

4485/2.7/NS

22<sup>nd</sup> January 2014

## **Courtwick Lane, Littlehampton**

### **Foul Drainage**

The waste water from all houses connects to the site sewer network, which is approved by Southern Water.

The sewer network drains all waste water to the new pumping station located on the southern western site boundary.

The pumping station pumps the waste water from the site to the existing public sewer network head in Eldon Way and is designed to store 24 hours of waste water in case of pump failure. The pumps are fitted with alarms in case of failure, with access to the station, which has been designed so that a 4000 gallon tanker can gain access for any maintenance or emergency emptying.

### **Surface Water**

The geology of the site has been determined by intrusive geotechnical testing. The composition confirms that the topsoil and clay have poor infiltration potential, the sand has moderate infiltration potential and that the chalk has good infiltration.

All roof and hard standing surface water currently discharges into relatively small soakaway structures in the sand strata. These small soakaways are designed on the basis of the tested percolation rate of the sand strata which infiltrates the water into the ground, at a given rate, whilst storing the surplus water within the drainage system. These are designed to accommodate the 1 in 100 year event with a 30% additional allowance for future climate change without flooding.

Where possible, highway surface water is connected to a highway drain network discharging to group of deep soakaways founding in the chalk strata. Such soakaways need to be located at least 10 metres from the adjacent foundations and the suitable locations, within the development, are limited. These highway soakaways are designed on the basis of the tested percolation rate for the chalk strata which infiltrates the water into the ground, at a given rate, whilst the storing of the surplus water within the structures. These are designed to accommodate the 1 in 100 year storm event with a 30% additional allowance for future climate change without flooding.

Where it is not possible to connect the highway drainage to the soakaways the remainder of the highway surface water drains to a highway drain network. This conveys surface water run-off to deep open lagoons founding in the chalk strata. These lagoons are designed on the basis of the tested percolation rate for the chalk strata which infiltrates the water into the ground, at a given rate, whilst the storing of the surplus water within the drainage system. These are designed to

accommodate the 1 in 100 year storm event with a 30% additional allowance for future climate change without flooding. As these lagoons are deep, in order to intercept the chalk strata and the optimum infiltration rate, they will become stark features offering no benefit for encouraging wildlife, especially for wetland ecology, as the structures for the most part will be dry, with the exception of significant rainfall events.

Each lagoon is to have an additional shallow pond alongside. These are to be fed by a limited drain network to maintain their water levels. The ponds are designed to ecology standards and include an impermeable liner, beneath a soil layer, and a high level overflow into the soakaway lagoons to provide a permanent water level with shallow gradient sides. This is to provide a habitat on site for wetland plant species, invertebrates and wetland animals and birds to compliment the Arun flood plain beyond.