

Land rear of Nos. 41 – 47 Pevensey Road, Bognor Regis

Statement on Flood Risk and Foul / Surface Water Drainage

Introduction

This statement has been produced in support of an application for planning consent for the construction of four new dwellings on land to the rear of Nos 41 – 47 Pevensey Road, Bognor Regis, West Sussex PO21 5NY; OS Grid Reference SZ 9219 9983. See the attached plan, Drawing No. 1615/2.09C for a Location Plan and details of the proposals.

Flood Risk

The site is shown to lie in Flood Zone 1 on the current Environment Agency Flood Map for Planning and is thus considered to have a low risk of flooding from both tidal and fluvial sources. However, the rear gardens of 41 - 47 are shown to have a low to medium risk of flooding from surface water (pluvial flooding) on the Surface Water Flood Map and there is concern to ensure that the proposed new dwellings can be safe and that the site can be adequately drained without increasing the risk of flooding elsewhere.

Historical Flooding

During the 10th, 11th and 12th June 2012, an extreme rainfall event led to widespread flooding across parts of West Sussex. Storm frequencies with a return period in the region of 1 in 200 years were recorded in this area, resulting in overloading of much of the local drainage network and causing flooding to almost 800 properties across the region. The flooding has been attributed partly to issues with local land drainage systems and partly to simple hydraulic overloading.

Several properties in Pevensey Road were flooded and from records of the flooding and residents' reports, we have determined a peak flood level here of 6.62m Above Ordnance Datum (AOD), based on the Ordnance Survey Benchmark on the boundary wall at 32 Pevensey Road, value 7.12m AOD.

Since this flood event, Arun District Council has carried out various repairs and improvements to the local land drainage system, clearing blockages and repairing partial collapses.

Flood Mitigation

Notwithstanding the extreme nature of the June 2012 event and the improvements that have been carried out subsequently, the area remains at risk from surface water flooding due to the local topography and it will be important to have due regard for this in the design of any new dwellings.

It is not normal practice to design against such extreme 1 in 200-year return period floods but it would be considered imprudent here to recommend floor levels any lower than the recorded June 2012 flood event and we therefore recommend that they are set no lower than 6.62m AOD.

This floor level is some 600 to 800mm above existing ground levels and it is proposed to provide some low garaging and also raised ground floors of beam and block construction that will allow any flood water to flow beneath if necessary, in order not to significantly affect the flood storage availability within the site.

The new buildings will, nevertheless, result in some loss in flood storage and this will need to be compensated for if the flood risk to adjoining land is not to be increased. In this respect, it is proposed to remove an existing extension, garage and annex building and raised planters and the Architects have calculated that this will, in fact, increase the available flood storage by around 7 m³, thus providing some betterment.

It may be possible to provide additional storage in an open pond, providing that water levels in the pond can be maintained lower than bank level in order for the storage to be available when needed.

Additionally, storage of up to 42 m³ will be available beneath permeable paved access and parking areas – see below.

Surface Water Drainage

The local geology comprises River Terrace Deposits of sand, silt and clay over London Clay and Lambeth Group 'bedrock' of similar material. Percolation testing to BRE 365 will need to be carried out in due course to determine which, if any, SuDS features can be employed here. From other testing that we have carried out in the region, we would expect low soil infiltration rates of less than 5 x 10⁻⁶ metres/ second. Winter groundwater monitoring will also need to be carried out in order to determine the optimum base level for any SuDS features provided.

If the testing shows that percolation rates are too low or groundwater levels too high for full infiltration methods, then storage and a controlled discharge to the piped watercourse running through the rear of the site can be provided. An open pond can be considered for this as well as underground structures such as geocellular polypropylene 'crates'.

Even if fairly low soil infiltration rates are found, it is proposed to use permeable block paving for the access and parking areas and this will have a coarse aggregate subbase that can provide up to 42 m³ of shallow storage for surface water.

Foul Water Drainage

Southern Water Services Ltd has not been consulted but it is considered unlikely that they would object to just four additional dwellings being connected to the 225mm diameter public foul water sewer in the highway.

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