



14, Beecham Court,
Pemberton Business Park,
Wigan,
WN3 6PR
UK

Telephone: +44 (0)1942 493255
www.rsk.co.uk

Our ref: P680020-FRA L02
Your ref: 21/02286/F

24th December 2021

Cherwell District Council
Planning & Development Services
Bodicote House White Post Road
Bodicote
Banbury
OX15 4AA

Re: Construction of a coffee unit with drive-thru facility and indoor seating with associated access, car parking, landscaping and servicing parking. Land North West of Launton Road roundabout adjoining Skimmingdish Lane, Caversfield

I refer to the recent Environment Agency consultation response (EA Ref: WA/2021/129266/02-L01 dated 9th December 2021) to the above application. This response maintains the objection to the application on the grounds that the latest proposals for the flood compensation provided by the scheme is not in line with the previous consultation and agreements with the Environment Agency.

The flood compensation previously being offered was 36.5m³, while the initially agreed (subject to further detail) was 30m³. This additional 6.5m³ is negligible given the extent of the floodplain in the area, but the proposals have been reviewed to remove the objection from the Environment Agency.

Since this project commenced in 2019 substantial work has been carried out on the scheme to reduce the flood compensation as far as practically feasible and has been in line with the previous discussions with the EA. This includes the scheme being designed to the 1 in 100 year +35% modelled flood level of 69.750m AOD. Since this initial agreement with the Environment Agency in 2019, the climate change allowances have been revised in line with updated scientific advice.

In July 2021 the revised allowances were published and should be used for all planning applications. According to the guidance published by the Environment Agency, the appropriate and central allowance to assess off-site impacts and calculate floodplain storage compensation depends on land uses in affected areas. Given the lifetime of the development is expected to be less than 25 years (the Tenant has committed to a 15 year lease), the 2050 allowance has been used. For the Cherwell and Ray catchment, the central allowance for the 2050 epoch is a 4% increase in river flows (See extract below).

