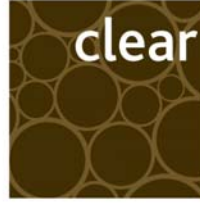




ENVIRONMENTAL



FLOOD RISK



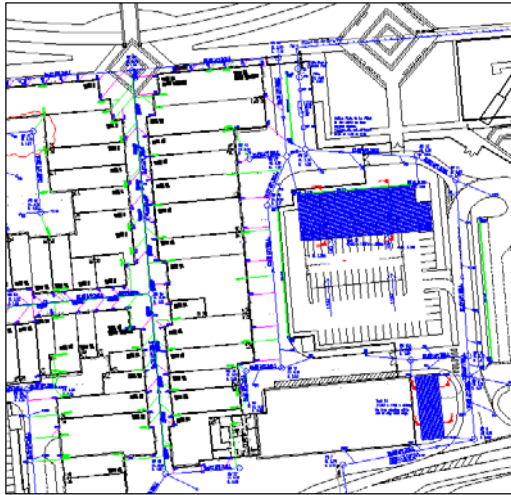
DRAINAGE



ECOLOGY

# Springfields Stormwater Drainage Design

Interserve / EPG Ltd



## Project aims

Development of an alternative stormwater drainage system to serve a new retail development. Utilising SuDS techniques to create cost savings and to reduce health and safety risks.

The key aspects of this study included SuDS conceptual design, stormwater detailed design and hydraulic and hydrological modelling.

## Project summary

The Springfields Outlet Shopping and Garden Festival development is located in Spalding, Lincolnshire. The entire site covers some 12 ha with

5.2 ha being paved and roofed area to be drained. Flooding protection up to 1 in 100 years protection was required.

Working in partnership with the Environmental Protection Group Ltd (EPG), a conceptual SuDS design was developed as an alternative to a conventional stormwater drainage and storage scheme.

Elevated groundwater levels precluded the use of infiltration drainage systems. The proposed scheme was based on providing discrete, shallow attenuation storage in the form of geocellular units with passive flow control.

The system was modelled in InfoWorks to test compliance with the required design standards. The model was also used to optimise the required storage volumes and to check flood routing during extreme rainfall events.

Ground conditions included high groundwater levels and unravelling soils at 2m depth. For these reasons, the scheme was designed as a series of shallow storage tanks with shallow interconnecting pipework to reduce risk and to avoid delays during construction.

The properties of the geocellular storage units together with their very shallow depths were also utilised as sub-base replacement to reduce the amount of imported material required.

