Innovative Hybrid SUDS System Provides the Solution for the A3 Road Improvement Project

Four separate soakaway structures, including a circular modular cell installation, manage surface water run-off on the A3 road improvement scheme at Hindhead, Surrey.

Polystorm and Polystorm Xtra modular cells

The £371 million A3 Hindhead road project, undertaken on behalf of the Highways Agency, required an innovative yet heavy duty soakaway solution. Polypipe worked closely with Balfour Beatty to provide a solution using its Polystorm and Polystorm Xtra modular cells, creating four separate soakaway structures.

With the first two, relatively simple, structures installed in November 2008, in-depth design work then began on the third and fourth soakaway applications.

Polypipe was heavily involved in the initial design process along side Balfour Beatty and consultant engineers Mott Macdonald and Atkins.

The third soakaway structure provided a particular challenge in order to meet the required installation depth of 6.5 metres.

The innovative solution designed by Polypipe in conjunction with Balfour Beatty, used Polystorm cells installed in a circular, concrete-lined tank. Granular material was then used to fill the gaps and maximise the performance of the soakaway. A 1500mm catchpit was also used to divert excess stormwater to the soakaway structure. Polystorm and Polystorm Xtra cells were used to form the fourth structure, creating a 6 metre wide x 62 metre long structure. Polystorm Xtra cells formed the base layer of the soakaway tank to achieve an installed depth of 4.2 metres. Working closely with Balfour Beatty, Mott Macdonald and Atkins, a number of 750mm diameter 'wicks' were designed using a 750mm collar and structured-wall pipe with a gravel filling. This provides a 30% void ratio and improves the flow of surface water from the soakaway structure down to the permeable soil strata at 15 metres. Daniel Machnik, Senior Buyer for Balfour Beatty Civil Engineering was impressed with the innovative water management solution provided by Polypipe.

CASE STUDY

Project
Hybrid Soakaway system uses Polystorm, Polystorm Xtra and Ridgidrain pipe to provide an innovative water management solution

Client
Highways Agency

Application
Soakaway Structures

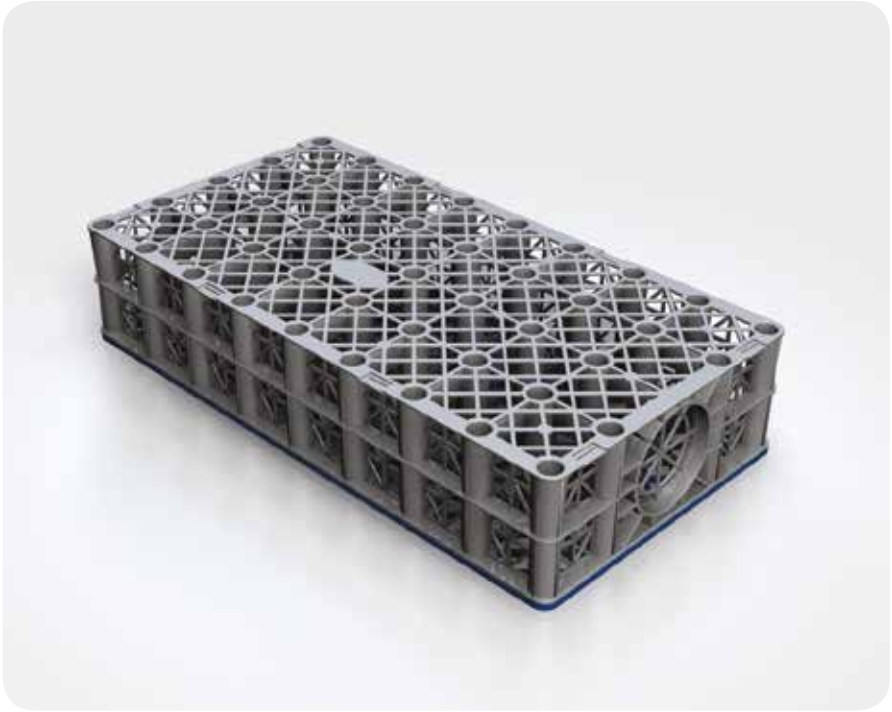
Products
Polystorm
Polystorm Xtra
Ridgidrain
Cable Protection

Polypipe

“This project has demonstrated the Polypipe team’s design service and technical support capabilities.”

Daniel Machnik,
Senior Buyer for Balfour Beatty Civil Engineering

“The adaptability of the Polystorm and Polystorm Xtra cells offered an advantage on this challenging scheme and the installation guidance the team has demonstrated on-site has been of great value.” Polypipe also undertook further design work for £200,000 worth of cable protection products supplied for the project. To improve the installation times of the cable protection within a tunnel section of the project, Polypipe suggested a large bank of sealed ducts in 94 and 150mm diameter were installed using its 150mm Ridgidrain pipe with integral sockets. As part of an overall commitment to reducing its impact on the environment, Polypipe also implemented a recycling scheme on-site, collecting off-cuts of pipe for re-use in its manufacturing process.



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