

# Supermarket chain makes Permavoid purchase for new store

Polypipe's Permavoid solution meets challenging requirements on-site at a new retail development.



**High water table**



When a national supermarket chain selected a site for their newest food store, main contractors MLM Consulting Engineers turned to Polypipe to provide a water management solution to meet the challenging terrain.

Located in the small Essex market town of Coggeshall, the development featured a high water table at a depth of 0.5m, which was likely due to hydraulic connectivity from a nearby river. Polypipe utilised its popular Permavoid geocellular solution to provide a suitable sub-base replacement system. The void ratio of Permavoid cells provided ideal coverage levels for the expected rainfall levels within the footprint of the development's car park area.

Capable of attenuating 110m<sup>3</sup> of stormwater, Polypipe supplied Permavoid cells that were

150mm deep to create a high strength structural raft. The system sits beneath permeable paving in place of the traditional aggregate sub-base.

Located beneath the site's car parking facility, the system specified was required to withstand heavy loads from HGVs and cars during day to day retail and residential use. As the Permavoid's 95% void fill ratio made it an ideal solution for storm-water storage, it's high vertical and lateral strength made the tank strong and durable to withstand daily heavy loads.

**Using Permavoid at shallow depths meant that necessary excavation was greatly reduced and the light weight, interlocking system meant that installation could be much faster.**

To avoid any future pollutants potentially entering the local watercourse, Polypipe provided its Permafilter geotextile beneath permeable pavement and above the tank in order to trap oils and break them down through biodegradation.

Jim Rudd, Director at MLM, said:

*"There were numerous engineering challenges to overcome on this site. Thankfully, Permavoid allowed us to form a solution to cope with the HGV traffic without compromising on stormwater storage or depth levels. The interlocking nature of its cells meant that we could configure a system making best use of the space available, providing ideal coverage levels for expected rainfall within the footprint of the development's car park area."*

## CASE STUDY

### Project

Supermarket Coggeshall

### Consultant

MLM Consultant Engineers

### Application

Stormwater attenuation system

### Products

Permavoid Geocellular,  
Permafilter Geotextile

### Site Constraints

High water table,  
Varied cover levels