



TRANSPORTS - BRIDGES & VIADUCTS

Pinhal Interior Motorway

ABOUT

The Parcel 2 of the Pinhal Interior Motorway is located in the Central West region of Portugal, stretching along 16,1 km between the localities *Condeixa* and *Avelar Norte*.

In this project, GEG was responsible for the geological and geotechnical studies and structural and foundations detailed design of five [viaducts](#) a total extension of 2.235 m.

In order to obtain sufficient data to evaluate the rock mass conditions for the foundation, a geological site investigation for each structure was defined. Then, all data were compiled, evaluated and a geological model was made, with the different ground type definition.

Structural solution

The five viaducts have a total length between 336 m and 756 m, with current spans between 26 and 35 m.

Two [solutions](#) were adopted for the viaducts' decks. The first consisted of prestressed precast beams (I and U sections). These beams support a cast in-situ slab over precast thin slabs. The total slabs thickness is constant along the width of the decks and equal to 25 or 30 cm.

The other one consisted of a cast in-situ deck with double beams (TT) and a variable depth slab. For this solution, a movable scaffolding system was applied.

Depending on the viaduct height, different solutions were adopted for the columns. For the higher viaducts, rectangular hollow sections were considered. For the lower viaducts, a circular solid section with a diameter of

FACTS

Year: 2010-2011

Client: Ascendi

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

TEAM

António Campos e Matos

Ricardo Leite

LOCATION

Pinhal Interior, Portugal

1,20 m was adopted.

The [foundations' solutions](#) range between deep foundations materialised by piles of 1,20 m of diameter and shallow foundations materialised by footings in every columns' alignment, depending on the terrain resistance.

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