

Smart Retaining Walls for Resort Ramps

Jumeriah Gulf of Bahrain Resort & Spa

Kingdom of Bahrain

CLIENT'S CHALLENGE

The client envisaged a ramp retaining wall system extending along both sides of the carriageway leading to the hotel. The primary requirement was to achieve a solution that is not only structurally robust, but also aesthetically appealing, harmonising with the hotel's architectural character and surrounding environment.

TENSAR SOLUTION

The TensarTech® TW1-ME Wall system was adopted to deliver the reinforced soil structures combining structural integrity with visual appeal. The system provided high stability and durability, with aesthetically pleasing facing option, while accommodating utilities and barrier loads within the reinforced zone, enabling efficient load transfer and seamless integration with the resort landscape.

B E N E F I T S

- **Aesthetic wall facing system** which blended with the resort landscape
- **Reduced construction time**, compared to conventional reinforced concrete walls
- **Accommodated utility services** without compromising structural integrity

Tensar®

A Division of CMC

PROJECT DETAILS

Application

Earth Retaining Walls | No. 572

Constructed in

2019

Client

Al Sahel Resort a.s.c (Edamah)

Consultant

JC Geotechnics

Main Contractor

Charilaos Apostolides (Bahrain) W.L.L

Tensar Distributor

Pioneers of the Middle East Bridges and Tunnels Maintenance LLC-OPC

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PROJECT BACKGROUND

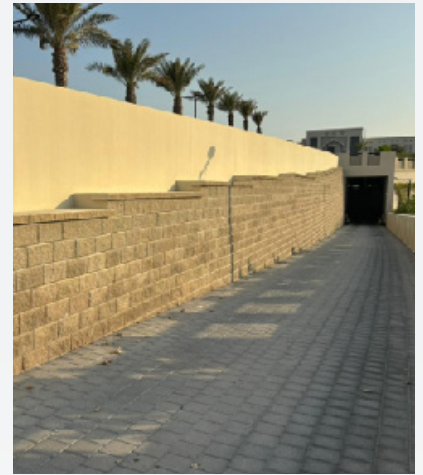
The Jumeirah Gulf of Bahrain Resort & Spa (previously known as 'Sahel Resort') is a flagship five-star beachfront development located at Al Jazayer Beach on Bahrain's southwest coast. Developed by Edamah, the real estate arm of Bahrain Mumtalakat Holding Company, the project was conceived to enhance Bahrain's tourism infrastructure and establish a world-class luxury destination.

Given the challenging site topography and architectural requirements, the development incorporated retaining structures, particularly along the ramped access road leading to the resort. The retaining wall system was required to support the carriageway, accommodate utilities, integrate barrier loads and provide an architectural finish consistent with the surrounding resort environment. To satisfy these requirements, the TensarTech® TW1-ME Wall system was selected. This mechanically stabilised earth (MSE) solution combines long-term structural stability, efficient construction, and architectural flexibility.

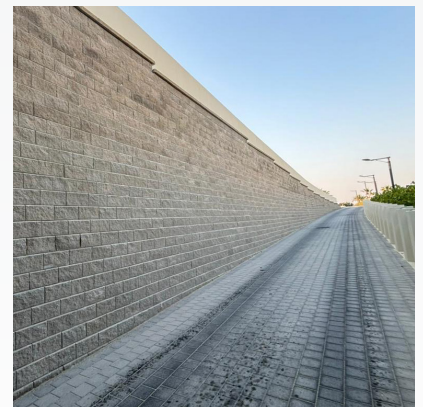
For this project, well-graded granular fill material was incorporated within the reinforced soil zone to ensure adequate drainage, compaction, and overall structural performance.

The TensarTech® TW1 Wall System comprises of mortarless concrete facing units, high-performance Tensar geogrid reinforcement, and a proprietary connector. The system can be designed with nominal face angles of 86°, 88°, and 88.9°, enabling it to accommodate a wide range of geometric and architectural requirements. Owing to its proven structural performance and versatility, the system is suitable for a broad range of applications, including highway and transportation infrastructure, marine and waterfront developments, commercial projects, and residential or resort communities where both functionality and visual appeal are key project requirements.

Completed in 2022, the Jumeirah Gulf of Bahrain resort stands as a landmark development, successfully integrating engineering performance with architectural excellence.



Tapered TensarTech® TW1-ME retaining walls on either side of the hotel access ramp, accommodating changes in grade while maintaining a consistent architectural finish.



TensarTech® TW1-ME retaining wall providing effective grade separation and a high-quality architectural finish along the resort entrance ramp



TensarTech® TW1 system provides a positive mechanical connection between the geogrid reinforcement and facing units, improving load transfer efficiency, connection integrity, and the long-term structural performance of the reinforced soil structure

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