

CRUSHER WALL AT INDOCEMENT FACTORY JAKARTA, JAKARTA, INDONESIA

Reinforced Soil Walls and Slope Reinforcement

Problem

Indocement factory is located in the South of Jakarta and it is the second largest cement producers in Indonesia.

The Client needed a flexible retaining structure to be connected with the existing concrete vertical wall used as crusher wall. The total soil height to be retained was approximately 14m. The area is characterized by a high seismicity level and an horizontal seismic acceleration equal to 0.23g had to be considered in the design process. Another constraint of the project was the maximum available space behind the new retaining structure which was equal to 13m.

The client took into consideration in the first place a mass gravity retaining wall made with gabions.

Solution

After a comparison in terms of cost and construction timing, the Client opted for the construction of an Hybrid Reinforced Soil Wall combining metal reinforcements to ensure the facing stability (Terramesh System) and polymeric grids as primary reinforcing elements to ensure the global and the internal stability of the wall (MacGrid WG).

Terramesh System is a modular system used for soil reinforcement made of pre-assembled units fabricated with double twisted wire mesh 8x10 made of Galfan (Zn-Al5% alloy) and PVC coated steel wire.

The units are provided during the manufacturing process with a double twisted metallic tail (secondary reinforcement).

MacGrid WG is a Woven planar geogrid manufactured from high tenacity PET yarns coated with PVC in order to maximise its durability. The geogrid grade used was equal to 150kN/m. The vertical spacing of the geogrids as well as their length have been calculated using the Maccaferri Limit Equilibrium Method in-house software (MacStars W 4.0). Both static and seismic analysis have been performed, checking global stability, internal stability and stability as retaining wall (sliding, overturning and bearing capacity). The construction of the wall took approximately 2 months.

Client: PT INDOCEMENT

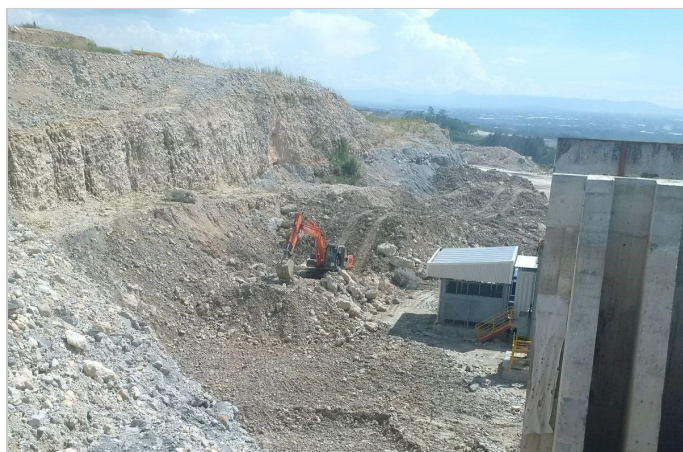
Designer / Consultant: PT INDECO PRIMA / PT MACCAFERRI INDONESIA

Contractor: N/A

Products used (Qty.)

- Terramesh	N/A
- MacGrid WG	N/A
- MacTex Non-woven Geotextile	N/A

Date of construction: 05/2015 - 06/2020



Site Condition Before Construction



Installation of the filtering geotextile for the drainage system



Stones as draining material; Corrugated collecting pipes



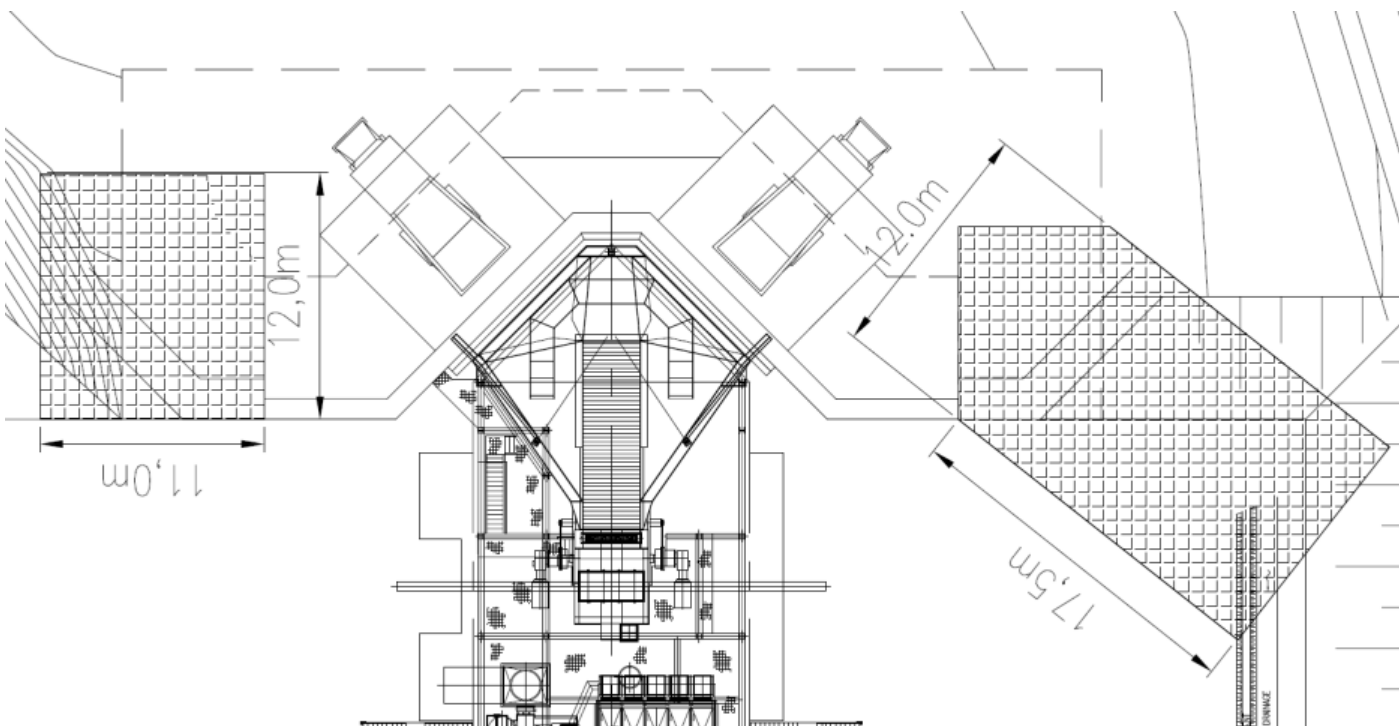
Terramesh System installation



Laying MacGrid WG 15



Wall after Completion



Project Layout

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