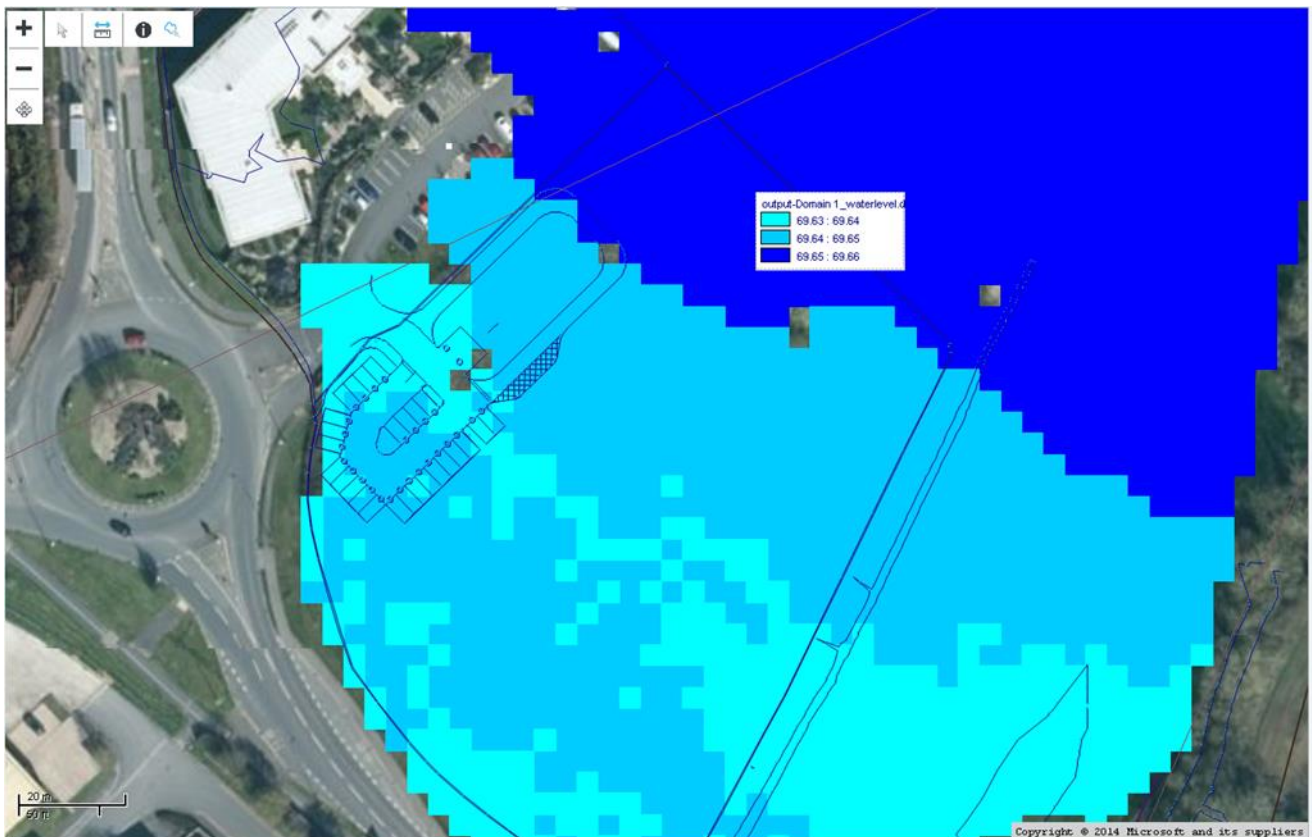


RSK Land & Development Engineering Ltd

Registered office
Spring Lodge • 172 Chester Road • Helsby • Cheshire • WA6 0AR • UK
Registered in England No. 4723837
www.rsk.co.uk



The previously agreed hydraulic model (as provided by the Environment Agency) has been re-run using this revised climate change allowance. The results of the model re-run, using the latest climate change guidance, include top water as displayed on the image below. It can be seen from this image that the water levels are generally level across the site from a peak of 69.66m AOD in the very north of the site, to 69.63m AOD in the south west across the proposed car parking area.





Using the latest guidance, these revised levels have been used to re-assess the flood compensation requirement. As a result of the reassessment the required flood compensation has been reduced to 17.58m³, a 41.4% a reduction on the previously agreed 30m³.

Total Volume Difference by level			
Levels			Volume Difference (m ³)
Top (m)	Bottom (m)	Height (m)	
69.65	69.55	0.1	17.58
69.55	69.45	0.1	-17.38
69.45	69.35	0.1	-52.31
69.35	69.25	0.1	-33.10
69.25	69.15	0.1	-2.37

*A positive number indicates a loss of floodplain volume, a negative figure indicates a gain in floodplain volume

The principle for the flood compensation is, as previously agreed with the Environment Agency. The details are provided in the enclosed drawings (Drawing Ref: 220029/100P6). However, due to the revised flood level using the latest climate change guidance, the attenuation can now be provided in a single tank with two chambers, with inlets set at 69.625m and 69.525m AOD. As the previous pre-app agreement with the Environment Agency was for tank storage at 30m³ split into 3 independent compartments with inlets set at 25mm and 100mm below flood level, the volume of flood compensation required at 17.58m³ using the latest guidance must be deemed to be acceptable.

Whilst the required level of flood compensation required to ensure there is no net loss of floodplain has been reduced to 17.58m³, it is proposed to offer the full 30m³ of tank storage on the site, previously agreed with the Environment Agency which provides a betterment of 12.42m³ in floodplain volume in the area and therefore have the potential to reduce flood risk.

It can be seen from the drawings (Drawing Refs: 220029/100P6 / FV100P2 / FV101P4 / FV102P4 / FV103P4 / FV104P1 / FV105P1 / FV106P1 / FV107P1) and the associated tabulated data (where the flood compensation provided offers additional floodplain volume over the pre-development situation.

