

From Roof to Oasis: Smart Stormwater Solutions for Rosewood Amaala Resort

CASE STUDY

Project

Rosewood Resort
Triple Bay, Amaala

Location

Tabuk, Saudi Arabia

Client

Amaala

Lead Consultant

DSA Architects International

Main Contractor

Isam Khairi Kabbani Group

Sector

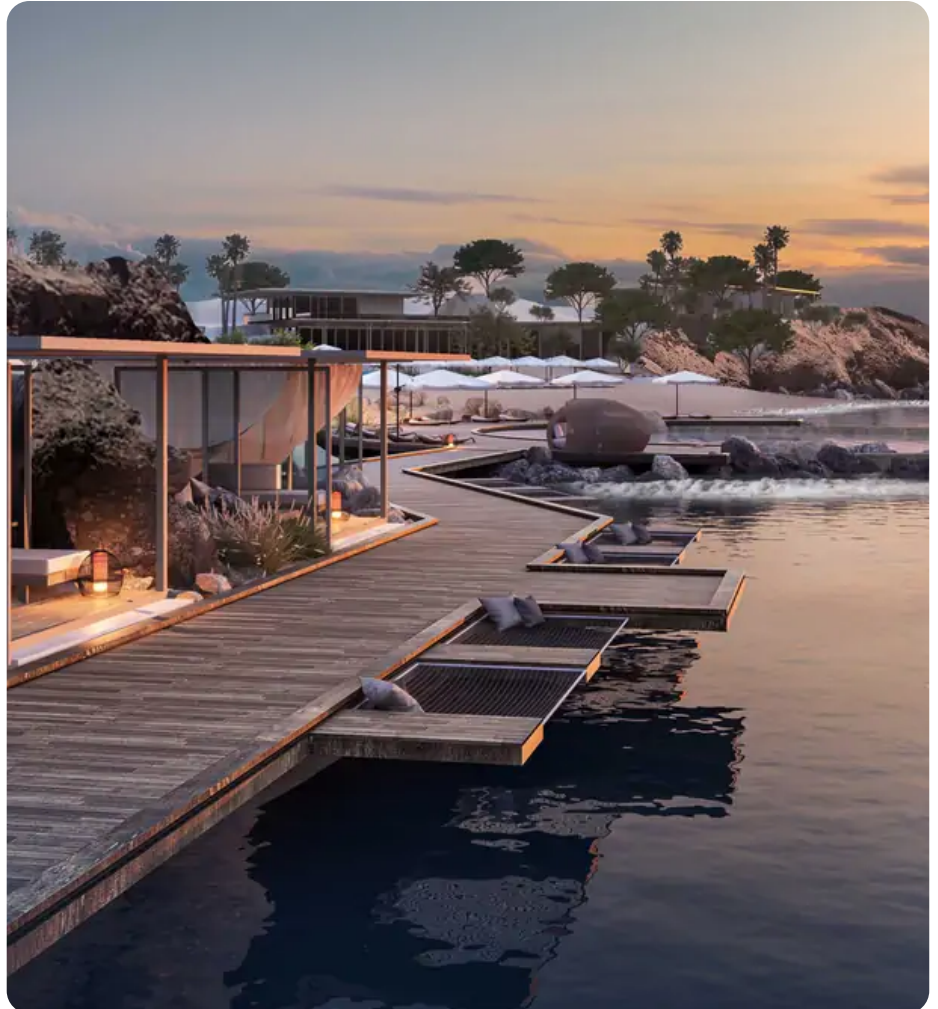
Residential/Mixed-Use

Products Used

Permavoid 85

Application

Blue Roof/Water Detention



The Rosewood Amaala Resort, located in the breathtaking Triple Bay region of Tabuk, Saudi Arabia, is a landmark project that exemplifies the fusion of sustainable innovation and luxury hospitality. Developed by Amaala and designed by DSA Architects International, the resort is part of a broader vision to redefine ultra-luxury tourism in alignment with environmental stewardship. With a project value of USD 120 million, the resort is designed to set new standards in environmentally conscious development.

