Reinforced Soil System in Consolacion Cebu

Tugbongon, Consolacion, Cebu

Project Completed

TYPE OF PROJECT	YEAR OF CONSTRUCTION	CLIENT	CONTRACTOR	DESIGNER
Reinforced Soil Walls And Slope Reinforcement	**2024**	**Castille Resources Realty Development Inc.**	**Castille Resources Realty Development Inc.**	

PROD. RELATED

Biaxial Geogrids (Macgrid), PET Woven / Composite Geotextiles (Macbag)

Challenge

The municipality of Consolacion in Cebu has long dealt with steep and unstable slopes that pose serious risks to both nearby communities and ongoing development projects. The combination of loose soil, high rainfall, and continuous human activity created conditions that were highly susceptible to erosion and slope failure. Without proper intervention, these vulnerable slopes could have triggered landslides capable of damaging critical infrastructure, endangering lives, and slowing down planned developments in the area. The potential consequences extended beyond immediate safety concerns; unchecked erosion would have required repeated repairs, hindered economic growth, and undermined the long-term sustainability of the community. With rapid urbanization in the region and the pressing demand for secure land development, a durable and environmentally responsible solution was necessary to stabilize the terrain and safeguard both residents and infrastructure.

Aerial View

Aerial View

Solution

To resolve this challenge, Maccaferri engineers designed and implemented a Mechanically Stabilized Earth (MSE) Wall tailored to the site's demanding conditions. The system incorporated MacGrid® WG woven polyester geogrids, which provided soil reinforcement and improved load-bearing capacity. A wrap-around construction method, combined with the use of MacBag® Soil Bags, was applied to create a strong yet flexible retaining structure. To further enhance performance, geocomposites were installed to manage pore water buildup, reducing hydrostatic pressure and ensuring long-term stability of the wall. This integrated approach delivered multiple benefits: it offered reliable slope stabilization, controlled erosion, and provided an environmentally friendly finish by supporting vegetation growth on the surface. Additionally, the modular and cost-effective design made it adaptable to the challenging terrain while keeping construction efficient. The completion of this reinforced soil wall transformed what was once a high-risk slope into a resilient, sustainable structure that now protects both nearby communities and developments. By combining advanced geotechnical engineering with ecological considerations, the project showcases Maccaferri's commitment to delivering solutions that achieve safety, functionality, and harmony with the environment.