

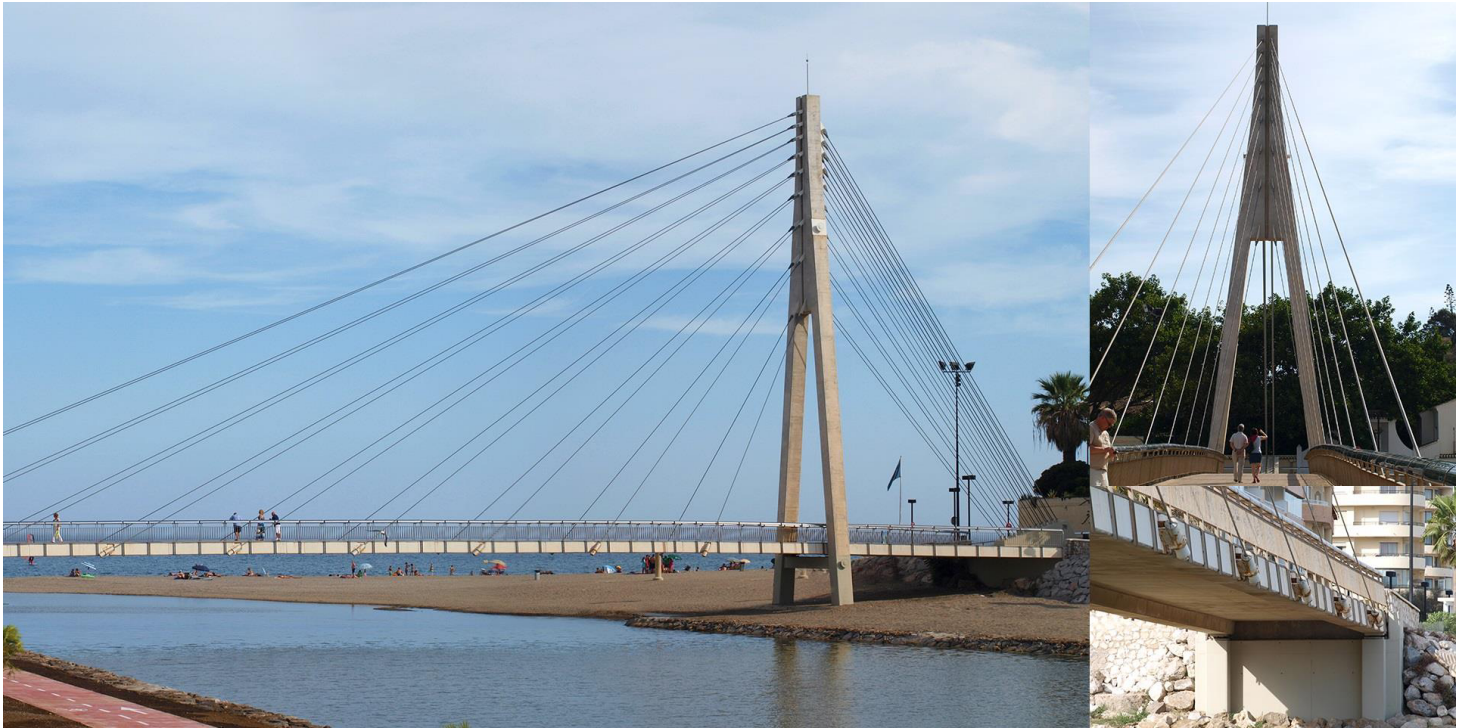


Armada Pedestrian Bridge over Fuengirola river

Fuengirola, Malaga, Spain / 2006

Structural type
Characteristics
Owner
Client
Scope

cable-stayed footbridge
prefabricated pylon and deck sections. main span: 68,2m
Dirección General de Costas
Dragados
detailed design and construction support



Regarding the continuity of the seaside esplanade for the Malaga population of Fuengirola, the General Coast Management of the Ministry for Environ-politics planned a pedestrian footbridge at the mouth of the river Fuengirola, whose placement of supports should not interfere with the hydraulic drain-system of the river into the Mediterranean Sea.

In order to span an almost ninety metre wide riverbed, a cable-stayed reinforced concrete structure with a deck of two spans of 14.80 and 68.20 m and a single pylon placed on the right riverbank has been designed and built.

Due to the lack of span compensation of the deck, with a close to 0.20 relation, the balance of the vertical loads from the main cable-stayed span is obtained by means of a counterweight which guarantees stability against the vertical pull from the retaining cables. This counterweight is connected to the compensation span in such a way that horizontal loads transmitted by the retaining cables are counteracted by the compression transmitted by the deck.

The cable-stayed system consists of closed cables of two diameter types of 40 and 55 mm that give the structure a graceful appearance, which would not have been possible if the solution of parallel strands had been chosen. These closed cables are composed of spiral-rolled steel wires whose last three layers are z-shaped in order to induce their closing when tensioned. For reasons of durability, all interior wires are galvanized with zinc and the z-shaped wires with a special alloy of aluminium and zinc.

The reinforced concrete deck of 0.60 m thickness is anchored in the counterweight and supported by the pylon and the abutment where the expansion joint is located. Its compensation span which contributes to the loading weight action of the counterweight counts on a concrete section of variable width from 11.50 to 5.10 m.



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