

Arch Bridge over the Júcar river

Alzira, Valencia, Spain / 1998

Structural type Characteristics Owner Client Constructor Scope arch of 57.64m span and intermediate composite deck main span: 57,64m Generalitat Valenciana Carrión, Plodfer y Schwart Hautmont Carrión, Plodfer y Schwart Hautmont detailed design



The bridge over the River Júcar comprises a double arch with an intermediate composite deck which is highly skewed.

The arches above the deck are made of steel maintaining a constant area, despite their variable widths at different points: each arch is less wide but deeper at springs and wider but less deep at key, in order to increase lateral stability against buckling. The span of the arch at the intersection with the deck is 87,00 m. As the bridge foundations are supported on piles, the arch is completed with a triangular steel cell which contributes to compensating the horizontal component of the arch reaction.

Once the concrete infrastructure was built, the steel deck was placed and the upper arch on top of it. The hangers were stressed and, finally, the concrete of the deck was cast.





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