

Arch Bridge over the Dambovita River

This bridge crosses the Dambovita River in Bucharest and is included in a larger network of viaducts which are situated in stretches before and after this structure.

This new bridge crosses over an already existing bridge, which currently allows both a tram line and the Grozavesti and Orhideelor Streets to cross the river.

The proposed structure is a twin steel arch with a lower deck, having a total span of 117.7m and a width of 21.3m (19.8m between axes). The arches rise 18.4m over the steel deck, which means that the rise/span ratio is approximately L/6.4.

The arch cross section is of both variable width and depth; they are connected to the composite deck with steel hangers placed every 10m.

The deck comprises two 1.5m constant depth steel box girders (depth/span ratio L/78.5) placed at its edges; the girders are transversally connected with steel I-beams every 3.33m. Over this latticework of longitudinal and transversal girders a 0.25m concrete slab is poured and connected to the girders with studs. The abutments have been conceived as concrete frames.

The most significant challenge in designing this structure is its emplacement in a high risk seismic area, which has led to the introduction of a dampening system for the deck's mass based on Lead Rubber Bearings (LRB). With regard to construction, it is important to note that the tramway line which runs directly under the bridge has been kept in operation during the entire construction process.



Romania/2009

Project data

Structural Type:
Steel bow-string arch
Location:
Bucharest
Proprietor:
Termino municipal de Bucharest
Scope of Works:
Construction Project and Technical
Assistance to the Constructor