

DESIGN STATEMENT FOR SUDS AT JACKETS LANE NORTHWOOD – REF 4198

Rev A

The topography of the site means all plots are on the slope down to the valley. The soil report has confirmed 20m of soft clay (necessitating piled foundations) and concludes soakage on this site is not possible.

The hierarchy design statement identifies the only possible way of source control for this site is to attenuate for gradual release to the public sewer. However the nearest public sewer is in Hurst Place (no drainage in Jackets lane) and the levels of the sewer will be higher than the hardstanding collection system. There is a surface water asset in Iveagh Close but as the connection from our site would enter at the top of the run the levels do not allow this to happen. Added complication of crossing the public highway/land for approximately 40m -70m negotiation existing furniture makes this impractical.

Therefore a pumped system to Hurst Place is needed to get the water to the correct level. This would be the same for the foul drainage. The protected trees prohibit the location direction and placement of pipework to the upper level.

Rainwater from all the roofs will be collected into butts and the over flow will be discharged into the permeable hardstanding gravels. All hardstanding will be permeable as per the details specified in the suds manual. The bedding of the stone will be on a geomembrane to allow some soakage if possible but this very low rate will be ignored for the design of the system. The water will filtrate to perforated pipework where it can be collected and discharged to the pumps. Plot five and six will pump to a higher manhole which will the gravity feed, to slow the speed of collection, to the higher system for plots one to four. Pipe storage will be used if applicable. The upper level system works in a similar way to the lower system in water collection. Attenuation will need to be below ground as the site does not have sufficient area for open surface water features. The attenuation tank will be plastic create system to provide maximum storage volume. This will discharge to the final pump system into the sewer. Pumping and storage will delay the time water is discharged into the sewer, as opposed to a natural gravity system, which will be a benefit to reduce surcharge possibilities.

Design of the system will be using MicroDrainage a recognised drainage design software in the industry (software designers are members of the panel that wrote the CIRIA manual). From CIRIA suds manual and MicroDrainage default, climate change factor is to be set to 40%.

Communication with Thames water has been sort and an application to discharge has approved the design. The Invert level of the connection sewer has been taken from measuring on site ourselves rather than relying on database information. The level difference between the bottom of plot 6 and the level to the road at plot 3 (our nearest connection point) is so different that it is clear a pumps are the only way to discharge the water.

The maintenance schedule confirms the maintenance regime for the finished system.

