

CAN GILI FOOTBRIDGE OVER THE BV-1432 HIGHWAY IN GRANOLLERS

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Summary

The construction of the Can Gili footbridge was an old claim of the inhabitants of the two neighbourhoods separated from one another by the trench of the BV-1432 road in Granollers. The design we proposed was strongly conditioned by the asymmetric shape of the obstacle that had to be crossed and by the bad ground conditions on the top of the south slope. It is formed by a main deck, composed by a cranked shape continuous Corten steel beam, with two supports, one at each side of the road, and a secondary deck. The latter is a simply supported structure that spans 13.9 metres, from the top angle of the former to the free end of its cantilevered span. The primary deck has a main span of 32.7 metres and a cantilevered side span of 5.0 metres. The construction started in June 2009 with the upgrading of the south approach and the construction of the foundations. Meanwhile, the steel structure was fabricated twenty kilometres away from the site. When the abutments were ready, the deck was transported to the site in four sections and erected with the help of a temporary tower. Once the deck was put into place, the mandatory static load test was carried out. The works finished by the construction of the north approach and the installation of the public lighting and the street furniture. The footbridge was open to the public in January 2010.

Keywords: footbridge; aesthetic; steel; Corten.

1. Introduction

The construction of this footbridge was an old claim of the inhabitants of the two neighbourhoods separated from one another by the trench of the BV-1432 road. These two residential areas, Terra Alta on the south bank and Can Gili on the north one, have a different nature: Terra Alta is a low density urban area, with a community park, but with no services, and Can Gili is a dense zone with shops and community services, but no green areas. So far, people from one neighbourhood wanting to go to the other one had to make a detour, crossing the road through a highway bridge, placed at the east border of these urban areas, with a single narrow footway in one of the sides of its deck.

For these reasons, at the beginning of 2001 the Granollers Borough Council commissioned Alfa Polaris to carry out the concept design and the detailing document of a new link between these two urban areas.

2. Concept Design

The design of the proposed link, a footbridge over the mentioned road, was strongly conditioned by the asymmetric shape of the cross section of the road trench. We looked for a design that highlighted this asymmetry marked by the different level of the two banks —Terra Alta's bank is 4.3 metres higher than Can Gili's one— and the presence of a small platform in the middle of the south slope of the trench.

We studied various alternative locations for the new link and, trying to minimize the length of the resulting pedestrian routes and taking into account the ease of construction, we eventually decided to place the footbridge next to the junction of the Sant Ferran St. with Verge de la Mercè St. and Sant Marc St. at the Terra Alta side. On the opposite bank, the abutment was placed next to the old threshing floor of the Can Gili ancient country house —which gives name to the neighbourhood —, currently used as a community centre.

Although there was an alternative route to easily divert the traffic of the BV-1432 road, the client was very interested in reducing to the minimum the temporary road closures during construction. This was one of the reasons why we chose