



# New bridge over Piave River

Belluno, Italy / 2020-2024

Structural type	Pre-stressed concrete continuous beam with asymmetric counterweight
Characteristics	Spans 129m + 40m + 40m + 30m
Owner	Comune di Belluno
Client	Comune di Belluno
Scope	tender design and detailed design
Architect	Alberto Campo Baeza



The project includes the preliminary and detailed design of a new bridge over Piave River in Belluno, Italy. The design has been carried out under important boundary conditions, such as the existence of a provisional bridge that must be maintained during construction, historical context of great value and environmental restrictions. The design concept is based on the idea of integration and respect for the values of the city of Belluno. It was decided to choose a structural typology that does not contain elements above ground level, thus avoiding any interference with the existing landscape and interfering with the riverbed. Additionally, the project establishes a respectful dialogue, from its modernity, with the nearby Ponte della Vittoria.

The structure has a total length of 339 m and it is composed by a main span crossing over the Piave River and three approach spans. Both bridges are connected by a central element known as counterweight, with the function of equilibrate the main span self-weight. The adopted structural solution for the decks are both post-tensioned concrete slab, supported over piers (approach spans) and over the inclined support (main span).

Deck cross section has been designed with a total width of 18.50 m, supporting a roadway that includes two traffic lanes 3.50 m plus shoulders 0.50 m at both sides. Furthermore, two cyclo-pedestrian paths at both sides, with widths of 1.50 (left side) and 4.00 (right side).

The plan alignment is curve along the three approach spans and a line along the main span.

The main bridge has a total length of 129 m, where the first 28.60 m of the deck are supported over the counterweight. The main feature of this structure is the presence of an inclined support, placed in the longitudinal direction of the structure axis. The reason for the significant inclination of the support is the necessity of minimize the interference of the structure with the hydraulic river section.

The approach bridge has been designed with a total length of approximately 110 m, and it is divided into three spans, with a span distribution of 30+40+40 m, measured from the structure axis. Abutment 1 is placed perpendicular to the roadway axis, and includes neoprene bearing pads where the deck is supported. Those approach spans are supported over piers.

Finally, two staircases have been designed at both sides of the counterweight providing pedestrian access to the river.



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