BEIYANG PARK, TIANJIN

Designer: Municipal Design Institute of Tianjin
Volume: 370000 m³
Consulting Unit (supplier of gabion system): JiangYin Jinlida Gabion System Protection Engineering Co., Ltd.
Date of Construction: Sep.-Nov., 2009

Project profile:
“Beiya Park” is located between Tianjin Avenue and Jingang Road in the west-east direction, and between the Crescent River and Beltway in the north-south direction. The first phase of the "Beiya Park" covers 100000 m², including the administration center of the park, public library, five-star hotels, serviced apartment, convention hall and other office area. Total floor area is about 550000m². Comprehensive supporting projects started with the first phase project include roads in the park, bridges, drains, power, etc. River projects mainly contain water lowering, desilting, cutting, revetment of the river.

Problems:
The landscape is marine alluvial plain, and huge thick unconsolidated sediments has been deposited after several sea-land changes. The the foundation of retaining wall and slope protection is sludge soil, therefore it will be much complex if constructed by stone masonry or Concrete retaining wall. More over, landscape plants are required to be planted after the channel improvement in order to achieve the aesthetic effects.

Solution:
According to environment and geological conditionsof the project, we chose to apply gabion structures for channel revetment so as to adapt uneven settlement of foundation. Laying gabion mattresses in the riverbed, and gabion boxes retaining wall on the mattresses. Gabion retaining wall can stand against soil press of the filling, meanwhile channel mattress decrease wash of river bottom and it will be convenient for river dredging. There are pores in the gabion retaining walls, so plants will grow out, soil and water exchange well and river quality can be highly improved.

Materials:
Gabion box and mattress, Five-twisted hexagonal, mesh opening 80mmx100mm
Box size: 4×1×1, 4×1.5×1, 3×2×0.5

(1) steel wire:
Material: high quality low carbon steel wire,
Diameter: body wire 2.7mm/selvedge 3.4mm/lacing 2.2mm(tolerance ± 0.06mm)
Tensile strength: >400MPa
Elongation: >12%

(2) Coating: galvan Zn 5%Al, coating weight(GB / T15393—94): φ3.40mm≥265g / m²; φ2.70mm≥245g / m², φ2.20mm≥240g / m². Coating should be even and continuous.
(3) PVC coating: diameter with PVC coating, body wire φ3.70mm / selvedge φ4.40mm / lacing φ3.20mm, tolerance: ±0.06mm, tensile strength >27MPa, elongation >220%.

Section Design:

Site construction guidance