ENVIRONMENTAL FLOOD RISK DRAINAGE ECOLOGY

Goole Hospital SuDS Design

Goole & District Hospital

Project aims

Design of a sustainable drainage system (SuDS) to treat and drain runoff from a new car park development at the hospital.

The key aspects of this study included SuDS conceptual design, detailed design, hydraulic and structural design of car park.

Project summary

As soakage tests showed that infiltration drainage was not a viable option at this site, the car park development required a discharge that was restricted to the pre-development greenfield runoff rate.

The car park was designed to drain via permeable block paving, which provides the primary means of collecting, treating and attenuating runoff as a source control system. The parking bays were designed as flat permeable areas with open-graded subbase depths that were sufficient to contain the 1 in 100 year plus climate change runoff without surface flooding. The subbase zones were lined with impermeable membrane to create a series of 'tanks' below the parking bays, which were interlinked and ultimately discharged via a single flow control device.

Ground conditions included elevated ground water levels and silty clays with CBR values typically 2%. The pavement was design with appropriate subbase depths, capping layer and geogrids to achieve the required structural performance.

The design and construction of the scheme were achieved to a very tight programme imposed to deliver the operational car park.

Clear Environmental Consultants Limited, 3 Wentworth House, Vernon Gate, Derby, DE1 1UR
tel +44 (0)1332 387650 fax +44 (0)1332 650222 **www.clearltd.com**