

Arezzo Bridge

Buriano, Italy / 2021

Owner	Provincia di Arezzo
Client	Provincia di Arezzo
Scope	tender design and detailed design

The bridge design is strongly influenced by the distant presence of the historic Buriano Bridge and the flatness of the Arno River's floodplain. It is a historical and landscape setting of great value, in which the new bridge must blend in. The design aims to make the bridge imperceptible from afar while giving it a strong visual presence in close-up views. The project seeks to respect the permanent watercourse of the noble Arno by spanning it with a single central span, complemented by two side spans on each end to ensure the river flows smoothly even during major floods.

CONTEXT

The provincial road known as "Setteponti" connects several towns in the Upper Valdarno with the city of Arezzo and the Florentine Valdarno. This road, of ancient origin, crosses the Arno River via the historic "Buriano Bridge," a Romanesque structure from the 13th century (1277), which many Leonardo da Vinci scholars believe to be the bridge depicted in the famous painting "The Mona Lisa" in the Louvre, Paris.

Due to natural deterioration over time, the bridge now requires restoration and conservation—both for its immense historical and artistic value and to ensure the continuity of a road link of strategic importance. To preserve this crossing, the Province of Arezzo decided to hold a design competition for a new bridge to be built parallel to the existing one. This new bridge would allow the historic structure to be reserved for pedestrian and bicycle use.

GENERAL CONCEPT

The proposal for the new bridge over the Arno fully considers the strength of the context in which it is to be built: on one side, the presence of the valuable medieval Buriano Bridge; on the other, the calm character of the river, which flows gently through a plain flanked by riparian woodlands.

The Province of Arezzo, the promoter of the project, decided to cross the river about 800 meters upstream from the historic bridge. This greatly simplifies the designer's task: it is enough to ensure that the road deck is the highest point of the structure, making the bridge respectful of the historic setting—there is no need to study a "dialogue between bridges" since the two structures are spaced far enough apart not to interfere with each other.

In addition to cleanly spanning the river's permanent channel, the bridge must be long enough (240 meters) to allow floodwaters to pass without raising the river's level during peak flows.

DESIGN

The structural typology conceived for the new crossing over the Arno perfectly addresses the significant existing constraints, notably the historical-natural context and the relationship with the medieval bridge.

The structural solution adopted consists of a prestressed concrete deck with a total length of 240 meters, composed of two 40-meter side spans on each end and a central span of 80 meters that crosses the Arno's permanent watercourse. The central span features significant thinning near the piers and an arch-like shape that reduces the visual mass of the bridge and brings it to a human scale for pedestrians and cyclists crossing near the main supports. This is the concept of the "hollowed beam" previously used by us in the footbridges of the Eibar cycling path.

In addition to this concept, the design also incorporates the idea of a wing following the compression lines—reviving a concept used in the roof of the UNESCO headquarters in Paris, which produced an excellent formal and structural outcome for its author, P.L. Nervi. Unlike that project, in Buriano the wing is visible in the bridge elevation, giving the structure the appearance of an arch.

EPITOME

The white concrete bridge is a restrained structure—barely noticeable from afar, yet with strong visual and formal impact for nearby users and observers.

The design, which won the competition, aims not only to improve the regional road network but also to enhance the surrounding areas. In doing so, it contributes—albeit in a different way—to the use and appreciation of the Buriano Bridge, a masterpiece of Tuscan medieval engineering already admired by Leonardo da Vinci.



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