

Buriano

Location:	Arezzo, Italy, crossing the river Arno
Client:	Provincia di Arezzo
Team/architect:	In collaboration with Bolina Ingegneria, Abacus, and Tommaso Architettura
Year:	2021
Engineering services:	Competition (bridge concept, structural analysis)
Bridge use:	Road bridge
Bridge type:	Asymmetrical continuous girder bridge
Technical data:	Overall length 130 m, span lengths 83 and 35 m
Construction cost:	Approx. EUR 4.2M

Project Description

The proposed bridge for the new ring road close to the historical bridge of Buriano reflects the tradition of the elegance and functionality of an arch crossing the river Arno since the time of the Romans, with the use of local materials, such as concrete and stone.

The structural geometry of the bridge is the result of a topology optimization maximizing the river capacity for the flooding situation with favorable hydraulic cross sections and minimizing the use of materials. The shape of the steel-concrete composite continuous girder with large openings over the supports gives the bottom chord of the main span the function of a shallow arch. To reduce the environmental impact, the bridge concept is based on a construction procedure with a minimum of temporary works in the river. The structural analysis of the composite cross section is governed by the built-in construction stage analysis.