The resort will feature 110 guest rooms and suites, along with 25 branded luxury residences, all spread across a total built-up area of 50,500 m². The development is committed to operating entirely on renewable energy and aims to achieve a zero-carbon footprint, with a strict zero-waste-to-landfill policy. This commitment to sustainability is reflected in every aspect of the project, from its architectural design to its infrastructure solutions.

One of the most distinctive features

of the Rosewood Amaala Resort is its approach to water management.

With 9,580 m² of blue roof installed, Rosewood Amaala sets a new benchmark for sustainable luxury.



The client, Amaala, sought to implement a system that would allow for the reuse of rainwater sustainably on-site, an important component to help support the LEED Platinum certification of the Amaala masterplan. However, the project faced a significant challenge: the limited availability of space for traditional urban water infrastructure. This constraint required an innovative solution that could integrate seamlessly into the resort's design while delivering high-performance results.

To address this challenge, Polypipe Middle East technical team implemented a rooftop water retention system using Permavoid 85, a shallow, modular tank system designed for on-building water storage, attenuation, and passive irrigation. A total of 9,580 m² of Permavoid 85 was installed across the roofs of 17 buildings within the resort. The system, wrapped in a geomembrane to ensure watertight attenuation, enables the capture and reuse of rainwater for landscape irrigation and other site needs. This approach not only supports the resort's sustainability goals but also mitigates the risk of flooding by managing stormwater at the source.

Permavoid 85 enabled us to turn rooftops into reservoirs, supporting LEED goals without compromising design.

Permavoid 85 was chosen for its unique combination of technical performance and adaptability. The system functions as a sub-base replacement, allowing it to be installed in shallow rooftop spaces where conventional infrastructure would be impractical. Its design enables efficient water attenuation and storage directly on the building. The modular structure of Permavoid 85 allows for flexible installation across varied roof geometries, and its watertight configuration ensures reliable performance in stormwater control. These features made it the ideal solution for a project that demanded both environmental responsibility and architectural elegance.

The success of this solution was made possible through close collaboration with key stakeholders throughout the project lifecycle. During the early design phase, Polypipe Middle East worked closely with Egis, the MEP consultant, to integrate the Permavoid system into the project's infrastructure. This was followed by detailed coordination with DSA Architects to ensure the system was fully embedded within the architectural package. During the execution phase, Polypipe Middle East team supported the main contractor, Isam Khairi Kabbani Group, by ensuring the timely delivery of materials within a tight two- to three-month timeframe. Coordination with the client, Red Sea Global (RSG), ensured that the final design met all sustainability and performance specifications.

One of the key differentiators in this project was the decision to manufacture Permavoid 85 locally in the UAE. This strategic move significantly reduced both cost and lead time, enabling the contractor to meet the client's demanding schedule. The ability to deliver a high-quality, technically suitable solution within a compressed timeline was a major factor in the project's success. It also underscored the value of regional manufacturing in supporting sustainable construction practices.

Permavoid 85 was selected not only for its technical capabilities but also for its alignment with the project's environmental objectives. The system acts as a sub-base replacement that facilitates on-building water storage and passive irrigation, making it an ideal choice for projects with limited space for conventional infrastructure. Its use in the Rosewood Amaala Resort demonstrates how innovative engineering can support ambitious sustainability goals without compromising on design or functionality.



Rosewood Resort Triple Bay, Amaala

This project builds on a proven track record of successful Permavoid installations in the region. Similar systems have been deployed at Jumeirah Living Marina Gate in Dubai and at Expo 2020 Dubai, where over 20,000 square meters of Permavoid were used across the Opportunity and Mobility Pavilions and in planters, providing a total stormwater storage capacity of 1.65 million litres.

The Rosewood Amaala Resort stands as a testament to what can be achieved when visionary design meets practical innovation. By transforming rooftops into functional water management systems, the project not only enhances the resort's sustainability credentials but also sets a new benchmark for environmentally conscious luxury developments in the region.



Talk to us early in the project

We can help you find the right combination of shallow and deep systems to deliver considerable project cost savings while ensuring long-term performance and compliance.



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