MACCAFERRI

CASE HISTORY

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SMRITIVAN EARTHQUAKE MEMORIAL

BHUJ, GUJARAT, INDIA

Landscape Architecture

Problem

The Smritivan Earthquake Memorial, near Bhuj, in the state of Gujarat, was built to commemorate the departed souls in the 2001 Gujarat earthquake. Smritivan project was conceived by Prime Minister Sh. Narendra Modi, who was the Chief Minister of Gujarat during that period. The project site comes in the seismic zone V.

The architect Vastushilp Consultant was looking for an aesthetically pleasing, flexible, durable, eco-friendly solution having permeable check dams/ step wells with its own rainwater based irrigation system.

Solution

Maccaferri was involved in the supply, design and supervision of double twisted, mechanically woven gabions structures for the project. Gabions designed were of four different types: 2x1x1: 15,533 no; 1.5x1x1: 5,426 no; 2x1x0.75: 2466 no; 2x1x0.5: 4,488 no; 3x1x0.5: 1,896 no.

The work consisted of construction of reservoir, sun point, pathway, landscape and plumbing. The shape of step wells was designed in such a way that it blends with nature. All 52 step wells are interconnected with each other. One tree will be planted for each earthquake victim, and will be irrigated by check dams that store rain water.

The construction had major challenges. The project site at Bhujiyo Hill, Bhuj, Rann of Kutch is highly seismic. Hence, structures were designed considering this aspect.
Also the site was prone to aggressive environment as Bhuj lies in coastal belt. For the first time in India, Galmac + polymer coated gabions were used to avoid/reduce corrosion effect.

As this was an architectural monument, utmost precision has been taken during execution and installation of gabions to ensure quality. Stones were chiselled before placing inside the gabion boxes. In order to make 0.15m thick gabion steps, gabions were fabricated at site itself under the guidance and technical supervision of Maccaferri.

Gabions were the perfect solution for the proposed site due to its advantageous characteristics like:
1. Cost Effectiveness.
2. Simplicity in Construction.
3. Flexibility.
4. Durability.
5. Drainage and permeability.
6. Environmental compatibility as it allows vegetation to grow.
7. Can be combined easily to create complex geometric forms.

Client: Gujarat State Disaster Management Authority / R&B Bhuj

Designer / Consultant: Maccaferri / Prof V.R. Shah

Contractor: Katira Construction Ltd

Products used (Qty.)

- Gabion 29,809 nos

Date of construction: 06/2013 - 03/2015

Photo 1: Series of check dams under construction

Photo 2: Completed structure

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Photo 3: Completed structure

Photo 4: Completed structure

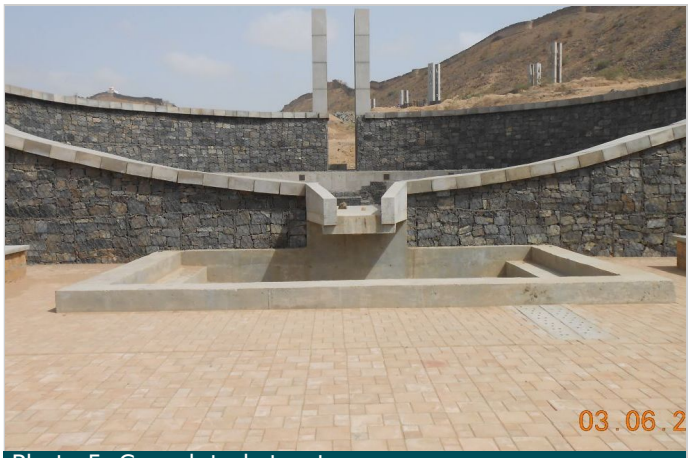
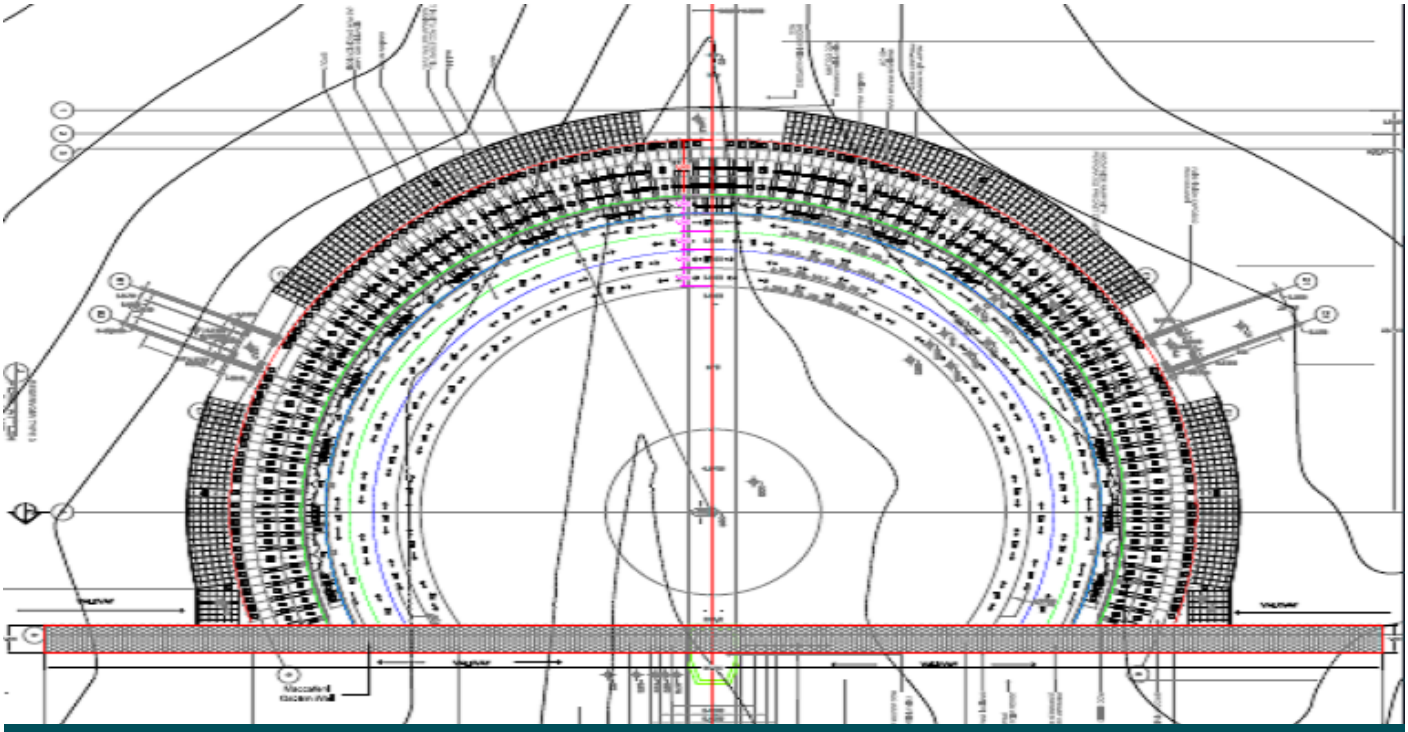


Photo 5: Completed structure

Photo 6: Completed structure



Cross sectional drawing

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