

Oliver, Lewis

From: Alastair Thornton <alastair@simply-planning.com>
Sent: 21 December 2021 12:32
To: Oliver, Lewis
Subject: Lidl, Havant - Surface Water Flooding (Havant BC Reference APP/20/01221)
Attachments: LIDLHAVANT - Risk of Surface Water Flooding Study.pdf
Importance: High

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Dear Lewis,

I hope that you are well.

Further to our earlier conversations on the matter of Surface Water flooding, please find attached a note from our Drainage Engineers, along with covering email below.

As you will note this conclusively shows that there is no concern from a Surface Water drainage perspective and, in the professional opinion of the engineer, the site should not be subject to the flooding sequential test.

I'd be grateful if this can be added to the planning file.

Many Thanks,
Alastair,

Alastair Thornton
Director



*****Due to the ongoing coronavirus pandemic, all members of the Simply Planning team will be working from home until further notice. Therefore, we**

+44 (0) 121 272 1761
+44 (0) 7785 628 281
alastair@simply-planning.com
www.simply-planning.com

London office
Lower Ground Floor
24 Charlotte Street
London, W1T 2ND

Birmingham office
Suite 204, Cheltenham House
Temple Street
Birmingham, B2 5BG

Cardiff office
214 Creative Quarter
8a Morgan Arcade
Cardiff, CF10 1AF

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From: Sean Foley
Sent: 16 December 2021 18:15
To: 'Alastair Thornton' <alastair@simply-planning.com>
Cc: DOUGLAS SYMINGTON <Douglas.Symington@lidl.co.uk>; Paul Altham <paltham@mayerbrown.co.uk>; Alex

Brennan <abrennan@mayerbrown.co.uk>

Subject: FW: Lidl, Havant - Surface Water Flooding (Havant BC Reference APP/20/01221)

Hi Alastair,

As a reminder we tried to obtain confirmation from Hampshire County Council, the Lead local Flood Authority (LLFA), that there is a high possibility the surface water flooding shown on the underpass within the application boundary is likely to be a modelling anomaly on the national "Risk of Surface Water Flooding Map" (RoSWF).

They refused to comment on the quality of the RoSWF map, but they advised it is the applicant's responsibly to challenge (if necessary) the existing modelling by undertaking additional modelling or assessment.

With this in mind, we have produced the attached report that's an assessment of the potential surface water flood risk using the most up to date LiDAR data and Digital Terrain Model (DTM).

Key outcome of assessment

The LiDAR data and DTM used to inform the currently available RoSWF maps are from 2013. There is, however, far more accurate LiDAR available and this has been used within the attached assessment.

The current RoFSW map is considered to be inaccurate at the underpass because of the erroneous depth and velocity outputs. It is expected that with accurate depth and velocity modelling the 1in100year flood extent would not be present at the southwest corner of the site.

Therefore, when the most accurate and recent elevation data is used the site should not be classified as having at a "medium" risk of surface water flooding within the application boundary.

Conclusion

It is our professional judgement that if the EA updated their RoSWF maps using the latest LiDAR data there would be no surface water flooding within the application boundary.

Therefore, it is our considered opinion that the planning application for the new store is in line with the flood risk policy in the latest NPPF (issued July 2021), where all sources of flood risk need to be considered when determining if a site needs to be sequentially tested.

Having completed this assessment the risk of surface water flooding occurring at the underpass is considered to be low, if not very low. All other sources of flood risk within the application boundary have already been assessed and discounted in the flood risk assessment that accompanied the planning application.

Therefore, the site should not be subject the sequential test.

I hope the above and attached are clear and we'd be happy to discuss.

Kind Regards,

Sean Foley
Principal Engineer
Mayer Brown Ltd
07774 221 044

From: Sean Foley

Sent: 07 October 2021 17:05

To: 'FWM Statutory SWM Consultee mailbox' <SWM.Consultee@hants.gov.uk>

Subject: RE: Lidl, Havant - Surface Water Flooding (Havant BC Reference APP/20/01221)

Hi Sarah,

Many thanks for your response and we will discuss with our Client.

Kind Regards,

Sean Foley
07774 221 044

From: FWM Statutory SWM Consultee mailbox <SWM.Consultee@hants.gov.uk>
Sent: 07 October 2021 15:50
To: Sean Foley <sfoley@mayerbrown.co.uk>
Subject: RE: Lidl, Havant - Surface Water Flooding (Havant BC Reference APP/20/01221)

Dear Sean

Thank you for your email and we have tried to comment below on the different points raised.

