.985	41.093	41.120	41.180	41.363	41.158	41.525
235D	508938	187963	40.382	40.577	40.683	40.760	40.804	40.879	40.930	40.976	41.082	41.108	41.168	41.348	41.146	41.508

The nearest node level is 238. This shows that the 100 year plus 35% would be 41.227 AOD . This would be the same as calculations within the EA guidelines of 2016.

None of these are in excess of the ground floor level of the extension which as stated would be 41.915 AOD

Therefore the proposed extension would not be effected during its sustainable lifetime of 100 years.

And being at the end of the flood plain flows would be low if even that.

Safe Access.

Levels at the road access are at 41.33 AOD and 41.21AOD . Comparing this to the flood level plus 35% the road would be well within the DEFRA guidelines for safe passage for pedestrians and vehicles alike. Also there would be no effect on emergency vehicles going to and leaving the site under assessment.

This is confirmed by the EA mapping which shows Pinn Way in Flood Zone 2 leading very quickly to Flood Zone 1 to the north of the site.

The site falls just outside the mapping for sewer incidents amount to 21-40 incidents in what is presumed to be a ten year period. This is not considered significant to this study.

Sustainable Drainage

Within the consultants report for flood management it states that there is no objection to a soak away being used for such a small minor development

During the investigation period of this report the local authority voiced concern about the possibility of strong velocities in this area .during flooding. It is not considered this is a possibility because the site lies at the very edge of flood zone 3 and contiguous with flood zone 2 . This would mean that it falls in an area where any strength of flooding would have abated.

The mapping shows an arbitrary flood zone where Flood Zone 3 and 2 meet as if levels “step down” in an immediate area. This is , of course a false picture because there is a natural run off between the two levels which would mean the site would be at the end of the flood with levels being low and very little velocity more akin to standing water and pooling on site.

Anecdotal evidence states that the site has never been influenced by fluvial flooding..

Surface Water



Very low threat under high risk classification.

CDAs

Hillingdon mapping shows the site outside a critical drainage area.

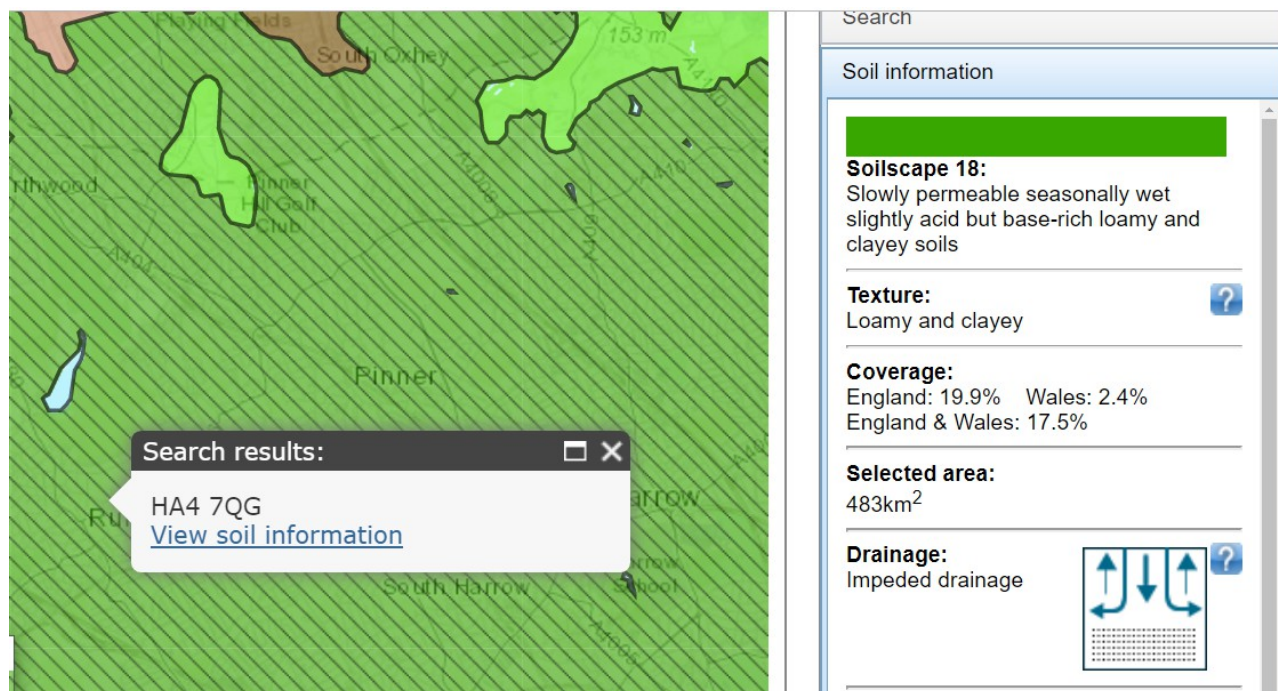
The mapping also shows the site is outside the 1 in 100 year plus climate change for pluvial consideration. Map 5.1 in the surface water management study.

Flood Reliance measures

These are not required

Groundwater

The soil scape mapping from the Cranfield Institute gives a readout for ground conditions all over the country . Please see mapping below.



This shows that there is impeded drainage in the soil which is made up of loam and clay . It also shows that there is no threat from groundwater rising to the ground. It is at a moderate level.

Sustainable Drainage.

There is no reason to believe that the very limited run off from the extension would have any effect on the groundwater level. In which case soakaways could be used for run off. If this is not considered appropriate then over capacity water butts can be used together with a french drain to the garden in case of the water butts overtopping at time of exceptional storm .

Water from the butts could be used as grey water for within the property for washing and toilets as well as being used outside the property for vehicle cleaning and for watering the garden as well as cleaning outside tables and chairs.

CONCLUSION

The proposed extension is well above any flood level as shown in the EA information which forms an important part of this report. Because of that no flood resilience measures are required and there is also no reason for an evacuation procedure for the reasons as stated. There would be no offsite implications. If it is proposed to use soakaways a flow control device should be fitted to slow down flow entry into the receptor.

Signed

David Eggleton
Managing Director.