

CONTEST FOR A BRIDGE FOR PEDESTRIANS AND BICYCLES ACROSS THE MINHO RIVER

Authors: Maria del Mar GOBERNA PÉREZ¹, Gonzalo GOBERNA PÉREZ²

Affiliation: ¹ CEO, GmasP Ingeniería y Arquitectura, Valencia, Spain – mgoberna@gmasp.es

² CCO, GmasP Ingeniería y Arquitectura, Valencia, Spain – ggoberna@gmasp.es

GmasP Ingeniería y Arquitectura, c/Reloj viejo 7, entlo., 46003 Valencia, Spain - <https://gmasp.es/en>

Summary

In October 2017 was created the possibility of participating in a contest organized by the council of Pontevedra to connect Spain and Portugal across the Minho by means of a cross-border bridge creating a leisure space with a unique character. GmasP & EOVA STUDIO took part of this competition with a structurally daring and aesthetically attractive solution which is presented in this article.

It consists of a walkway 225m long and maximum span of 100m solved by a cantilever typology, with two identical but opposing structures that meet in the center forming a central plaza. The interest lies in that the walkway forms a sinuous shape that links eccentric curves and countercurves with respect to the support points. The torsion forces generated by these eccentricities are balanced by an asymmetrical box section that generates opposite torsion forces to achieve balance.

The solution of the structure combines different types of eccentricities, resulting in an incredibly attractive final shape, arising from the search for a balance between them.



Fig. 1. 3D view

The proposal was awarded with an Honorable Mention and it became a unique opportunity to experiment with the shape and balance of structures. It was a collaborative experience between engineers and architects to obtain an attractive project from the point of view of both disciplines.

This article describes how the process of designing architectural design was like, how the structure was calculated, and what technical foundations are behind each formal decision. As a result of the collaboration between disciplines we can obtain designs with significant added value.

Keywords: Contest, footbridge, torsion, design, structural concepts.