

Drainage Systems and SuDS

Upgrading and refurbishment of depot

Alltami, Deeside



Client

Flintshire County Council

Services Provided

- Geotechnical investigations
- Design incorporates SuDS including rainwater harvesting
- Drawing up tenders
- Construction support



Scheme Details

The scheme involved upgrading and refurbishment of an existing operational depot, in order to increase its capacity to cope with larger vehicles, and consolidate this county-wide facility in one location.

Waterco was engaged to work as part of a client led multi-disciplinary team to develop the design, obtain tenders and provide construction support.

Geotechnical investigations were undertaken to determine soakaway and drainage requirements along with the potential environmental implications of a mineshaft on the site.

One of the challenges was that the existing yard layout and fall gradient directed surface water into the salt store and so needed to either be reversed or otherwise intercepted. The surface water design required the incorporation of a number of Sustainable Drainage System (SuDS) elements including rainwater harvesting and recycling, soakaways (where ground conditions permitted) disconnect of gullies and RWPS from the drain, and an underground attenuation tank to ensure the rate of water flowing off site did not exceed the existing (with an allowance for climate change). Prior to entering the attenuation tank the water was routed through a new oil interceptor and levels were selected to obviate pumping.

Outcomes

Foul sewerage was taken to a new effluent treatment plant in a purpose designed reinforced concrete well. Again this was sited to avoid pumping. A new offsite drain collecting both the excess surface water and the treated effluent was routed via a new offsite drain to an existing nearby waterway with a new NRW Consent obtained and easement plans prepared.

A lorry wash facility was designed with a recycled water system and new power and lighting ducts were located in consultation with the electrical engineer.