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.

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