



Engineering Structures for Life



TRANSPORTS - BRIDGES & VIADUCTS

Viaduct of Parque da Paz

ABOUT

This project is about a 170 meters long [viaduct](#), in an urban environment, over Parque da Paz, composed of two independent viaducts, one for roadway and another for the South Tagus light rail system.

The aim of GEG's intervention was to develop a variant design to a previously stated design solution, designed by a third company. The main purpose of the variant solution was to define a simpler [structural solution](#) for the decks, either to accelerate construction, to render railway and roadway viaducts as structurally independent structures and to simplify the support system of the decks. The variant design had also to be accomplished under the prescriptions of keeping the columns in the defined longitudinal alignments, to use the [concrete piles](#) meanwhile constructed, and to change as less as possible the columns' section.

The total length of the [viaducts](#) is divided in 7 spans, with a longest span, at the centre, with 32 meters. The horizontal alignment of the viaduct counts with a 70 meters long straight segment, and the vertical profile with a mean inclination of 2.5%. The [roadway viaduct](#) is 9,50 meters wide, serving two traffic lanes and a sidewalk, and the [railway viaduct](#) is 10,20 meters wide, serving two rail tracks and a sidewalk. The viaducts are separated by a longitudinal 10 cm gap.

The material defined for viaducts structure and foundations was reinforced concrete, having the deck's beams post-tensioning tendons, in the longitudinal direction. The whole structure was cast in situ, with formwork supported from the ground. The deck is composed by two 1.60 meters height beams, connected by a 0.30 meters height slab that is prolonged as cantilever for the sidewalk. Viaducts deck is a continuous structure, fully connected to the columns of the four central alignments of columns, and simply supported in the remaining columns and abutments. The construction sequence of the deck was segmental, per span, with starting point from one of the abutments. The concreting joints of each cast in place segment were defined to be in the zones of less

FACTS

Year: 2004

Client: MTS, Metro Transportes do Sul, S.A.

Services: Detailed design, Structural Engineering, Foundations design, Geological and geotechnical studies, Consulting and on-site technical support

TEAM

LOCATION

Almada, Portugal

bending moment.

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