



PONTE DE PONTE DA BARCA

PONTE DA BARCA BRIDGE

The bridge of Ponte da Barca has Gothic origin, with the surface slightly sloped, and 10 arches (one of them covered), with different dimensions, some slightly pointy and others arched. The latter are probably the result of past reconstructions.

On the East side, the pillars have cutwaters which correspond to counterforts on the opposite side. Above some of these, there are arched spans to hold the current.

Originally, the bridge must have been constructed in late 15th century, although earlier documents mention the Bridge of Barca, suggesting there used to be a crossing boat in the same spot, considering the importance of this route to Santiago.

After the renovation work done in the 16th century, others followed, both in 1765 and 1895, as suggested by the existing inscriptions. From the Baroque era there are two counterforts, on each side of the bridge, in the middle of the deck, with semi-circular balconies and the medallions where the king's arms and the armillary sphere were placed. Following the example of the bridge in Ponte de Lima, there are references that suggest that Ponte da Barca must have been fortified, and located on the other side of town, as a defensive element that has, since then, been demolished in one of its renovations.





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Between 2007 and 2010, prior to the recovery intervention in the bridge “Ponte da Barca”, there were several technical inspections to its structure. In fact, although historical, it is a bridge with heavy traffic, used by both pedestrians and motor vehicles.

In 2007 several structural problems were diagnosed, namely:

- Sliding and changes in the shape of the breakwater adjacent to the central pier
- Fissures and vegetation growth on the piers
- Sliding of a pier base, downstream
- Fissures visible on the arches

Visible water infiltrations might have been the cause of the collapse of the bridge deck and of the access way, on the northern side of the bridge. These were also related to the clogging of the water drainage system. Underwater inspection revealed that the bridge foundations were not severely damaged nor was the sedimentary support of the bridge significantly eroded.

In 2009 a new inspection took place. This time, the lack of maintenance and repair had already caused damage. The breakwater adjacent to the central pier had collapsed, with several broken structural stones and filling mortar. The bridge stability, however, was not in danger. But an intervention was necessary before the start of the rain season and it did take place in 2010.

One of the pier bases, on the downstream side of the bridge, was by then already separated from the corresponding pier. The access way to the down section of the bridge, on the northern side, had almost no pavement and exhibited large fissures on the support sediments, challenging access to the bridge and risking the collapse of the foundation of the first arch, had the intervention not promptly taken place. The bridge support wall was also damaged and it could affect its foundations and the bridge structural safety.

The proposed safety measures for the bridge rehabilitation involved a two stage intervention:

3. In 2010, an emergency intervention took place for the breakwater repair. It was disassembled and reconstructed, using the original stone elements and the same construction techniques as before, with hydraulic lime based mortars and pre-measured pozzolan.

4. Next, in 2013, a general bridge rehabilitation intervention took place, involving some reinforcement and improvement measures, such as a water proof bridge deck and the application of beams on the central arches.

The intervention ended in 2013 and the bridge is presently open to the traffic.

