

SABARMATI RIVER FRONT DEVELOPMENT PROJECT AHMEDABAD, GUJARAT, INDIA

Longitudinal Protection

Problem

Sabarmati river, which passes through the centre of Ahmedabad, was subjected to severe pressures owing to urban and industrial growth of the city. The river front was neglected and was characterized by unimaginative and unplanned development.

The Sabarmati River Front Development Corporation Limited (SRFDCL) was established with the aim of developing the riverfront by reclamation of the land on both sides of the river and thereby improving the quality of environment and life in Ahmedabad. For land reclamation, a retaining wall had to be constructed. The in-situ soil ranged from medium silty sand to silty sand. The river is expected to have a velocity of 3-5m/sec. The maximum height of wall above the riverbed was about 12m. The scour depth was calculated to be 5m. To protect the retaining wall from scour, a diaphragm wall was proposed under the retaining wall. The detailed feasibility and financial viability studies revealed that reinforced soil technology was most effective from various aspects.

Solution

Terramesh® system with gabion facia and mesh as reinforcement was selected as the best solution due to its environmental friendliness.

The system was implemented due its following merits:

- 1.They are self draining. The huge pore pressure which may get developed in a river front structure will get dissipated.
- 2.Flexibility of the system ensures safety of the structure in a high seismic prone area like Gujarat.
3. Terramesh® system consists of pre-assembled units of double twisted wire mesh. So, large casting yard is not required.

A two tier Terramesh® wall was constructed with the aim of having a walk way in between the walls along the river front. The upper units of Terramesh® were made of mesh size 10x12mm and of wire diameter 2.7mm. The lower units were of Mesh size 8x10mm with the same wire diameter. Vegetation started appearing on the wall face adding to the ecological value of the surrounding environment.

In the year 2005, the state of Gujarat received very high amount of rainfall which resulted in flood condition (once in 100 year flood). This structure has withstood the high flood condition and the structure is intact till now.

Client: Sabarmati River Front Development Corporation

Designer / Consultant: Maccaferri (Designer) / Sheladhia Associates

Contractor: Navayuga Engineering Company Ltd

Products used (Qty.)

- Terramesh 6,000 sqm facia area

Date of construction: 04/2004 - 04/2005



Photo 1: Site condition before construction



Photo 2: During construction



Photo 3: During construction



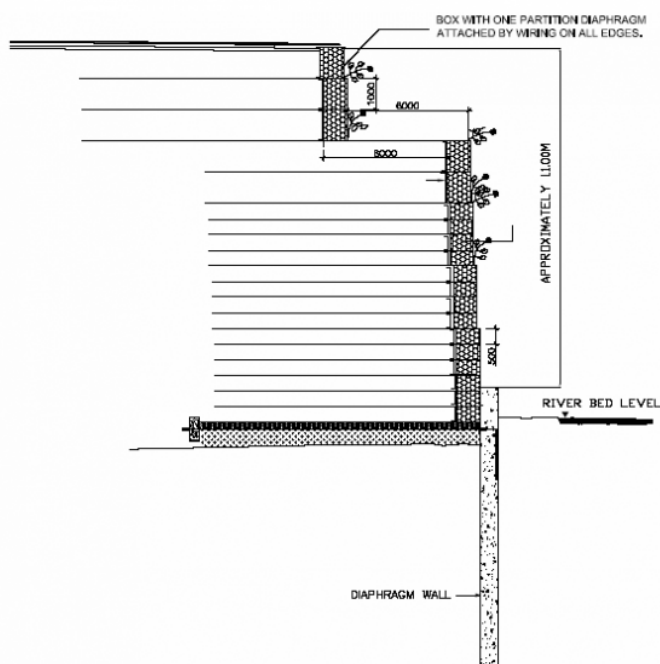
Photo 4: Completed structure



Photo 5: Completed structure after 4.5 years



Photo 6: Completed Structure after 12 years



Typical cross section drawing