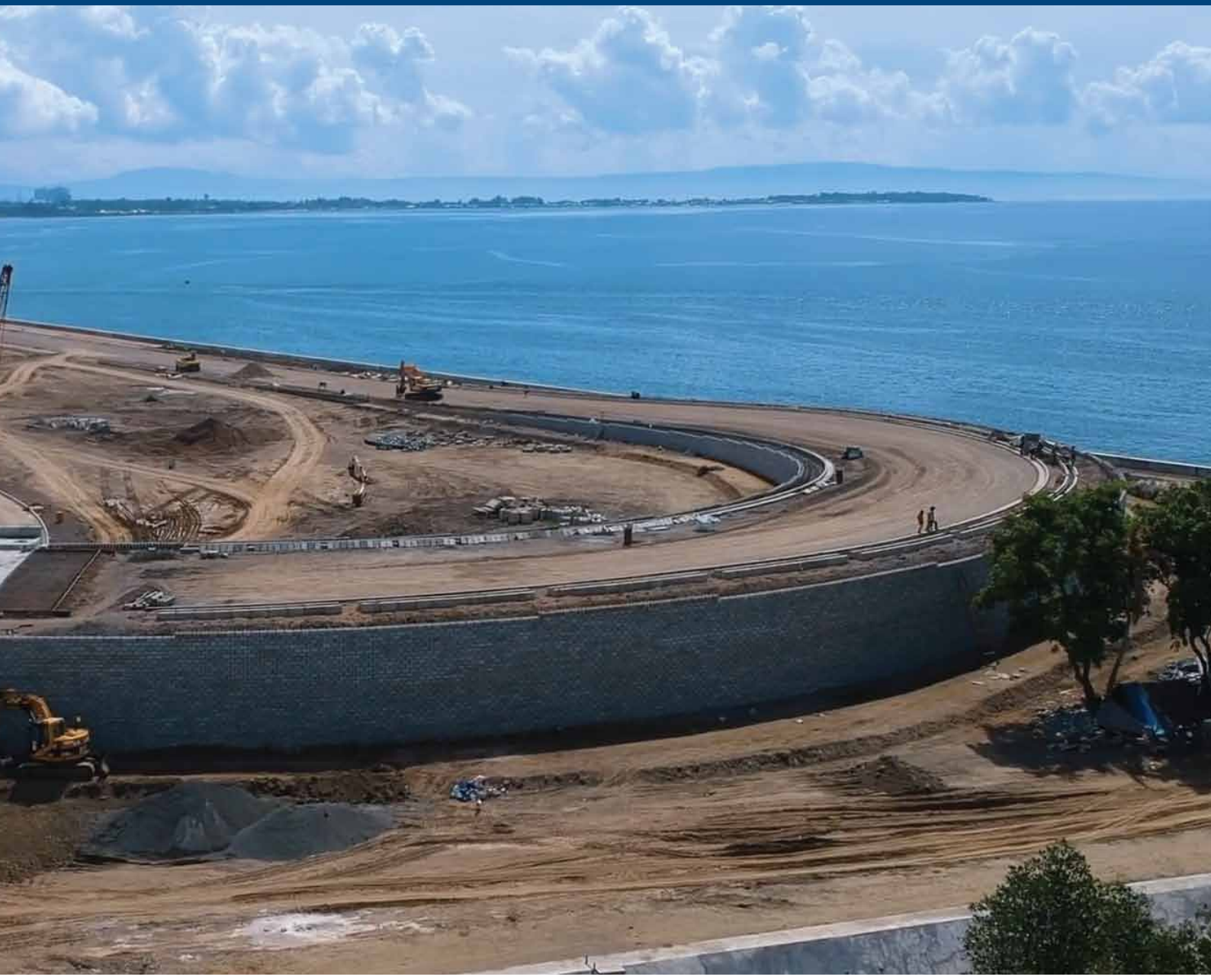
TENCATE Miragrid®

CASE STUDY

Segmental Block Retaining Wall at Davao City Coastal Road, Philippines



TENCATE GEOSYNTHETICS

TENCATE Geotube®

CASE STUDY

Miragrid® GX Geogrid – Segmental Block Retaining Wall at Davao City Coastal Road, Philippines

Project Data

Project	:	Davao City Coastal Road Bago-Aplaya Section - Segmental Block Retaining Wall
Year of construction	:	2017
Client	:	Department of Public Works and Highways – Region XI.
Material	:	TenCate Miragrid® GX Geogrid

The Challenge:

The Davao City coastal road bypass project will traverse from Roxas Avenue to Bago Aplaya, cutting through NHA Kadayawan Homes, Matina Aplaya, and Bolton Isla. Three roundabouts (or rotundas) will be installed in the 35-kilometer coastal stretch at Roxas Avenue, Times Beach area, and Matina Aplaya.

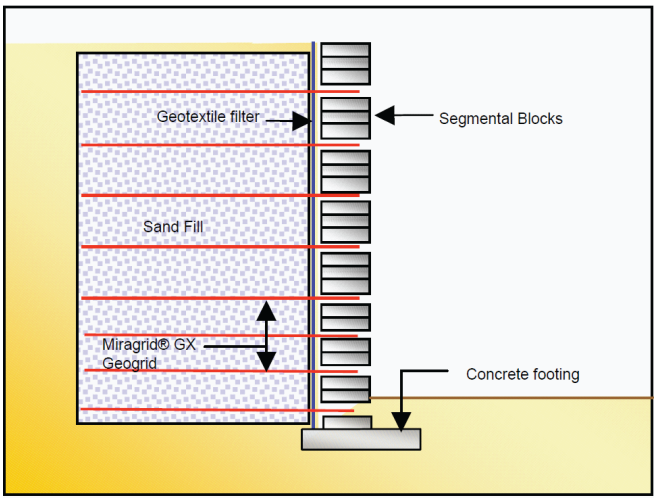
The increasing population and continuous development of the Davao Region has led to the worsening traffic congestion within its major roads. The coastal road project is expected to abate and address the traffic congestion within the city.

The Bago-Aplaya Section facing Davao Gulf towards Talomo is an elevated highway with a 90 degree vertical slope on both sides. The contractor required the embankments to be stabilized and reinforced effectively.

Overview of the installed segmental block wall system

The Design:

Segmental block wall reinforced with TenCate Miragrid® GX geogrid was chosen as the final design of this project for its fast, durable and cost effective construction. Miragrid® GX geogrid has the properties required for long term reinforcement applications with its high tensile strength at low elongation, low tendency to creep and low installation damage. Its interlocking mechanism and connection capacity to block wall systems are superior.



Typical section of the segmental block wall reinforced with TenCate Miragrid® GX Geogrid

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The Construction:

The reinforced segmental block wall system consisted of precast concrete blocks stocked to form the wall facing. The soil/sand backfill behind it was reinforced with Miragrid® GX geogrid. The blocks were moulded with an interlocking mechanism that allowed them to firmly interconnect. The geogrid reinforcement was laid horizontally on the soil backfill, and was then connected to the concrete blocks via the interlocking mechanism at specific design heights of the wall.

The Performance:

With Miragrid® GX, the construction of the reinforced segmental block wall system provided a relatively flexible structure that could tolerate differential settlement without causing distress to the structure. The objectives of stabilization and reinforcement was not only achieved, construction of the reinforced wall was also timely and cost effective.

Overview of the completed elevated highway at Bago-Aplaya entrance of the Davao City Coastal Road Project

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