

Havant Borough Council
Development Control
Civic Offices
Civic Centre Road
Havant
Hampshire
PO9 2AX

Our ref: HA/2023/124969/02-L01

Your ref: APP/23/00193

Date: 15 August 2023

Dear Planning Team,

FURTHER INFORMATION PART DEMOLITION AND PART REDEVELOPMENT OF EXISTING BUILDINGS AND CHANGE OF USE FROM CLASS A2, B1(C) AND B8 TO C3 USE WITH THE CONSTRUCTION OF 7 TOWN HOUSE DWELLINGS AND 10 APARTMENTS LAND REAR OF AND 15A-15C SOUTH STREET, HAVANT

Thank you for consulting the Environment Agency on the above application.

We have reviewed the information as submitted and set out our position below.

Environment Agency position

The submitted information is not sufficient to address our concerns and therefore we maintain our objection until an updated adequate FRA is submitted.

We have provided the following comments to offer clarity to applicants response to our objection.

PUSH SFRA data used in the FRA

The Partnership for Urban South Hampshire Strategic Flood Risk Assessment (PUSH SFRA) was delivered in December 2007 before the Havant Flood Mapping Study was carried out in March 2008 by Atkins for the EA. The PUSH SFRA was reviewed in 2012 and again in 2016, but the flood maps within the PUSH SFRA for the Havant streams were not updated using results from the 2008 flood model.

The Portsmouth City Council's website states: *The Environment Agency's modelling of flood risk has also been improved. This has led to some updates to the present-day maps of flood risk which the PUSH SFRA doesn't take into account. These changes may supersede some areas displayed in the hazard mapping and climate change*

Environment Agency
Guildbourne House Chatsworth Road, Worthing, West Sussex, BN11 1LD.
Customer services line: 03708 506 506
www.gov.uk/environment-agency

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mapping layers. (Found [here](#))

We have looked at the final flood extent map from the Havant Flood Mapping Study Final Report, and it shows the change from the Existing Flood Zone 3 (pre 2008) and the Havant Flood Mapping Study (2008) Flood Zone 3. It is evident that the pre model flood extents match the PUSH SFRA mapping, and the study matches the EA current flood mapping extents. Therefore, the EA flood mapping should be used to assess the site-specific flood risk for this application.

Section 5.0 of the SFRA also states: *“The SFRA has assessed flood risk across the sub-region at a strategic level. The outputs and findings of the SFRA are therefore sufficiently detailed to inform strategic decision making in relation to spatial planning.*

The outputs and findings of the SFRA should therefore not preclude the need for detailed site-specific flood risk assessments to accompany planning applications for proposed developments”.

Climate change

The PUSH SFRA (2007, review 2016) and the EA flood model (2008) were both delivered before the latest climate change (CC) allowances were made available at the end of 2018 (UKCP18). This means that any future design flood levels shown are now out of date and not appropriate.

The EA does not automatically update models following the release of new climate change allowances, only when it is deemed necessary. Therefore, it is for the applicant to carry out site-specific flood risk assessments that include the latest CC allowances using one of the appropriate methods as seen below.

Climate Change (CC) allowances and modelling

The submitted FRA does not take the latest CC allowances into account which is required to determine a Finished Floor Level (FFL) that is safe for the lifetime of the development (100 years for residential).

Below is some advice on CC allowances and how they can be assessed:

- *Fluvial Climate Change allowances have been updated on a catchment basis, these are undertaken using the Peak River Flow and should be applied as a percentage of the flow for the given year. To apply climate change allowances in order to generate depths, the modelling (or new modelling undertaken) normally has to be re-run with alterations to the hydrology to account for the percentage of climate change required – based on the catchment and the vulnerability of the development.*
- *Climate change allowances should always look at a range of allowances suitable for the development and should ideally be applied to the river flows. Major developments should be undertaking modelling or using our modelling and updating this to reflect latest climate change allowances.*
- *Smaller developments are notoriously harder to update climate change allowances or modelling – this can be unreasonable and disproportionate. The way this should be done, is through a Stage-Discharge curve. This can be quite difficult to understand and requires a relationship between level and flow.*

- *For the smallest developments, the climate change allowances should be applied based on the flood depths and added as percentage on top of this. This is a very rudimentary and precautionary method; it overestimates the levels of flooding but is a basic method for applying climate change allowances when modelling is not a viable option. As a minimum every planning application should be applying this method – although the higher risk developments should more greatly scrutinise the climate change allowances. A risk-based approach essentially.*

Acceptable method

The Product 4 provided to the applicant comes from the 2008 Flood 1D Model showing levels at nodes along the main river but does not provide levels in close proximity to the development site. Due to this fact, and it being a smaller development, we would probably accept a more conservative approach for this development.

