

AYAMARU LAKE EMBANKMENT IN SORONG, WEST PAPUA

SORONG, WEST PAPUA, INDONESIA

Weirs, Culverts and Transverse Structures

Problem

Lake Ayamaru is situated in the Ayamaru District, Maybrat Regency, Sorong City, West Papua. The lake plays a crucial role as a life source due to its abundant water, meeting the district's needs, serving as a transportation route between districts, and contributing to the tourism sector.

The Ministry of Public Works and Housing is revitalizing Lake Ayamaru with the construction of spillway 1B. Once spillways 1A and 1B are operational, the river's flow will be redirected through a structure, causing the water level of Ayamaru Lake 1 to rise by 1.5 to 2 meters from the normal level. As a result, the land around the upper part of Lake Ayamaru 1 will be flooded, leading to issues such as submerged connecting roads between villages and social problems.

A protective embankment is needed between spillway 1A and 1B to address this. This embankment will act as a barrier and collector of water from the lake, Ayamaru River, and its tributaries. The water will be directed to a dam structure and then released through the spillway towards Lake Ayamaru 2.

The protective embankment will safeguard the land downstream, protecting the properties of residents. Additionally, this embankment has the potential to enhance the beauty of Lake Ayamaru, which is currently a natural tourist attraction.

For the initial plan, concrete will be used as the embankment cover. However, the required cost is quite high, necessitating an alternative that is more cost-effective and efficient in terms of implementation. Maccaferri Indonesia proposes the use of Reno Mattress Plus as a solution for covering the embankment in Ayamaru Lake.

Solution

Maccaferri proposes a reliable solution by using Reno Mattresses Plus as a substitute for concrete to cover the embankment in Lake Ayamaru. The designed lining system provides continuous protection with 30 cm thick Reno Mattresses Plus placed on nonwoven geotextile with a separation function.

Reno™ Mattress Plus is a flexible, non-rigid, and permeable material, allowing it to adapt well to the contours of the submerged base without compromising its structural function. Reno Mattresses Plus has proven to be a valid alternative to traditional lining systems used in Indon

Client: MINISTRY OF PUBLIC WORKS

Designer / Consultant: PT Wahana Krida Konsolindo

Contractor: PT Batu Lobo Sentosa

Products used (Qty.)

- Reno Mattress Plus 1030 units

Date of construction: 06/2023 - 11/2023

[Google Maps](#)

[Google Earth](#)



Before Construction



Construction Work



Construction Work



Finish Construction



Finish Construction