MACCAFERRI

CASE HISTORY

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FLOOD CONTROL STRUCTURE AT BUCAO RIVER NORTH APPROACH DOWNSTREAM

BOTOLAN, ZAMBALES, REGION III, PHILIPPINES

Longitudinal Protection

Problem

Botolan, Zambales, known for its stunning grey sand beaches and proximity to Mount Pinatubo, has face significant challenges since the volcano's eruption three decades ago. The eruption deposited excessive sediment, leading to shoreline progradation and heavily silted Bucao River channels. This siltation has severely reduced the river's capacity to handle water flow efficiently, making it prone to overflowing during heavy and prolonged rainfall. The resulting floods pose a serious threat to nearby communities, endangering homes, businesses, roads, and vehicles, and often necessitate emergency evacuations to protect lives.

Solution

To address the flood risk, the Department of Public Works and Highways (DPWH) Regional Office III implemented an innovative solution using MacTube® geotextile tubes for the core material of the Bucao River's revetment structures. These large, UV-resistant geotextiles were filled with sand dredged directly from the Bucao River, eliminating the need for external sourcing and significantly reducing project costs and environmental impact. The filled tubes were strategically placed along the riverbanks to create a stable barrier against erosion. Additionally, MacTex W1 and MacTex PN were used to enhance the structural integrity of the revetment.

This approach not only provided a sustainable solution but also demonstrated cost efficiency and environmental responsibility. The project was successfully completed within four months, from 1 September to 30 December 2023, ensuring enhanced flood protection for the communities along the Bucao River.

Client: Grace Construction Corp - Nicledon Construction JV

Designer / Consultant: DPWH Regional Office III

Contractor: Grace Construction Corp-Nicledon Construction

Products used (Qty.)

- PP/PE Woven Geotextiles	MacTex W1 4 rolls
- Synthetic Marine Solutions	MacTubes 13pcs
- Nonwoven Geotextiles	MacTex PN 5 rolls

Date of construction: 09/2023 - 12/2023

Google Maps Google Earth



During Installation



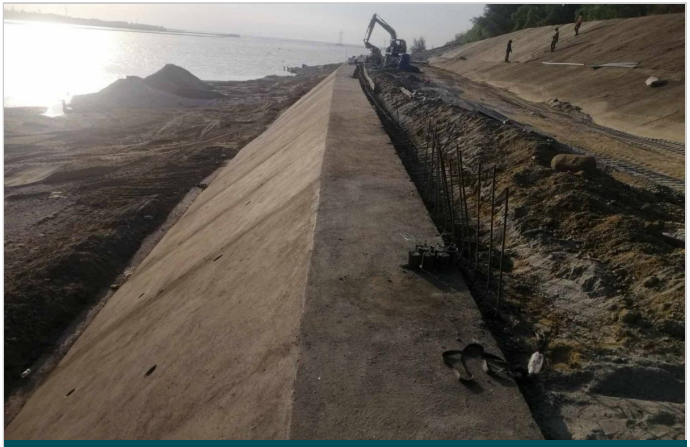
During Installation



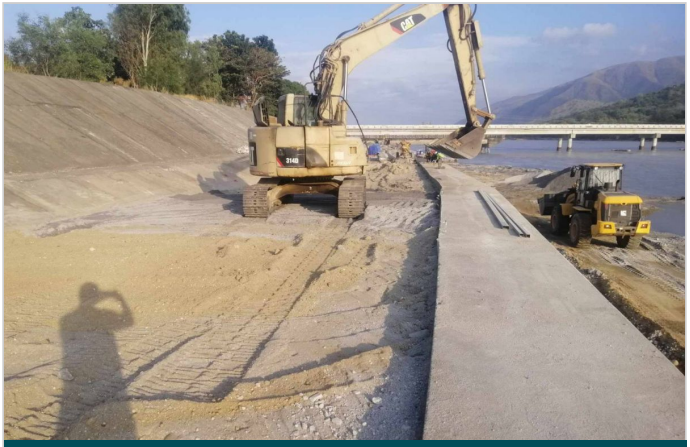
During Installation



During Installation



Completion



Completion

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