MACCAFERRI

CASE HISTORY

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CONSTRUCTION OF SPILLWAY FACILITIES FOR PONDOK RANGGON RESERVOIR

DKI JAKARTA, JAKARTA TIMUR, INDONESIA

Slope Protection

Problem

Some parts of the Embung Pondok Ranggon slopes have experienced erosion due to heavy rainfall, uncontrolled water flow, and a lack of protective vegetation. This condition threatens the stability of the reservoir, increases the risk of landslides, and reduces storage capacity due to sediment accumulation. If left unaddressed, the reservoir will lose its function as a flood control system, irrigation water storage, and groundwater conservation.

Revitalization is needed to strengthen the reservoir structure, reduce sedimentation, and maintain water quality. Additionally, this improvement will enhance the area's aesthetics, which serves as a Green Open Space (GOS), creating a safer, more comfortable, and sustainable environment for the surrounding community.

Solution

Revetment Protection System is applied along the slopes of Embung Pondok Ranggon to prevent erosion and landslides that could compromise its stability. This system uses permeable and flexible materials, allowing water to absorb naturally, reducing hydrostatic pressure, and adapting to ground shifts or water level changes.

It also protects against scouring, especially at the inlet, by evenly distributing water flow and minimizing erosion. Additionally, the system’s durable materials withstand extreme environmental conditions, ensuring long-term effectiveness with minimal maintenance. This solution enhances flood control, preserves water storage capacity, and maintains the area's function as a safe and sustainable Green Open Space (GOS).

Client: Dinas Sumber Daya Air DKI Jakarta

Designer / Consultant: PT Hayana Mandiri Konsultan

Contractor: PT Kusuma Jaya Internusa

Products used (Qty.)

- Terramesh	310 units
- Reno Mattress Plus	255 units
- Gabions	1940 units
- Drainage Geocomposites	438,750 m2

Date of construction: 07/2024 - 11/2024

Google Maps Google Earth



Before Installation



Installation Process



Finished Construction

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