

Polypipe provides shallow water attenuation solution for Portsmouth's latest transport hub

Polypipe designed and delivered a Permavoid system to provide a water treatment and management solution for a busy transport interchange.



deck penetrations allow it to be discharged directly into the sea at Portsmouth Harbour.

The ability of the Permavoid design to treat water at source avoided the need to drill through the nearby sea wall and install a deep petrol interceptor to treat and return water, as was originally specified. This provided significant project savings on installation time, and approximately £200,000 on costs, and it is a system Osborne wants to use again.

The Permavoid solution designed by Polypipe allowed captured water to be treated at source, delivering significant savings on installation time and approximately £200,000 on project costs.

Polypipe supplied a Permavoid engineered shallow water treatment and attenuation solution for Portsmouth City Council's new transport interchange at The Hard.

The interchange, close to the world-famous Historic Dockyard, aims to meet modern transport requirements by providing an efficient and visually pleasing site at which bus, train, and boat services come together. Built on a concrete deck directly above sea level with very shallow cover, the interchange required a compact design solution that could provide a water treatment and management solution at a location with restricted space to build.

Working alongside the sustainable drainage design consultant Environmental Protection Group (EPG), Polypipe advised on the design of a system for Consultant Engineer RoC Consulting, using a range of components from the Permavoid system that proved ideal for the demands of the site. The solution offered the strength and adaptability required to meet the water attenuation and treatment needs of a busy transportation interchange, located on a challenging geographical site. Polypipe

worked with Osborne and EPG to come up with a cost saving programme to install an innovative alternative to the original design.

Polypipe designed and supplied 12 Permavoid tanks for installation across The Hard site, which were laid under the pedestrian areas to address the lack of cover for bus loadings, with only 130mm cover above the tanks. The Permavoid cells boast a 95% void fill ratio and incorporate a jointing mechanism to form an interlocking raft of exceptional strength.

510 Permavoid cells were used in conjunction with a 147m Permachannel linear channel treatment system and 296 Permavoid Biomat geocellular units for surface water treatment, installed by main contractor Osborne to capture, treat, and attenuate surface water run-off from the bus station's surface. The surface water run-off passes under the high Kassell kerbs used across the site, and is sent through a Permaceptor unit, which allows for the treatment of oils and silts. Water then enters one of 12 Permavoid tanks giving a total of 30m³ gross storage. Once the treated water makes its way to the Permavoid tanks,

CASE STUDY

Project

The Hard, Portsmouth

Client

Portsmouth City Council

Application

Shallow water attenuation and treatment system

Product

Permavoid, Permachannel, Permavoid Biomat and Permaceptor



“We are delighted to have been able to provide a custom designed attenuation and treatment solution for a site that is of such importance to the city of Portsmouth. The Permavoid system was perfectly suited to tackle the challenges presented by the shallow cover of the site, and to make use of the depot’s proximity to the harbour.

“This project really showcases the adaptability and efficiency of the Permavoid system and the time and cost savings it can achieve for our clients.”

**Rosie Cheetham,
Marketing Consultant,
Polypipe.**



RoC Consulting were civil and structural engineers for the project. Andy Rain, Civil Engineering Director, said:

“Polypipe supplied an innovative, modern solution to allow the delivery of a complex design that overcame some unusual geographical features, including proximity to the sea. Using Permavoid allowed the vision of the first phase regeneration of The Hard to be realised with the transport hub – a new gateway to Portsmouth.”