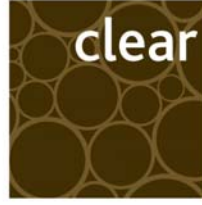




ENVIRONMENTAL



FLOOD RISK



DRAINAGE



ECOLOGY

Toyota Car Park Expansion

EPG Ltd / Vinci

Project aims

As part of a design and construct submission we developed an alternative stormwater drainage system to serve a new car parking pound for Toyota's Burnaston car plant. SuDS techniques were utilised to create cost savings and to reduce health and safety risks.

The key aspects of this study included SuDS conceptual design, stormwater outline design, hydraulic modelling, and cost saving alternate design.

Project summary

Toyota's UK car manufacturing plant is located in Burnaston, Derbyshire. Due to increased manufacturing capacity, additional car storage areas was required and an 11 ha parking facility was to be designed and constructed.

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

Elevated groundwater levels and clay soils 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 to progressively mobilise the storage volumes.



The use of shallow buried storage units also allowed the original storage lagoon to be reallocated as additional car parking area, thus adding further value to the scheme.

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.

By designing shallow storage units we were also able to reduce the depths of carrier drains and further reduce costs and risks.