In terms of the accuracy of the Environment Agency (EA) Flood Maps for surface water:

While we understand that the EA modelling is a national scale modelling based on lidar and other data which could be improved in some areas, considering that this modelling was undertaken by the EA we are not going to comment on any particular inaccuracy for any particular site.

As the Lead Local Authority, we consider the EA modelling to follow our surface water/local flood risk submission check process with the major planning applications, where it is the applicant's responsibly to challenge (if necessary) the existing modelling by undertaking additional modelling or assessment in order to demonstrate that proposals will not increase surface water flood risk on or off site. As a part of this process, we recommend that the EA is consulted on any additional modelling or assessment which shows different results.

In terms of the previous and latest NPPF:

We are not responsible to comment on the Sequential Test and modelling use/accept to follow that process.

As your are aware we have already raised no objection to this planning application and the EA updated Flood Maps have been taken into account on our formal response.

As a Statutory Consultee we provide advice to the planning authorities to identify whether designs put forward are in accordance with best practise. We are not the determining body and therefore, the planning authority will need to make the decision whether or not to accept the proposals put forward taking into account the NPPF and the EA modelling accuracy.

I hope this helps.

Regards
Sarah

From: Sean Foley <sfoley@mayerbrown.co.uk>
Sent: 15 September 2021 16:58
To: FWM Statutory SWM Consultee mailbox <SWM.Consultee@hants.gov.uk>
Cc: DOUGLAS SYMINGTON <Douglas.Symington@lidl.co.uk>; Paul Altham <paltham@mayerbrown.co.uk>; James Mitchell <James.Mitchell@lidl.co.uk>; Alastair Thornton <alastair@simply-planning.com>; Tom Cassidy <tcassidy@mayerbrown.co.uk>
Subject: Lidl, Havant - Surface Water Flooding (Havant BC Reference APP/20/01221)
Importance: High

FAO: Santiago Manzanero

Dear Santiago,

Mayer Brown Ltd (MBL) are the Consulting Engineers who compiled the flood risk assessment (FRA) that accompanied the planning application for their proposed new store located at Purbrook Way, under Havant. Havant Borough Council Planning reference APP/20/01221

Hampshire CC, as the LLFA, have already commented on the application in February and March this year and they have no objection. Please see attached.

As a reminder the only source of flood risk is a medium risk of surface water flooding identified at an underpass on the attached EA produced Risk of Flooding from Surface Water (RoSWF) map. See attached. It is not possible for this medium risk surface water flooding at the underpass to impact the Development because it occurs approximately 3.0 metres beneath the lowest point in the proposed car park and store. Also are some pictures of the underpass

Purpose of this E-mail

Although HCC have not objected to the development we are contacting today because the flood risk revisions in the new NPPF has a negative impact on our submission. Discussed in more detail below.

Hopefully the outcome of sending this E-mail will be a response from yourselves that you agree that the RoSWF map in this particular instance is not an accurate representation of the actual flood risk on the ground.

Apologies in advance for the length of this E-mail but I believe it is all relevant.

Previous NPPF & Sequential Test

When we compiled the FRA (and the application was submitted and validated in December 2020) it was under the old NPPF when the sequential test only needed to be applied when tidal/fluvial high risk flood zones were located inside the application boundary.

All other sources of flooding are generally addressed by reviewing flood information available (surface flooding, infrastructure failure, groundwater flooding) against the site specific topographic survey and applying engineering judgement to analyse, discuss and usually overcome the problem through good engineering practice.

This Lidl application is a typical example where it is obvious the surface flood risk poses no flood risk to the store whatsoever because it is located in an underpass.

Latest NPPF & Sequential Test

The recently revised NPPF, issued on 20th July 2021, has made a significant change. The opening line of revised paragraph 162 is as follows: *"The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source"*.

The impact of the underlined three words is enormous (*from any source*) because the RoSWF map shows medium risk of flooding so in theory Lidl would need to undertake a sequential test to demonstrate they have searched for an alternative site at a lower risk of flooding. However, it is clear in this instance that by applying engineering judgement the store and car park are not at risk of surface water flooding at all.

This is going to impact all of us (Applicants, LLFA's, The EA, Planning officers, Planning Consultants, Flood Risk Consultants) either through increased time, cost and workload so believe it is important to take the potentially easy wins as/when they arise.

We genuinely believe this could be an easy win and would be grateful if you could review and hopefully agree with our analysis of the surface water flood map and that a simple modelling adjustment would remove the surface water flood risk entirely from the RoSWF map.

