



DRAINAGE SERVICES CASE STUDY

THE PROJECT

CET were called to a residential development by a long-standing customer, Cunningham Lindsey. Our initial instruction was to undertake a comprehensive CCTV survey of the surface drainage system as the site had a history of localised flooding.

Initial investigation revealed that the affected properties bordered nearby farmland and were located at the bottom of a gentle slope. Whilst the properties were connected to a shared drainage system, managed by the local water authority, run-off from the roofs and hard-standing areas discharged directly into the surface drainage system.

The results of the CCTV revealed a poorly constructed drainage system that incorporated negative fall and was not connected to constructed soakaways, as previously assumed, but discharged directly into the ground.

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CET'S APPROACH

We initially explored the option of removing the defective system and constructing traditional soakaways to discharge the surface water.

Unfortunately this was not viable, because of the low permeability of the clay soil.

We then requested permission from the local water authority to re-route the surface water to discharge into the foul drainage system but were refused.

With construction of traditional soakaways and diversion to the foul water system being ruled out, we looked into the possibility of introducing an attenuation tank system, to be located beneath the car parking area to the front of the affected properties.

CET set about designing a new surface water drainage system that would run downstream from the rear of the affected properties, down the flanks to the front; allowing for the connection to all gullies and existing linear drainage before finally discharging into the proposed attenuation tank. From the attenuation tank, the outfall pipe would connect to the shared public sewer.

Following initial designs we conducted an on-site inspection. The inspection revealed a shallow drain line that would not allow the attenuation tank to drain by gravity, so it would need to be pumped. The plans were submitted to the local water authority and approved on the proviso that the discharging of water to the public sewer was limited to 3 litres per second.

As the pumped system would require a power source it was decided that the most suitable solution would be to construct separate tanks for each of the affected properties with a cumulative discharge rate not to exceed the 3 litre per second limit applied by the local water authority.

With this in mind the specification of the pumped attenuation tank was drawn up and new drawings displaying our proposed drainage system and tanks were prepared. An estimate was raised and forwarded to the client for approval.

As the project progressed, further site visits were arranged with both the local residents and the project engineers to ensure everyone was kept informed and engaged.