

Polypipe's Permavoid system selected for prestigious London residential development

Polypipe was called upon to provide a stormwater management system for the redevelopment of Walthamstow Stadium.



1.5 million
litres of
stormwater
storage



Working closely with main contractor Quadrant Construction and consultant engineers MLM, Polypipe's Permavoid geocellular stormwater attenuation system was specified due to its ability to work perfectly as a sub-base replacement system, avoiding deep excavation at the site which contained contaminated ground and a high water table.

Located on the site of the former greyhound stadium and adjacent to the River Ching, the Walthamstow Stadium development boasts 294 new homes that incorporate sustainable drainage features, including brown roofs and permeable paving.

Utilising the high strength Permavoid system, Polypipe designed and supplied the system beneath 4,500m² of permeable paving to provide 1,500m³ of stormwater attenuation to meet the requirements of the Environment Agency.

The design featured 150mm deep Permavoid cells, with Permafilter geotextile laid on top between the cells and the permeable paving. The Permafilter acts as a barrier to capture and treat surface water run-off at source from the permeable paving above, before entering the tank. The sides and the bottom

of the tank were wrapped in a geomembrane to allow for stormwater to be attenuated, before discharging at a rate set by the Environment Agency into the river with the use of flow control devices. In areas of hard standing, without permeable paving, Permachannel and Permavoid Biomat were installed to capture, treat and attenuate surface water run-off.

The Permavoid system is capable of handling rainfall in the event of a '1 in 100' year storm, and reduces urban stormwater run-off from the site by 80%

Despite being so lightweight, the strength of the Permavoid cells allows them to support structural loads across heavily trafficked areas, making them suitable to withstand the compressive and dynamic loads produced by vehicles at the site.

CASE STUDY

Project

Walthamstow Stadium Development

Client

London and Quadrant

Application

Stormwater Attenuation

Products

Permavoid Cells, Permavoid Biomat, Permachannel and Permafilter