

DOI: 10.24904/footbridge2017.09902

## SHARED PLATFORM FOOTBRIDGES IN RURAL ENVIRONMENTS: FOOTBRIDGE OVER MIÑO RIVER IN OS PEARES (OURENSE)

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### Summary

To solve the accessibility problems of the area surrounding the village of Os Peares, a new footbridge is projected that allows crossing over the Miño River downstream from its confluence with the Sil River. Initially the bridge was planned for pedestrian use only, as the expected traffic was very low, but as in response to the demands of the residents of the area a shared platform bridge was designed, in which the platform is shared between motor vehicles and pedestrians, with preference for the latter.

The adequate design of the shared platform is vital to ensure the users understand how to use the infrastructure. Main factors are pavement design, parapet design and adequate signaling. Several options were considered for the pavement, finally selecting a cobblestone pavement with two different colors that slows down vehicular traffic. A specific design for the parapet is considered, which provides safety for both pedestrian and vehicles, with an adequate design for a footbridge.

This mixed solution allows reducing the cost compared with the cost of a full vehicular and pedestrian bridge. The environmental impact is also reduced as the size and materials to be considered can be more adjusted to the natural surroundings.

**Keywords:** historical; aesthetics; structural concepts; planning

### 1. Introduction

To solve the accessibility problems of the area surrounding the village of Os Peares, a new footbridge is projected that allows crossing over the Miño River downstream from its confluence with the Sil River.

The new structure links the historic national road N-120a with the town of Os Peares (A Peroxa council). The project has been promoted by the regional authority Xunta de Galicia, projected by TEMHA and constructed by the firm ATLÁNTICA.

### 2. Conceptual genesis of the shared platform solution

A platform width of 6.25m was considered to allow for two vehicles to be able to cross inside the bridge. This solution implemented a shared platform design, with no physical separation between pedestrians and motor vehicles, providing this way plenty of space for pedestrians while there were no vehicles in the bridge, which is the most common situation.

In areas of coexistence, the functional requirements of pavements must be combined for different types of users, seeking a compatible solution for all of them. Concrete or paved floors are applicable; In some cases

solutions are adopted with a bituminous treatment or slurries. All types of traffic deterrents are used, among others, sound bands and pavements (cobblestones, cobblestones).

It is necessary that the design of the platform clearly inform users of their shared space and restricted use nature. The initial work of convincing to overcome resistance is essential, but its use will prove its suitability. It is, in short, a process of road and urban education, as has already occurred in the aforementioned historical sites

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### 3. Footbridge Structural design

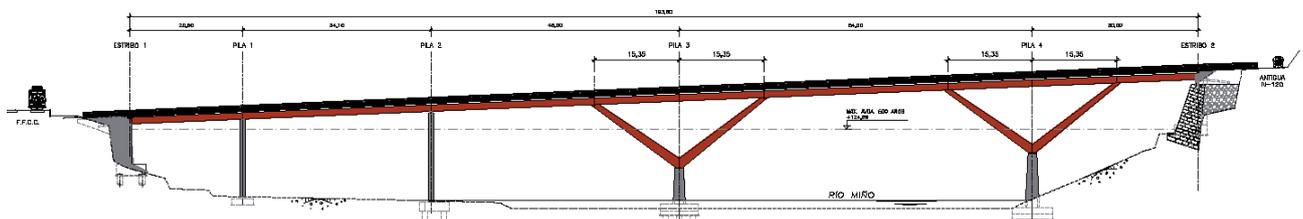


Fig. 1. Elevation

The footbridge length is 193.60 m, with five spans ranging 20.50 - 34.10 - 45.00 - 64.00 - 30.00 m. The main span allows crossing over the Miño River. The deck has total width 6.25 m, with a net width of 5.05m and two parapets of 0.60 m each.

The designed frame footbridge solution with "Y" shaped supports crosses over the Miño River with a maximum span of 64.0m, requiring structural elements with a maximum length of about 30m. This is required because of the existing limitations in the accesses for the construction of the footbridge.

The deck is a steel and concrete composite section with constant depth of 1.50 m, with a steel U shaped section 1.20 m height and 3.28 m width, over which a 0.30m thickness top concrete slab is placed.

### 4. Conclusions

The solution described in this article provides a cost-effective solution for both pedestrian and vehicular crossing considering a shared platform. The design of the shared platform in a bridge requires specific assessment of the pavement materials and colours, parapets and platform width, which should be designed according to the expected intensity of both pedestrian and vehicular traffics.



Fig. 2. Finished bridge and pavement