

A lightweight suspension footbridge lights new urban perspectives: the Porta d'Europa in Padova

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Summary

The new Porta d'Europa footbridge in the city of Padova is a lightweight suspension footbridge spanning 80 m across a four lanes freeway, linking a new park to the Piovego canal embankment and a student campus area not far away. The area is sufficiently known in the city for being socially troubled at present time, and the new connecting infrastructure represents a urban administration challenge for rehabilitation. With true sustainable development premises, the project faced in its preliminary and construction phases numerous constraints including low budget, preservation of embankment integrity and minimum material usage. All of them revealed as fundamental design guidance up to the final result.

Keywords: lightweight structure, suspension system, sustainable development, construction stage analysis, self-anchoring.

1. An introduction to the site



Fig. 1: View of the site for the Porta d'Europa footbridge from southwest

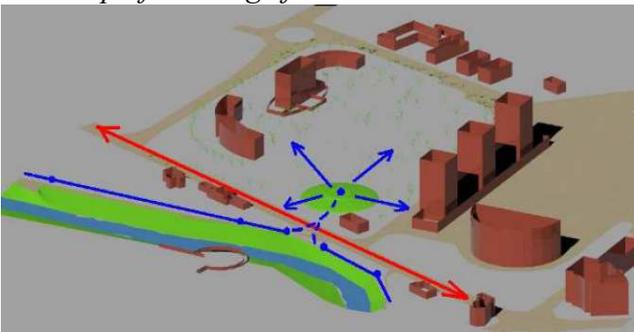


Fig. 2: Aerial view of the site model looking north: red line marks the freeway splitting the

The site of Porta d'Europa footbridge represents an extraordinary expression of natural attitude that today many areas of our cities have as urban "catalysts": a chance for upgrading from a non-lieu status to new urban perspectives through a linking infrastructure.

On the southwest side lies a narrow and abandoned patch of land in which many pipelines are located just next the riverbank of the Piovego canal. On the opposite side of the canal, ancient city walls onshore mirror their beautiful rampart curves on the water, and University sciences campus rises nearby. On the north side, lies a new park built over the debris of an old urban factory, where a socially troubled neighbourhood can breathe and relieve. In between, the four lanes via Venezia freeway toward East splits the city, and cycle-pedestrian traffic must yield to heavy motorized traffic.

Crossing over, the new suspension footbridge - with a deck so slender to appear as a line on the horizon, and a transparent cable system - will offer new points of view minimizing the new structural volumes at the same time.

It is a challenge for any city administration to