

World-class Water Management for World Expo

Polypipe Middle East is contributing towards the sustainable construction of Expo 2020 Dubai



Expected to welcome around 25 million visitors, Expo 2020 Dubai will be the first World Expo to take place in the Middle East, Africa or South Asia.

The global mega-event is described as a ‘festival of human ingenuity’ and its theme ‘Connecting Minds, Creating the Future’, is underpinned by three themes which address some of the most pressing issues of the present day: Opportunity, Mobility and Sustainability.

The three themes make up the three Thematic Districts that form the core of the Expo site. It’s here that Polypipe Middle East was selected to provide an at-source SuDS solution utilising Permavoid and has supplied more than 20,000 m² of its geocellular water management system.

Working closely with main contractor Al Futtaim Carillion, the MEP consultant Hoare Lea and the subcontractors Al Shafar United, James L William and Al Futtaim Engineering, Polypipe’s Permavoid geocellular stormwater system was specified due to its ability to work perfectly as a sub-base replacement system. The shallow system – wrapped in geomembrane to make it watertight for attenuation – was strategically placed on the roof of the Opportunity and Mobility pavilions, to control and manage storm and surface water at source and channel it to the units below the surface to create an attenuation solution.

The system comprises of single, interconnected cells which can be installed in the ground as part of sub-base formation. Permavoid is suitable

CASE STUDY

Project

Expo 2020 Dubai

Client

Expo 2020 Bureau & Dubai World Trade Centre Authority

Application

Drainage & Rainwater Attenuation

Products Used

Permavoid, Terrain Above Ground Drainage System, Terrain Below Ground Drainage System & Effast Pressure System

for use in a range of applications including residential, industrial estates, car parks, sports pitches, roofs, basements, pedestrian areas and rainwater harvesting.

Adopting a holistic approach to SuDS allows cities to turn rainwater into a valuable resource. Installing Permavoid on roofs and podium decks can help reduce the strain on sewers, whilst repurposing rainwater can also help lessen the strain on potable water.

90% of the material used to construct the site will be reused or repurposed in the legacy buildings and infrastructure after the event.



In addition to Permavoid, Polypipe Middle East has designed and manufactured several of its other solutions to the exact specification of the Expo 2020 Dubai, including Terrain Above Ground and Terrain Below Ground Drainage Systems and the Effast Pressure System.

Harnessing its 95% void ratio, 20,461m² of Permavoid has been laid across the Thematic Districts, providing 1.65 million litres of stormwater storage.

“We’re thrilled to be working on one of the most significant projects the Middle East has ever seen. One of the three Expo 2020 Dubai themes is Sustainability, which is one of our brand values, so we feel really passionate about the work we are doing to capture and store stormwater at source through the use of Permavoid.”

Lijin Sam, Business Development Manager