

## **Seaburn Technical Note – Drainage and Flood Risk**

A Drainage Strategy (DS) and Flood Risk Assessment (FRA) will be prepared by Cundall to accompany the planning application. The reports will review existing site conditions and set out appropriate drainage proposals and mitigation measures in accordance with legislation and best practice.

As the site is in excess of 1 ha, in accordance with National Planning Policy Framework (NPPF) the site needs to be evaluated fully by means of a site specific Flood Risk Assessment (FRA) in order to ensure that the development does not increase the risk of flooding both on site or elsewhere.

In accordance with the requirements of the NPPF, the flood risk assessment will be appropriate to the scale, nature and location of the development and will consider the following:

1. Development description and location;
2. Definition of the flood hazard i.e. identification of all potential sources of flood risk at the development (this includes looking at the highlighted issues along Weymouth Road);
3. Evaluation of the Probability of Flooding;
4. The impact of climate change to the risk of flooding at the site;
5. Detailed development proposals;
6. Flood risk management measures i.e. recommendation of suitable measures to mitigate against flood risk at the development site. For the development this will include an outline of the proposals for managing surface water runoff;
7. Offsite impact; and
8. Residual risks.

The following stakeholders, or their literature, will be involved in the proposed drainage strategy:

- Sunderland City Council (The Lead Local Flooding Authority).
- Northumbrian Water Limited
- The Environment Agency
- Local Authority SuDS Officer Organisation (LASOO)

Preliminary desk study shows Cut Throat Dene forms an area of Flood Zone 3 (land assessed as having a 1 in 100 or greater annual probability of river flooding; or land having a 1 in 200 or greater annual probability of sea flooding). Potential flood risks to the site include flooding of the dene, due to potential blockages in the culvert, and high sea levels.

The surface water within the development site will be discharged to Cut Throat Dene, at a rate to be agreed with the Lead Local Flooding Authority. In conjunction with NWL, we will be removing surface water flows from the existing combined sewer network and redirecting it to the watercourse. The peak flow rate of surface water to be removed is more than 10 times that of the foul to be added.

Analysis of modelling undertaken by Cundall on the existing Cut Throat Dene utilising its full catchment, the highest recorded tide level and a 1 in 100 year storm event indicates operation is satisfactory assuming all outlets are well maintained.

It is required that Sustainable Drainage Systems (SuDs) be used within the development to provide a level of treatment to the water before it reaches the watercourse. Therefore a number of SuDs techniques are proposed including; swales, permeable paving and green roofs.

Northumbrian Water have agreed to a foul water discharge to the existing combined sewerage system into a manhole, east of the site.