

Highway Soakaway – StormBrixx provides the infiltration solution on a key section of the A442



When Telford and Wrekin Council needed to provide a safe, sustainable and maintainable infiltration solution for a key section of the A442, they turned to the expertise of ACO and its StormBrixx system.

Managing surface water run-off on highways and local roads is a key consideration for highways agencies and local authorities alike, protecting road users from flash flooding that increasingly strikes our road network. Attenuation and infiltration solutions are a proven way of reducing the effects of these disruptive weather issues, and ACO's StormBrixx system proved to be the ideal solution for Telford and Wrekin Council when undertaking remedial works on a stretch of the A442 installation in Shropshire.

In December 2016 73m³ of StormBrixx HD (Heavy Duty) was installed along the verge of the A442 in

Cold Hatton to minimise surface water disruptions to the road, with its high storage capacity and flexible crate design. *"ACO's modular crate system allowed us to fit a new highway soakaway into a long and narrow space while maximising the attenuation provided,"* commented Lucinda Lycett, Engineering Assistant at Telford and Wrekin Council, who helped specify the solution.

A new gully was also built into the verge, installed at a lower level than the road surface, which then connected to the StormBrixx soakaway tank via a series of pipework underneath the road surface.



Project:
A442, Cold Hatton, Shropshire.

Objective:
Provide a stormwater control solution in a limited space, that reduced the effects of flash flooding on the section of road.

Solution:
StormBrixx HD soakaway with remote access



Additionally, the accessibility and stacking ability of the ACO StormBrixx system benefited both the Local Council and Contractors respectively. Lucinda continued: *"The system was easy to store on site and the design allows us to easily inspect and maintain the soakaway."*

This project fell to Telford and Wrekin Council because the particular section of the A442 came under their remit for repair and maintenance, rather than Highways England.

POLICY FRAMEWORK

Maintenance and sustainability were already high on the agenda for Telford and Wrekin Council. ACO's modular crate system allowed them to fit a new highway soakaway into a long and narrow space while maximising the attenuation provided, following its 2016 Highway Asset Management Policy and Strategy document, which was developed from the April 2015 changes to the National Planning Policy Framework.

Under the NPPF, local authorities are required to consider the use of sustainable drainage systems (SuDS) where applicable. Following the success of a StormBrixx HD installation at the Telford Priory School in 2014, the council's engineers were already very familiar with the long-term water management and sustainability benefits of employing the system as a SuDS solution.

SOAKAWAY CONFIGURATION

ACO StormBrixx HD soakaway configuration was chosen, and this allowed infiltration into the ground, a key consideration for Sustainable Drainage Systems (SuDS) and acted as a stormwater reservoir during heavy rainfall, to avoid flash-flooding of the area.

The unique pillar configuration of the ACO StormBrixx HD system offers a high porosity of 95%, which not only limited the amount of excavation required to achieve the specified storage capacity, but reduced the aggregate needed for backfilling and improved the flow characteristics of run-off through the installed tank.

The StormBrixx system was lined with ACOTex, a non-woven polypropylene geotextile with excellent filtration and drainage properties. This would ensure any stormwater collected in the soakaway tank could infiltrate back into the surrounding soil at a natural rate, without surcharging the surrounding area.



EASE OF ONGOING MAINTENANCE

As Telford and Wrekin Council would remain responsible for the ongoing maintenance of the storm water management system once the installation was finished, a StormBrixx remote access unit was integrated at the inlet point and an inspection point was added to the far end to enable full and uninterrupted access to the entire installation. This removed the need for upstream manholes, which would have impacted the size of the soakaway system and ultimately added further unnecessary cost into the build. Crucially, they also enable maintenance engineers to inspect the installation through the use of a push-rod CCTV inspection camera, as well as jetting to remove any built-up of sediment.

INSTALLATION AND LOGISTICS EASE

The installation of the project was facilitated by the unique logistical benefits of the StormBrixx HD system. All the materials could be delivered to site on one truck due to its stackable design, where all of the half pieces fit precisely inside each other. Conventional infiltration systems would require up to four trucks, not to mention increased on-site storage, yet the innovative design of the StormBrixx system ensured the commonly associated additional costs could be avoided.

Peter Bembridge, Business Development Manager for ACO Water Management, commented:

"Having worked with the council's engineers on previous projects, the ACO team were able to quickly devise a specification and ensured the work was undertaken in an efficient manner. Everyone is aware that highway closures and maintenance can be a major inconvenience, yet the logistics and installation benefits of StormBrixx helped keep any impact on road usage to an absolute minimum."

STORMBRIXX HD AND NEW STORMBRIXX SD

ACO has now launched its StormBrixx SD solution. This is a general-purpose extension to the range, which benefits from the core characteristics of StormBrixx HD such as stackability and high porosity but without the need for integrated 'man access' options that some projects require.

To find out more about ACO's range of stormwater control options, please visit:

www.aco.co.uk/products/stormbrixx

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