



Ryefield Farmhouse, Oak Tree Lane, Woodgate

Proposed development for 5 No Residential Dwellings

SURFACE WATER DRAINAGE STRATEGY & SUBMISSION

The proposed development for five residential dwellings is on the area of land west of Ryefield Farmhouse, Oak Tree Lane, Woodgate. The site covers an area of approximately 0.21Ha.

In order to provide an acceptable surface water drainage strategy for the proposed development the SuDS hierarchy for sustainable drainage has been followed.

1. Infiltration: Winter monitoring has shown that the recorded groundwater levels preclude the use of soakaways as the means of surface water disposal. Monitoring records show the highest groundwater level to be 0.09m below existing ground level.
2. Discharge to Watercourse: The nearest watercourse is 0.25Km east of the site and access to it will be over third party land to which the developer has no rights. The new Water UK '*Design & Construction Guidance for Foul and Surface Water Sewers*' precludes the Water Authority requisitioning a surface water outfall to a watercourse so this solution is not achievable.
3. Discharge to a Sewer: Southern Water asset plans show that there are no public surface water sewers in the vicinity. The only option is to request a limited discharge into the public foul sewer sited 55 metres west of the site in Oak Tree Lane. Due to the difference site levels in relation to the public sewer it will be necessary to discharge the outfall through a pumped rising main.

Using the IH124 Mean Annual Flood Method the '*greenfield*' run off from the undeveloped site has been calculated to be 0.8 lits/sec., for all practical purposes this discharge has been taken to be 1.0 lits/sec.

Using an allowable discharge of 1.0 lits/sec and catering for the 1 in 100 year storm event with an additional allowance of 40% for climate change and incorporating a further 10% allowance on the impermeable area for '*urban creep*' the volume of attenuation required, calculated by the MicroDrainage suite, is 70.5m³.



It is proposed that this attenuation volume is stored in an 'Aquacell' tank at the Southern end of the site prior to discharging through a pump chamber into a receiving manhole and then by gravity into the public sewer at manhole Ref9202 in Oak Tree Lane. Connection to the public manhole would be subject to a S106 Agreement with Southern Water.

All surface water drainage features and pollution control measures will be maintained by the site specific management company set up for site maintenance requirements and which will be funded by an annual payment from residents.

Developing this strategy a detailed drainage design has been undertaken for the site and can be seen on the Kazys Narbutas Consulting drawing KNC2107-602-01. This drawing also shows the overland flow routes in the unlikely event of any surcharging of the system together with details of the foul drainage strategy.

The drainage strategy drawing referred to along with all supporting calculations are included with this submission.