



## La Florida Suspension Bridge. Oviedo, Spain.

Juan José Arenas, Guillermo Capellán, Alejandro Godoy, Marianela García, Juan Ruiz, Santiago Guerra

*Arenas & Asociados, Santander, Spain*

Contact: [agodoy@arenasing.com](mailto:agodoy@arenasing.com)

### Abstract

La Florida Bridge is a €5,9 million project promoted by Oviedo City Council to provide a new link between “La Florida” and “Western Park” neighbourhoods. The final design, developed by Arenas & Asociados, represents an innovation in urban bridges, solving the connection between both areas with a flying semi-circle roundabout suspended from its inner edge by a system of hangers.

The main novelty of this solution is that hangers and backstays are fixed to the same suspension system, composed by two main cables making a loop and anchored to an articulated mast. The structure is completed with a post-tensioned concrete approach viaduct, a composite connection span between roundabout and viaduct, two cantilever footbridges arising from the concrete deck and flying parallel to the roundabout, and finally, a concrete ring as counterweight for the backstays anchorage.

**Keywords:** Concrete, steel, cable, suspension, counterweight, mast, footbridge, roundabout.

## 1 Description of the Bridge

### 1.1 Global Conception

The singularity of La Florida Bridge emerges as solution to the different height connection problem between La Florida and Western Park neighbourhoods (Fig. 1).

The new link, crosses over the existing railway tracks and the rock-fill wall that runs parallel to them, creating a natural barrier with an 8m-high vertical jump between both communities (Fig. 4). This obstacle, added to the rest of constraints, such as the urban planning in the area with a half roundabout on the upper level over the railway, the minimum clearances required by the different traffic types or the restricted location of the structure, make the solution a technical challenge that has to be solved with a maximum depth of just 68 cm (Fig. 2 & 3).



Figure 1. La Florida Bridge sight from the beginning of Western Park