

A Modern Lattice Bridge over Ticino River in the Ticino Natural Park

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Summary

The aim of the project for adapting SP527 carriageway (Novara Province, Piemonte Region, Italy) is to improve the local roads network connection with Milan Malpensa airport; the project is going through its detailed design phase. The Ticino Natural Park is fully interested by this project so that environmental aspects have become the most important. In the current SP527, two 19th-century infrastructures stand out: a steel lattice bridge over the Ticino river and a masonry 3-arch bridge over the Bragadano canal. A new bridge over passing the Ticino river is needed: for its architectural concept design, the presence of the old lattice bridge has been considered. This new bridge has a total length of 316,30 m with an overall deck width of 17,05m. The main deck consists of a tubular girder where lateral parts are a steel “celosía” lattice, the lower deck is a reinforced concrete lenticular section, longitudinally and transversely pre-tensioned, with height up to 1,75 m and transversal beams every 4 m.

Keywords: “.celosía” lattice bridge, architectural concept, Ticino Natural Park.

1. Introduction

The project for adapting SP527 carriageway (Novara Province, Piemonte Region, Italy) has as its

aim to improve local roads network connection with Milan Malpensa airport. The Ticino Natural Park is fully interested by this project so that environment represents a strong aspect to consider for any choice.

In the current SP527, two 19th-century infrastructures stand out: a steel lattice bridge over the Ticino river (Fig. 1) and a masonry 3-arch bridge over the Bragadano canal (Fig. 5). A new bridge (Fig. 2) over the Ticino river is going to be located in a roadway inside the municipalities of Lonate Pozzolo and Oleggio. From the feasibility study, the main aim is to design an original bridge, which has to be inserted in such particular environment that is the Ticino Natural Park. Indeed, the architectural concept design considers the presence of the near existing historical bridge,



Fig. 1: Ticino river historical lattice bridge



Fig. 2: Ticino river new bridge rendering