Ribble Valley Borough Council
Development Control
Council Offices Church Walk
Clitheroe
Lancashire
BB7 2RA

Our ref: NO/2023/115101/01-L02
Your ref: 3/2022/1158

Date: 23 March 2023

Dear Sir/Madam

ERECTION OF 17 DWELLINGS AND 57 APARTMENTS WITH ASSOCIATED ACCESS, ROADS, CAR PARKING, LANDSCAPING AND INFRASTRUCTURE, INCLUDING A PUBLIC CAR PARK TO SERVE WHALLEY TOWN CENTRE
LAND SOUTH OF ACCRINGTON ROAD, WHALLEY

Thank you for consulting us on the above application which we received 22 February 2023.

We have been involved in various formal consultations regarding the development of this site. Most recently, in May 2022 for the application for a two-phase approach to the site.

Since February 2021, we have provided additional and ongoing comment on matters relating to the development of the land and undertaken the review of draft reports through a charged advice agreement with Oakmere Homes. In July 2021 we were asked to review a model summary Technical Note supplied by JBA Consulting, reference 2021s0600, rev.0001, June 2021. In our response we provided technical feedback on the use of updated climate change allowances to be considered, the understanding of flood risk in the area, proposed habitable finished floor levels and access road levels. We also provided particularly focused comment on the proposals for Compensatory Flood Storage.

This application is a full planning application for what for the erection of 17 dwellings and 57 apartments with associated access, roads, car parking, landscaping, and infrastructure, including a public car park to serve Whalley town centre. We note that the Flood Risk Assessment (FRA) submitted with the application refers to the proposed development as Phase 1, with a potential Phase 2 development later. Our comments on this application relate only to the development proposed at this time.

We have reviewed the Flood Risk Assessment (FRA) prepared for M&P Gadsden Consulting Engineers and Oakmere Homes by JBA Consulting (referenced; OAKMERE-JBAU-XX-XX-RP-0002-S3-P06-AccringtonRdFRA Final Report and dated December 2022), the associated appendices and other relevant documents and drawings in so far as they relate to our remit, and we are satisfied that the work

undertaken as part of the FRA exercise has sufficiently refined and improved the resolution of the existing hydraulic model used to inform the Flood Map for Planning (FMfP). In principle we are satisfied that the FRA has helped inform the design considerations and the development as currently proposed would be safe without exacerbating flood risk elsewhere if the proposed flood risk mitigation measures are implemented.

We agree with the design flood level and the extreme flood level used to determine the development platform levels and finished habitable floor levels in the proposed development as defined at section 9.6 “Design considerations” in the FRA and also the Finished Levels drawing 21315 -GAD- 01- ZZ -DR-1406 -Rev P02.

Environment Agency position

There are no in principal objections to the development as proposed. We therefore have no objection to the scheme proposed subject to the inclusion of the following planning conditions.

Condition
The development hereby permitted must not be commenced until such time as a scheme to provide appropriate compensatory storage on site has been submitted to, and approved in writing by, the local planning authority.
The scheme and plans submitted shall show the final engineering solution for the compensatory storage measures, including (but not limited to) the detailed design and hydraulic modelling to demonstrate how the scheme will function to ensure flood waters can enter the storage and be discharged freely after a flood. It must be demonstrated through the hydraulic modelling that there will be no loss in storage capacity for the lifetime of the development.
The scheme shall be fully implemented prior to any development on site and subsequently maintained, in accordance with the scheme’s timing/phasing arrangements, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

Reasons
- To ensure that there are no detrimental impacts to flood storage or flood flow routes
- To reduce the risk of flooding to the proposed development, future users and elsewhere

Our detailed advice regarding the design of the compensatory storage scheme can be found at the end of this letter

Condition
The development hereby permitted must not be commenced until such time as a detailed management plan for the compensatory flood storage scheme has been submitted to and approved in writing by the local planning authority. The maintenance plan must demonstrate how the compensatory storage scheme, including proposed drainage channel shall be maintained for the lifetime of the proposed development. The plan as a minimum shall include:
- Details of the organisation responsible for the ongoing maintenance for the lifetime of the development
- Details of the funding arrangements in place for the inspection and maintenance. It must be demonstrated how the ongoing maintenance for the lifetime of the development will be funded.

- As built drawings and a maintenance and operation manual. This must include physical access arrangements for maintenance and establishment of legal rights of access.
- The maintenance schedule of work - itemising the tasks to be undertaken and the frequency at which they should be performed so that an acceptable long-term performance standard is secured. The schedule should be a living document as it may change, where inspections advise changes to the scheme maintenance requirements

Reasons

- To ensure that there are no detrimental impacts to flood storage or flood flow routes
- To reduce the risk of flooding to the proposed development, future users and elsewhere

The applicant has been provided with the 2020 Mott MacDonald hydraulic model for the River Calder around Whalley, this model has been adapted for the FRA by JBA Consulting. The adapted model has been used to establish an updated baseline and altered to reflect the proposed development including raised areas and the proposed compensatory flood storage area.
Therefore, flood risk modelling undertaken by a third party has been used in support of this application. The Environment Agency has applied a risk-based approach to the assessment of this model. In this instance and at this stage, a basic review has been carried out. The Environment Agency has not undertaken a full assessment of the fitness for purpose of the modelling and can accept no liability for any errors or inadequacies in the model. It is essential that we review the model in order that we are in position to accept the suitability of the baseline and development model should a challenge to the Flood Map for Planning be considered.

