PROJECT PROFILE

Client: Aspen Homes

Location: Ash, Surrey

Sectors: Residential

Services: Sustainable Drainage

Project overview: Working with developer to create a workable plan for discharge of surface-water run-off which was acceptable to Thames Water

Added value:

- Site delivered with surface drainage system
- Design to ensure surface water runoff discharged effectively, even in extreme events
- Flow rate minimised

Foreman Manor, Ash, Surrey

The developer of a small residential scheme realised that there was no obvious means to drain surface water from the site. Motion was contracted to investigate the options and, subsequently, carry out the detailed design of the system. The remit was to design a drainage strategy that would ensure surface-water runoff could be discharged effectively, even in extreme events, without increasing flood risk in and around the site.

Aspen Homes already had planning permission for the scheme. However, the site was only for nine dwellings and was not classified as a major development. Including a drainage strategy with the proposal had not previously been a requirement. The soil was clay based and therefore infiltration to ground was not suitable. There were no adjacent water courses and a surface-water sewer was also not available. As the roof of the existing large house on the site drained into the foul water sewer, this was the only practical solution.

The challenge for Motion's team of drainage experts was to produce a plan to replicate the existing surface-water discharge rate for the nine new houses. Considering the increase in hard standing and roof covering, Thames Water needed to be persuaded that there would be no detriment to the system from continuing to discharge the surface water into the foul water drain.

Normally, when surface and foul water flow into the same drain, it is classified as 'combined'. However, in this case, the sewer was classified as 'foul' on Thames Water's mapping system and there was no record of surface water drainage being discharged in this manner. Motion had to demonstrate the situation to Thames Water and Surrey County Council, as Lead Local Flood Authority (LLFA), and prove that the proposed plan wouldn't increase the surface water flow into the sewer. Gaining approval from the LLFA involved infiltration testing onsite. The plan included a hydrobrake to control the flow of surface water into the foul sewer. To ensure the integrity of the system was not compromised, cellular storage was incorporated under the gardens of the houses. This holds surface water in an extreme event, allowing the flow rate to be maintained.

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