

# Polypipe Middle East Tackles Flooding in Dubai with RTA

## CASE STUDY

### Project

UAE Exchange Metro Station

### Client

Road and Transport Authority (RTA)

### Products

Polystorm

### Application

Soakaway

Polypipe Middle East helps create flood-proof roads at UAE Exchange Metro station using sustainable drainage solution, Polystorm.



Dubai is no stranger to storm events, and its consequences can be inconvenient and dangerous. Intense and erratic storms, combined with the city's impervious concrete landscapes, generate overwhelming amounts of surface runoff. However, drain inlets remain clogged with sand, and networks of gutters, pipes and tunnels were never designed to cope with high volumes of stormwater in the first place, so all the excess water is left with no means of escape. The result? Floods, which pose a significant threat to both infrastructure and public safety.

Thankfully, the Road and Transport Authority (RTA) recognised the importance of prevention in order to minimise flood damage. The RTA turned to experts in urban water management, Polypipe Middle East, to address the issue of inadequate stormwater drainage surrounding the UAE Exchange Metro station in Dubai. With their expertise, Polypipe worked with the RTA to develop a holistic water management solution.

Polypipe Middle East worked closely with lead consultant, Mott MacDonalds,

and MEP consultant, Atkins for this project, supported by main contractor, ASGC, and MEP contractor, Hills and Fort Construction LLC. Together, all teams collaborated to deliver a water management solution designed to meet the specific needs of the railway project. The collective approach required thought beyond flood management, and involved consideration of supporting infrastructure such the construction of new roads and the diversion of existing underground utilities to ensure a seamless experience for city residents.

## UAE Exchange Metro Station

The UAE Exchange Metro station and its surrounding area suffer from flooding. The area has limited access to water networks, amplified by a low soil filtration rate. Consequently, Polypipe Middle East recommended an alternative approach to managing stormwater with traditional concrete storage tanks.

Polystorm (PSM1) was selected as the best solution to minimise flooding and provide a variety of benefits when it comes to installation, price and environmental impact. Polystorm is a versatile, geocellular water management system, designed for both trafficked and non-trafficked applications. Each cell has a 95% void ratio for maximum water capture and retention. The tanks are lightweight yet robust, which makes them quick and easy to transport and install, significantly reducing related costs when compared with traditional concrete tanks.

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The Polystorm tanks were installed above water table level, near the metro station's surrounding roads. They sit below the surface, collecting water runoff channelled from roads, rainwater outlets and surface drains. Instead of this water running directly into sewer systems as waste and causing them to flood, the collected water can be reused for irrigation or other sustainable purposes. The tanks were installed to collect stormwater and surface water runoff from the roads in gullies, through which the water is collected in a basin then transported back into the Polystorm tanks to infiltrate into the ground. They are sized for large storm events so that they can be effectively used for infiltration, eliminating the need to connect to the main network.





## UAE Exchange Metro Station

Designed specifically for the extreme and unpredictable weather events native to the region, Polystorm provides a sustainable urban flood management strategy that can ensure the metro station and surrounding area is well-prepared for rainfall. The tanks supplied were fully compliant with RTA's specifications and were provided quickly in the short time frame allocated.

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Polypipe Middle East's provision of expert technical advice, sustainable urban drainage solutions, efficient installation, and professional service, has enabled successful water management and in turn contributed to the creation of safe and healthy spaces for people of the UAE.

To find out more about our bespoke, fit-for-purpose solutions, contact our technical team and arrange for a stormwater strategy presentation now.

