Urban Bridges-Latest Experiences in Andalusia

Alejandro CASTILLO
Director/Assoc. Professor
ACL/University of Granada
Cadiz/Granada, Spain
acl@acl-estructuras.com

Manuel ESCAMILLA
Civil Eng./Assoc. Professor
ACL/University of Cadiz
Cadiz, Spain
mescamilla@acl-estructuras.com

Gonzalo OSBORNE
Civil Engineer
ACL
Cadiz, Spain
gosborne@acl-estructuras.com

Carlos CALLEJA
Civil Engineer
ACL
Cadiz, Spain
ccalleja@acl-estructuras.com

Guillermo MONTERO
Civil Engineer
ACL
Cadiz, Spain
gmontero@acl-estructuras.com

Francisco J. RAMIREZ
Project Draftsman
ACL
Cadiz, Spain
fjramirez@acl-estructuras.com

Summary

Andalusia, the southern region of Spain, has an ancient history, magnificent monuments and a prolific culture. This region has developed an ambitious infrastructure improving plan, concerning every facility and mean of transport. Bridges have a preeminent role in all of these interventions, and their design needs to deal, in a very conscious way, with a rich natural environment and with an outstanding cultural heritage that configure the historic patrimony of the area. For all these reasons, it is appealing to analyse how to develop a bridge project in such an attractive and, at the same time, sensitive environment, especially in urban areas where the conjunction of nature and cultural heritage takes place. The study of a few representative examples is tackled, focusing in the key aspects involved in the achievement of a successful project, not only respecting the surrounding conditions, but also increasing the objective and subjective value of the place.

Keywords: Andalusia, urban bridge, Maro, urban footbridges, cable-stayed, Dragon Bridge.

1. Introduction-Basis of design

Which must be the characteristics of an urban bridge? The answer to this question may lead to a controversial discussion, in which many different and almost certainly opposite points of view would arise. Probably, as Javier Manterola pointed out [1] it would be easier to achieve an agreement about how an urban bridge must not be, rather than how it should be. Nowadays, the evolution of technologies and the economic develop experimented by many areas have supported the proliferation of urban infrastructures, and bridge design is immersed in a constant worldwide contest to achieve the most innovative and impressive piece. Modern times have proportioned an unknown formal freedom to the design of bridges, especially patent in urban areas, and as J. Schlaich wrote, not always for the better [2].

Fig. 1: Maro Cable-Stayed Footbridge. ACL

With the technical advances in software and hardware, sophisticated calculus can be carried out almost instantly, and this is occasioning dissociation between formal (conceptual) design and structural design. This phenomenon, when occurs, implies the consideration of the outer (visible) shape as a totally independent matter, around which all the project must revolve, considering it as the most important issue. Thus, a decontextualization of the bridge itself in all ways is commonly taking place: structural behaviour, geotechnical conditions, construction procedures or materials availability are subjects unfairly subdued or even forgotten

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