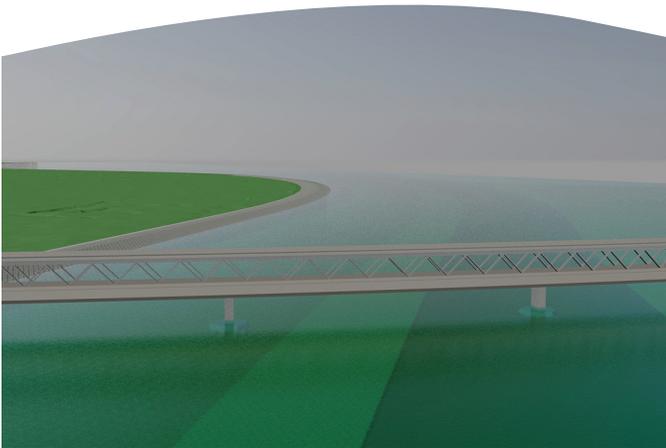




2016 AWARDS FOR ENGINEERING EXCELLENCE

Award of Excellence

River Training Works in Bangladesh - Protecting the Padma Bridge



Consultant

Northwest Hydraulic Consultants

Prime Consultant

AECOM (formerly Maunsell AECOM)

Owner/Client

Bangladesh Bridge Authority

Category

Soft Engineering

For more information, please contact:

Bruce Walsh, P.Eng.
Northwest Hydraulic Consultants
☎ (604) 980-6011
bwalsh@nhcweb.com

In Bangladesh, a 6.15 kilometre long bridge is under construction across the Padma River, the world's third largest in terms of flow. Originating in the Nepal Himalaya, the river carries an enormous sediment load, and through erosion its highly populated banks can shift a kilometer or more in one monsoon season. Extensive and massive River Training Works are required to stabilize and guide the more than 10 km wide channel through the 5 kilometre wide channel at the bridge. The design of the works was at the limit of the state-of-the-art, which was NHC's challenge.

The final design includes 12.4 kilometres of erosion protection along the south bank and 1.6 kilometres on the north bank, and is based on an extensive field data collection program, a series of detailed specialist river and geotechnical studies, development of alternative schemes, and a rigorous multi-criteria comparison that identified the preferred alternative. The estimated construction cost is 900 million US dollars.

The design is a significant change from more "aggressive" ones used for bridges that significantly narrow wide rivers in India and Bangladesh, but have very poor performance records. The design also relies on extensive and innovative use of sand-filled geotextile bags (geobags) that leverages Bangladesh's endless quantities of sand and low-cost labor. Extensive consultation with the Client and the International Panel of Experts was necessary to meet their concerns.

NHC worked closely with the Project's environmental, economic and social specialist to ensure that the design meets important cultural and sustainability requirements.