PLANNING MEMO

FROM:	DAVID BECHELLI FLOOD AND COASTAL DEFENCE ENGINEER
TO:	SARAH PAPALEO PLANNING OFFICER
DATE:	11 TH APRIL 2022
APPLICATION:	PLANNING APPLICATION 4/22/2135/0F1
DEVELOPMENT:	PROPOSED RESIDENTIAL DEVELOPMENT FOR 23 DWELLINGS INCLUDING ASSOCIATED INFRASTRUCTURE AND LANDSCAPING
ADDRESS:	LAND AT HARRAS ROAD, HARRAS PARK, WHITEHAVEN

FLOOD MAPPING

The Flood Map for Planning shows the proposed development lies in Flood Zone 1.

Flood Zone 1 comprises land assessed as having a less than 0.1% annual probability of river or sea flooding.

All uses of land are appropriate in this zone.

For development proposals on sites comprising one hectare or above, the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effects of the new development on surface water run-off should be incorporated in a Flood Risk Assessment. This need only be brief unless the factors above or other local considerations require particular attention.

In this zone developers and Local Authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and the appropriate application of sustainable drainage systems.

The Flood Risk for Surface Water Map shows the proposed development lies in an area at a very low risk of surface water flooding.

COMMENTS ON FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY

As the area development site exceeds 1.0 hectares, a Flood Risk Assessment (FRA) is required.

The Flood Risk Assessment & Drainage Strategy (FRA&DS) confirms the flood risk, as previously stated and goes on to suggest that the very low surface water flood risk is likely to be due to the steep sloping topography of the site. It also concludes that the site is not considered as being at significant risk from groundwater flooding, or other artificial sources of flooding.

In order to reduce downstream flood risk, consideration is given to drainage design and surface water disposal following the drainage hierarchy. Design is based on a 1 in 100 year storm with 40% climate change allowance and 10% urban creep of plot size.

Although in some localised parts of the site, infiltration was found to be suitable, it was highly variable across the site and given the physical constraints of the development, infiltration was deemed not to be suitable.

The watercourse within the development is the most appropriate means of surface water disposal and runoff will be stored an attenuated, with controlled discharge into the watercourse.

Consideration was also given to the SuDS components that could be incorporated into the development. Given the topography of the site, only geocellular attenuation tanks were deemed suitable.

To mitigate the potential risk of overland flows entering the site from higher land, it is proposed to incorporate a land drainage system along the northern and eastern boundaries of the site.

The proposed development will be terraced to tie in with the existing topography using the use of engineered slopes and retaining walls. Retaining walls will be positively drained with heel drains. Drawings show that land drainage systems will remain separate to the surface water system, but will discharge into the watercourse at the same point.

Surface water design has also considered exceedance and blockages. Design is conservation, with a higher runoff coefficient used than is the industry standard. Where possible, driveways and car parking areas will be designed to offer additional surface water storage, should the drainage system fail, or flood due to excessive rainfall. Finished floor levels and thresholds will be set above external levels and external footpaths will fall away from dwellings.

In the case of the geocellular storage, should there be problems, spills would occur at the lowest access cover around the properties, with the spills directed towards green areas and intro the land drainage system through site design. A high level overflow in the flow control chamber would direct flows towards the existing highway.

Water quality has been considered and treatment is proposed by means of a hydrodynamic vortex separator or similar.

It is not proposed to have the surface water system to be adopted, instead a third party maintenance company will be established by the developer. An Operation & Maintenance Plan for SuDS has been submitted with the application.

GENERAL COMMENTS

Despite what the Flood Risk for Surface Water Map shows, the surrounding area is notoriously wet and boggy in places, although this does not necessarily mean that the site itself is.

Given the generic problems downslope with surface water, infiltration as a means of surface water disposal could increase other existing water problems, so would not be a favoured solution even if it was found to be suitable.

SUGGESTED CONDITIONS

The submissions supplied in support of the application include much of the information usually required to discharge conditions, so no conditions are suggested.

SUMMARY

The submission comprehensively covers the flooding and drainage aspects required for the development and therefore from a flood risk and drainage aspect, I have no objection to the proposed development.