RoSWF Maps Review – General

The problem with RoSWF maps is that they show surface water flooding in a huge number of areas across the country, even where there might be a slight depression in a field or perhaps a culvert or underpass has been modelled using high level and/or assumed data. This ubiquitous surface water flooding rarely posed a problem up to now because we would analyse and usually discount the severity of the problem at site level by reviewing the topographic survey, ordnance maps and undertakes a site walkover.

The EA have produced a very useful document (attached) explaining how the RoSWF maps were created, including listing their strength and limitations. The essentially created a national digital terrain model using lidar data (@ 2m grid) and then the LLFA's were asked to review the maps:

- using local recorded flood data and local knowledge to identify areas that are known to flood, and to highlight unexpected patterns of flooding
- identifying how confident they are in the national mapping
- comparing locally produced information with the nationally produced mapping to determine which mapping is more representative for each area

With this in mind we believe there is scope for the LLFA to further influence and refine the RoSWF maps

Digital Terrain Model – Accuracy & Modelling of Structures

We know it is not practical to undertake detailed surveys across the whole country in order to create a very accurate digital terrain model (DTM). The EA report explains how structures are represented/input to the digital terrain model. It explains, in section 4.3.5, that where the resolution of the DTM was downgraded to 2m from the higher resolution LIDAR data, this has removed some of the detail of local surface features. This means that some features, such as smaller hydraulic structures or flow paths may not be represented in the model.

Some flow paths under bridges and through embankments are not captured within the DTM because the top of the feature is represented rather than the opening through it. These features include roads and railway embankments, bridges, subways, tunnels. This can cause runoff to back up and flood a larger area "upstream" of the feature, and areas "downstream" of the obstruction may be unrealistically shown as being free from flood risk. If these locations were not edited, the resulting flood extent would show a different pattern of flooding than would be expected in reality.

With this in mind the DTM was **manually edited** to represent flow paths through "flyover" features that present unrealistic obstructions to known flow routes. The model run was completed and the results from the model run were used to identify where water is retained. Edits were then made to the local DTM values and a further model run is undertaken until satisfactory results are achieved. Approximately **91,000 edits** were made to the DTM as part of the project, which is an increase of over 50,000 from previous generations of national surface water modelling.

RoSWF Maps @ Havant – Discussion

The overall ground levels in the immediate vicinity are quite complicated because the access roundabout into B&Q (and the new Lidl store) is on the crest of a flyover of the M3 immediately to the west. Therefore, this entire section of Purbrook Way has been raised with embankments that form barriers across the natural/original topography of the land. This explains the need for the underpass because it provides a potential relief route for overland surface water flow, mammals and people if necessary.

With the above in mind we are very confident the underpass is one of the 91,000 edits to the DTM model. It is not cost effective to survey every single structure so we expect an educated guess was applied by the Modeller when the DTM was edited. If a slightly different assumed level (maybe 300mm higher) was input by the Modeller there would be no simulated flooding and we would not be having this discussion.

This harmless simulated flooding was not a problem before the new NPPF arrived this July because we (Engineers, Planners, LLFA, etc) had an opportunity to apply our judgement based on the more detailed survey information.

Conclusion and Request

In light of the new NPPF we hope there is scope for the LLFA to be open to discussions on how accurate the RoSWF maps are in specific locations. In most areas we believe the RoSWF map is correct but in this instance we believe the medium flood risk identified at the underpass is erroneous because the Modeller applied one of the many manual edits to the DTM based upon an assumed invert level.

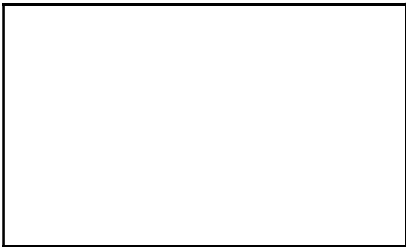
We do not expect the RoSWF map to be revised because it would be a costly, slow and unnecessary exercise. We have completed a more detailed analysis of the situation using a site specific topographic survey and a site walkover and believe it is reasonable to conclude it is not possible for flooding to occur in this underpass.

It would, however, be a large benefit to us if you could respond to this E-mail confirming that you agree in principle that, based upon above, if the actual surveyed information was modelled there is a good chance there would be no simulated surface water flooding shown on the RoSWF map at the underpass.

I hope this is acceptable and look forward to your response.

Kind Regards,

Sean Foley
Principal Engineer
Mayer Brown Ltd
07774 221 044



Sean Foley

Principal Engineer, Mayer Brown Limited

T: 01483 750 508 DD: 01483 742 693 M: 07774 221 044

E: sfoley@mayerbrown.co.uk W: www.mayerbrown.co.uk

A: Lion House, Oriental Road, Woking, Surrey, GU22 8AR



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