

## A FOOTBRIDGE ON THE WATERWAY PADUA - VENICE: THE BRENTA RIVER

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"So it was written in my page, in the book of my Faith, that on the evening of September 28<sup>th</sup>, 1786 at 5 p.m. according to our time, passing through the river Brenta to the Lagoon, I had to see immediately this beautiful insular city.

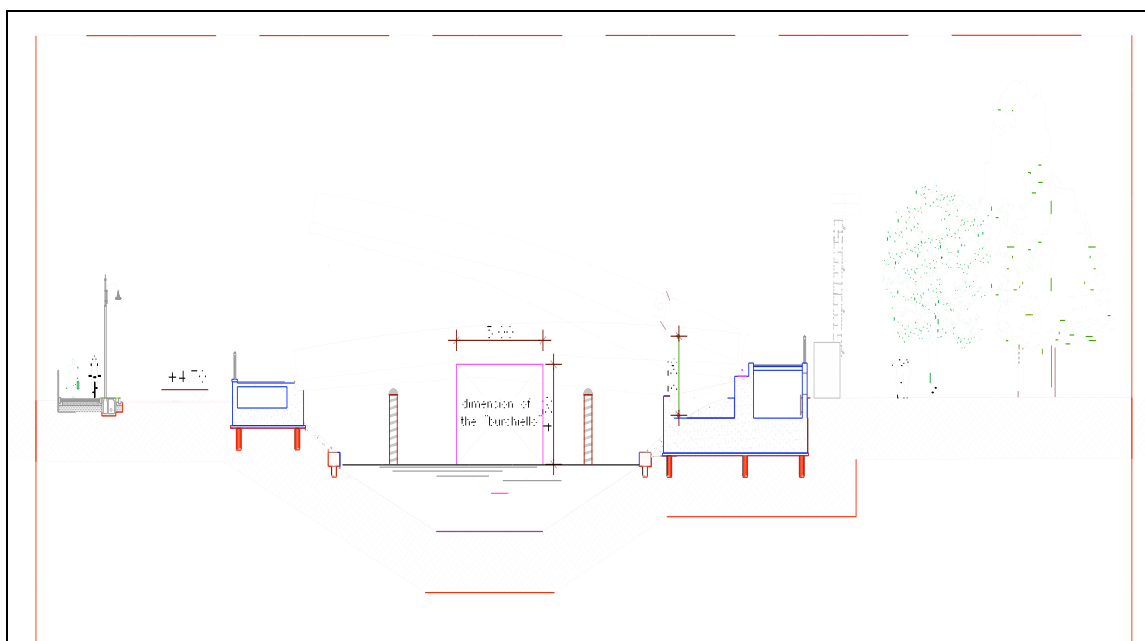
I will just write a few words about my travel from Padua to here. The way along the Brenta, on a public boat, with nice people, has been lovely and convenient: Italians are very kind to each other and to foreigners. The riversides are adorned with gardens and villas; you can see small villages all along the way, and sometime, a very crowded and lively street or market."

Goethe, Travel to Italy, Venice, September 28th 1786

This bridge has been conceived with the idea to connect two of the liveliest parts of the small town of Mira, halfway from Padua to Venice: the market square and the sport center, so far divided by the river Brenta. The main functional requirements for the new footbridge are:

- An easy connection for pedestrian and cycles willing to exploit the facilities of the green areas and sport centers.
- To maintain the navigability of the river Brenta, and the transit of the "Burchiello", a traditional boat with panoramic roof for the transport of tourists.

The solution chosen is a drawbridge, with hydraulic pistons permitting the bridge raise. This is an original solution with respect to the many existing bridges along the river: normally the navigability had been achieved by realizing high decks or rotating bridges. In this case, the lightness of the structure and the affordability of hydraulic devices have permitted this solution.



*Fig.1 Lateral Prospect – Open Bridge*

## *Footbridge 2005 – Second International Conference*

The main beams, spanning 23m, have a steel I section with maximum height in correspondence of the pistons, and minimum at the opposite abutment, quoting the shape of the lift bridges, for its function of connecting the historic and fortified part of a town with its new part on the countryside.

A light steel and timber parapet, together with the timber deck, complete the structure, which results to be very transparent and light.

Even the uplifted position is studied in order to ensure maximum visibility of the landscape behind.

The calculations have been performed according to the Italian normative for static and dynamic loading, including seismic ones.



*Fig.2 Rendering of the footbridge and sight of the river Brenta*



*Fig.3 Rendering of the footbridge and careful insertion on the surrounding environment*