

Permavoid installed for sub-base replacement and irrigation tree pits at Arundel Gardens in London

Polypipe's Permavoid system was retrofitted below the road surface as sub-base replacement to provide flood alleviation, with the added benefit of being able to irrigate tree pits along the road to enhance the biodiversity of the streetscape.



Retrofit
SuDS under
permeable
asphalt



Urbanisation, coupled with climate change, has led to a disturbed water cycle and an increase in flood events in the UK. This has placed an immense stress on London's combined sewer systems, which have been developed over old river culverts. In order to compensate for the loss of permeable green space that would have alleviated the risks of excess stormwater, Polypipe was able to supply its unique geocellular system at Arundel Gardens, a typical suburban street in Kensington.

At Arundel Gardens, Polypipe was selected to provide an at source SuDS system utilising

Permavoid. The system has been installed for sub-base replacement to attenuate surface water, with the benefit of being able to create a passive watering system to feed the established magnolia trees that line the street.

The system will protect homes on the street during periods of heavy rainfall, many of which have basements that can be prone to flooding, causing serious problems for residents and the local authority due to the existing sewer network not being able to cope with the excessive surface water volume.

CASE STUDY

Street

Arundel Gardens

Project

Counters Creek Flood Alleviation Scheme

Client

Thames Water

Application

Source control, attenuation of stormwater and irrigation for bioretention tree pits

Products

Permavoid and Permafilter Geotextile



During rainfall events the Permavoid tanks, will provide storage for large volumes of surface water and restrict the flow in to the existing combined sewer, providing further defence against flooding and encourage biodiversity in what is already an area of London rich with conservation areas.

Arundel Gardens is part of a three-street scheme designed to alleviate flood risk in streets built over the Counter's Creek river system. Monitoring performance on the street will provide evidence to show how joint engineered and soft SuDS systems will provide a viable solution that can be applied across a wider area.

Martin Bennett, Project Director of the Counters Creek Sewer Flooding Alleviation Scheme said:

“The implementation of the SuDS solutions marks an important milestone in the delivery of the wider project which will help alleviate the misery of sewer flooding for local residents.

Together with the proposed storm relief tunnel which will run under both local authority areas, upgrading the existing local sewer network and the SuDS schemes, the ability of the sewer network to cope with heavy rainfall will be greatly improved and we are delighted that in this instance we have been able to work collaboratively to provide such an innovative solution.”