Compensatory Flood Storage - detailed comments

We accept the principle of using the southern part of the site to provide compensatory storage, however we have some concerns in relation to the current design and functionality of the compensatory flood storage area in the designs presented. This may be because the details are not currently at detailed design stage. Our detailed comments can be found below:

<u>Proposed layout of compensatory storage and attenuation basin</u>

The design of the compensatory flood storage area and attenuation basin as shown on Phase 1 Drainage Layout drawing 21315 GAD 01 ZZ DR 1001 Rev. P04, while likely to be volumetrically accurate, is unnaturally angular in shape, with almost entirely straight edges. While this aspect is an aesthetic observation, the very slender neck of land between the attenuation basin and the compensatory storage area is a concern from an engineering, maintenance, and regulatory perspective.
There are no indicative dimensions provided on the drawing, but in comparison with the scale of other known details (standard car parking space width assumed 2.4m), this would appear to be only around 1 meter wide. While engineering construction details are not provided at this stage, such a design would appear to promote an unacceptable risk of breach between the attenuation basin and compensatory flood storage area and vice versa. In addition, while access requirements between the attenuation basin and compensatory storage area are not known, such a design would certainly preclude the use of ride on plant for maintenance and repair.
We would recommend you refer to The SuDS Manual (C753) and Chapters 22 and 23:

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Detention basins and Ponds and Wetlands. In addition to guidance and design best practice, the regulatory statues to which the design must adhere are also made clear.

Functional performance of the compensatory storage area

We are aware that other factors have precluded the implementation of direct and more natural 'level for level' compensatory storage as we originally requested. The alternative proposal for the volumetric storage has been accepted in principle, subject to the satisfactory confirmation and agreement of the design, functional performance, and maintenance for the lifetime of the development.

We do have some concerns about the above functional performance of the design presented, these concerns relate to two points we raised in our response dated 30 July 2021. We have acknowledged that the volumetric storage proposed cannot act as naturally as level for level compensation. However, we still require confidence that the compensatory storage proposal will not fill prematurely with surface water, will freely fill from the river as intended during a flood and subsequently drain after the flood event in a prescribed period of time given a free discharge.

Premature filling from surface water

In our letter referenced in Appendix A for the FRA, we said we will also want to see that surface water will not pond in the area which could reduce the capacity to store fluvial flood water. Information has not been provided at present that is sufficient to confirm this or otherwise. A potential scenario could be envisaged whereby even with a latitudinal cross fall in the basin, high river levels could gravity lock the non-return flapped riverside outfalls, at the same time as heavy rainfall and surface water runoff could be filling the storage area. If the 'design flood' then occurred and river levels spilled into the storage area, there is potential that some of the volumetric storage would be lost, resulting in increased flood risk. As recommended in our letter, a technical note should be produced specifically for the proposed compensatory flood storage area to address this and other questions arising.

Filling from the river

The FRA describes that to offset the loss of floodplain storage associated with this raising of ground levels, compensatory storage has been provided to prevent increases in flood risk elsewhere in the area. The FRA refers to the compensatory storage area on numerous occasions and plans also show the compensatory flood storage area. However, other than *Figure 5-2: Flow mechanisms – post-development – 1%AEP plus 36% for climate change*, which notionally shows the flood envelope and directional flow arrows spilling into the proposed compensatory storage area, there is no narrative, graphic representation or engineering details at this stage to demonstrate how and when the area would begin to come into flood storage function or any information on how long this would typically take. Nor are there any details regarding what engineering (lowering and reinforcing) of the 'elevated bank levels,' would need to be retained to prevent additional overtopping and facilitate this function. In the absence of further detail design at present, the answers to these questions remain unknown.

Drain down

The design currently proposes 5 No. 225mm diameter outfalls with non-return (flap) valves arranged in series on the internal southern face of the compensatory storage area and out falling on the riverbank of the river Calder. The Environment Agency has considerable experience in drain down structures on flood defences and flood storage areas, and we consider the solution currently proposed less than optimal in design terms.

The pipe diameters are small and there are 5 in total. These pipes will be prone to blockage and obstruction for materials arising or been washed or carried into the flood

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storage area. There is also the potential for willful obstruction. The flaps on the riverward side could also be prone to obstruction or damage, and because of their small size and low mass, together with their orientation parallel with the river, are likely to flutter, catch debris and not close properly when required to. The number of pipes, their component parts and their position would make maintenance and operation checks burdensome and has potential to detrimentally affect the functionality of the proposed compensatory storage area.
Our recommendation would be that the designers consider a single, larger, grilled and flapped inlet and outfall with an auxiliary drain down penstock. The outfall should be angled downstream rather than parallel to the flow of the river.
Again, in relation to all aspects we have commented on above, we would refer you to the relevant Ciria guidance- Design of flood storage reservoirs (B14).

Environmental permit - advice to applicant
The River Calder is a designated statutory main river.
The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert
- in the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission For further guidance please visit https://www.gov.uk/guidance/flood-risk-activities-environmental-permits or contact our National Customer Contact Centre on 03708 506 506. The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

Yours faithfully

Carole Woosey
Planning Advisor

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