Difference by level			
Levels			Volume Difference (m ³)
Top (m)	Bottom (m)	Height (m)	
69.65	69.55	0.1	21.43
69.55	69.45	0.1	-9.59
69.45	69.35	0.1	-39.95
69.35	69.25	0.1	-26.39
69.25	69.15	0.1	-2.06



Difference by level			
Levels			Volume Difference (m ³)
Top (m)	Bottom (m)	Height (m)	
69.65	69.55	0.1	-3.85
69.55	69.45	0.1	-7.79
69.45	69.35	0.1	-12.36
69.35	69.25	0.1	-6.71
69.25	69.15	0.1	-0.31

Overall, there is a net increase of 99.163m³ in floodplain volume over the range of flood depths with the ground works proposed and the use of the storage tanks.

In addition to the reinvestigation into the flood compensation tanks, the option of lifting the footprint of the building via the use of stilts was reconsidered. With the ramped access to the store and the levels required for the drive thru lane (which could not be raised on stilts) this option remains impractical due to the fact we have endeavoured to maintain existing ground levels within the wider finished levels for the new development site including the drive thru lane. Putting the building on stilts would raise the wider levels and be impracticable where the drive thru lane has to be raised to meet the height of the building.

The current letter from the Environment Agency also noted that: *'the excavation required to provide the proposed floodplain compensation area is detailed only on cross sections. Without a plan it is hard to establish whether the information shown on the sections is practical and achievable. It will be necessary for the applicant to submit a plan showing the floodplain compensation storage area and detail the ground levels required for the area, consistent with the sections.'* The plan was provided with the cross sections (plan referenced 220029/FV100P2) as listed in the letter.

However, to further explain and in light of current guidance on flood levels, the cross sections and plans have been re-worked and part of this process has involved making the detail clearer, to hopefully better explain our proposals. Three sections have been taken as an example (4a, 5 and 13). These sections have been chosen to show how the levels change through the removal of high points on the wider site (4a), through the building (5) and through a typical section of the car park (13). These sections clearly show the existing (based on the latest topographical survey levels) ground levels, the post development levels and the modelled flood levels.

On the 22 sections, the volume of flood storage lost is coloured in RED and the volume of flood storage gained is in GREEN. Note also, the horizontal scale has been compressed by a factor of 5 times in order to allow the sections to be shown on a single drawing.

In addition to the cross sections, a larger scale general arrangement plan FV107P1 has been provided which shows the existing levels (BLACK) and proposed levels (GREEN) to clearly provide information on where, and by how much levels have been affected.

In terms of how the works will be carried out, this will be detailed by the contractor appointed to do the works and should not form the basis of an objection on flood risk grounds from the Environment Agency.



It is proposed to maintain the previously approved FFL's for the building of 69.750m AOD which now provides a level of freeboard above the modelled 1 in 100 year plus the latest guidance on climate change flood level.

Based on the above and the enclosed cross sections, it can be clearly seen that, when using the Environment Agency's latest climate change allowances, the level of flood compensation required to be provided is reduced to 17.58m³ to below that previously agreed with the Environment Agency during extensive pre-app discussions. Notwithstanding this fact, the flood compensation to be offered by the scheme will include a tank with a capacity of 30m³ (this is in excess of that required), thereby offering a reduction / betterment of 12.42m³ in offsite flood risk on 1:100 plus climate change. There is also a considerable flood storage betterment of 99.163m³ in the 1:100 flood risk. This should therefore be supported by the Environment Agency as seen as an opportunity to offer wider flood risk benefits.

We trust this information is sufficient for your immediate needs, however please do not hesitate to contact the undersigned if you require any further information.

Yours sincerely

RSK LDE LIMITED

A handwritten signature in black ink, appearing to read 'Colin Whittingham', is written over a faint, larger version of the same signature.

Colin Whittingham

Associate Director BSc (Hons) MSc MCIWEM C.WEM PIEMA