

MWCI RESERVOIR

SAN RAFAEL, RODRIGUEZ, RIZAL, REGION IV-A, PHILIPPINES

Mass Gravity Retaining Walls

Problem

In line with the Manila Water Company Inc.'s extensive water supply infrastructure improvement, a 250,000 gallon-capacity water reservoir was designed. BC Cuerpo Construction Corporation, the general contractor of the project, initially planned to build a concrete gravity wall as a retaining structure on portions immediate to the location of the new water reservoir. The facility is adjacent to a river, where which floodwaters could directly damage the facility if not protected.

Solution

Maccaferri engineers recommended two wall systems due to project requirements and space limitations. One of the systems involved a gabion gravity wall placed along the upstream of the reservoir's intake to hold curing tanks, machine room, and other equipment. The other wall system featured Maccaferri's Terramesh System with MacGrid woven polyester geogrid as components for a mechanically-stabilized earth (MSE) wall system. The MSE wall was located along the downstream area to secure the 250,000 gallon capacity water reservoir. Gabion mattresses, 0.5 meter in thickness, were placed at the base of the intake structure for additional resistance against scouring due to the possible impact of floodwaters from the adjacent river.

The proposed solution was found to be more advantageous than other wall systems for its flexibility, drainage capability, and structural soundness. Moreover, the wall systems were further proven to be more economical and were constructed just on time as scheduled.

Client: Manila Water Company, Inc.

Designer / Consultant: BC Cuerpo Construction Corporation

Contractor: BC Cuerpo Construction Corporation

Products used (Qty.)

- Gabion	1,930 cu.m. Zinc Coated
- Terramesh	356 sq.m
- MacGrid WG	2,800 sq.m
- MacTex Non-woven Geotextile	4,000 sq.m.

Date of construction: 03/2007 - 04/2007



Before Construction



During Construction



Project Completed



Project Completed