

# Revolutionising Flood control: Polypipe Middle East's solution for the Valley.

## CASE STUDY

### Project

The Valley

### Client

Emaar Properties

### Lead Consultant

Parsons

### Main Contractor

Hills and Fort Construction

### Application

Infiltration / Soakaway

### Product

Polystorm - PSM1



A cost-effective and compliant stormwater drainage solution for Emaar's latest residential development.

The Valley is a gated community developed by Emaar Properties, a global leader in upscale real estate. Combining lush green landscapes and expert architectural design, The Valley was developed with family-friendly living at its core. In addition to state-of-the-art leisure facilities – including a desert-friendly botanical garden – The Valley provides educational options and healthcare services, making it a truly self-contained community in the peaceful suburbs of Dubai. The Valley's master plan was also crafted to align with Emaar

Properties' continued commitment to innovative, safe and sustainable real estate development, with occupant well-being a key priority – values which it shares with Polypipe Middle East. Polypipe Middle East joined the project at a critical juncture in its progress. Given the project's tight timeline, there was an urgent need for an infiltration solution that not only met stringent specifications but could also be swiftly implemented. The contract for this project was secured through Parsons, the Lead Consultant, and Hills and Fort Construction, the Main Contractor. Key personnel from both entities had prior positive experiences with Polypipe Middle East, being impressed not only by the

quality of its products but also by the compliance of its proposed solution – **Polystorm** – with the project's specifications.

Although Dubai's climate may be perennially hot and arid, when it does rain, it pours. However, due to infrequent use throughout much of the year, existing stormwater drainage systems tend to become obstructed with sand, making floods a frequent and costly occurrence. It was therefore essential for The Valley to ensure that a fully compliant drainage solution was in place, for the safety and well-being of both the site and its community.



Polypipe Middle East worked with Hills and Fort Construction and Parsons to install Polystorm beneath the site to aid infiltration. Infiltration systems such as Polystorm play a crucial role in facilitating the drainage of excess rainwater back into the soil, preventing stagnation on the surface or the formation of runoff. Not only does this help to prevent flooding and reduce the strain on drainage systems, but it also helps to replenish Dubai's rapidly diminishing water table. In this instance, a Polystorm tank capable of storing an impressive 4,260,000 litres of water was installed.

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When a company chooses to partner with Polypipe Middle East, they benefit from more than a client-supplier relationship; they are also guaranteed a strategic partnership. Polypipe Middle East works openly and efficiently with each of its clients, to provide bespoke solutions that ensure optimal outcomes on every project.

In this instance, Polypipe Middle East went above and beyond to deliver a safe and sustainable solution for the client, on time and within budget. Initially, considering the soil report and stormwater design, the recommendation leaned towards adopting a more robust solution, namely **Polystorm Deep**. This particular product stands out for its ability to be buried deeper than any other Polystorm cell and its capacity to withstand heavier loads, particularly suitable for high-traffic areas. However, since Polystorm Deep comes at a higher cost, and given the time constraints, we worked alongside the consultant and contractor to suggest an alternative, yet equally as effective solution, which combined Polystorm geocells with aggregate.



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This combined approach provided an ideal balance of value and long-term suitability. Although aggregate is a cost-effective solution, its ability to store water is limited. Each Polystorm geocell, on the other hand, features a 95% void ratio, enabling it to store up to 190 litres of stormwater. In addition, they are also lightweight and easy to install, making them ideal for a project on a tight timeframe. This meant that we were able to deliver a solution that complied with the design, specifications, and performance requirements, ensured effective stormwater management, and still came in on budget.

From design to installation and beyond, Polypipe Middle East works strategically and collaboratively to ensure a smooth process and lasting partnerships. And for The Valley, Polypipe Middle East's bespoke structural tools and vast experience in sustainable drainage systems ultimately saved both time and money. However, most importantly, it also meant that we were able to guarantee the most effective stormwater management solution for the long-term safety and well-being of The Valley's wider community.