Determining the design flood level in this case is only possible by checking the DTM levels at the Flood Zone 3 (1% AEP) extents from our mapping. We have done some estimations and conclude that an average of 8.0m AOD would be acceptable. An acceptable freeboard allowance then needs to be added to this as seen below.

Freeboard

Our internal guidance advises that developers include an additional 600mm freeboard on peak design flood levels to account for the uncertainty associated with the potential impacts of climate change, including more extreme events which go beyond the likely 1% AEP (1 in 100 year) plus climate change level.

The application is a bit confusing stating there is some commercial and residential development. However, drawing “EXISTING_SITE_AND_GROUND_FLOOR_PLAN-1735655” only shows residential development with some properties proposing bedrooms on the ground floor. Therefore, as per the guidance above a finished floor level of 8.6m AOD or above would be acceptable.

Flood Plain Storage Compensation

We appreciate that this is an urbanised flood plain, but the new development could remove flood plain storage capacity from the flood plain and will need to be considered. We suggest a comparison of the pre demolition footprint and proposed footprint is calculated. The flood levels need to take climate change allowances into account for the lifetime of the development. If there is a reduction, then the volume will need to be compensated for that connects to the flood plain within the proposed site if at all feasible. We would accept some rudimentary calculations using available Lidar DTM levels and the flood level as above.

Advice to LPA /Applicant

The following issues are not within our direct remit or expertise, but nevertheless are important considerations for managing flood risk for this development. Prior to deciding this application, we recommend that consideration is given to the issues below. Where necessary, the advice of relevant experts should be sought.

- Adequacy of rescue or evacuation arrangements
- Details and adequacy of an emergency plan

- Details and adequacy of flood proofing and other building level resistance and resilience measures
- Provision of an adequate means of surface water disposal such that flood risk on and off-site isn't increased

We strongly recommend the use of flood resistance and resilience measures. Physical barriers, raised electrical fittings and special construction materials are just some of the ways you can help reduce flood damage.

To find out which measures will be effective for this development, please contact your building control department. If you'd like to find out more about reducing flood damage, visit the Flood Risk and Coastal Change pages of the planning practice guidance. Further guidance on flood resistance and resilience measures can also be found in:

Government guidance on flood resilient construction

<https://www.gov.uk/government/publications/flood-resilient-construction-of-new-buildings>

CIRIA Code of Practice for property flood resilience

https://www.ciria.org/Research/Projects_underway2/Code_of_Practice_and_guidance_for_property_flood_resilience.aspx

British Standard 85500 – Flood resistant and resilient construction

<https://shop.bsigroup.com/ProductDetail/?pid=000000000030299686>

We would also expect to see detailed and adequate flood resistant and property flood resilient (PFR) measures detailed in the FRA that will be implemented at construction. Physical barriers (PFR), raised electrical fittings and special construction materials are just some of the ways you can help reduce flood damage.

While PFR measures are Kitemarked to a height of 0.9m, research carried out for the Department for Communities and Local Government (DCLG) and the Environment Agency has recommended that the use of such measures should generally be limited to a nominal protection height of 0.6m above FFL's. To find out which measures will be effective for this development, please contact your building control department.

Signing up for flood warnings

The applicant/occupants should phone Floodline on 0345 988 1188 to register for a flood warning, or visit <https://www.gov.uk/sign-up-for-flood-warnings>. It's a free service that provides warnings of flooding from rivers, the sea and groundwater, direct by telephone, email, or text message. Anyone can sign up.

Flood warnings can give people valuable time to prepare for flooding – time that allows them to move themselves, their families, and precious items to safety. Flood warnings can also save lives and enable the emergency services to prepare and help communities.

For practical advice on preparing for a flood, visit <https://www.gov.uk/prepare-for-flooding>.

To get help during a flood, visit <https://www.gov.uk/help-during-flood>.

For advice on what do after a flood, visit <https://www.gov.uk/after-flood>.

Please do not hesitate to contact me using the contact details shown below should you have any queries regarding the above information.

Yours faithfully

Mrs Sophie Brown
Sustainable Places Planning Advisor

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Direct e-mail planningSSD@environment-agency.gov.uk