

# CONTINUOUS ARCH BRIDGES OVER LAKE TISZA, HUNGARY

Authors: Gábor PÁL<sup>1</sup>, Attila DÉSI<sup>2</sup>, András KEMENCZÉS<sup>3</sup>

Affiliation: <sup>1</sup> Bridge Engineer, Founder of SPECIALTERV Ltd. – [pal.gabor@specialterv.hu](mailto:pal.gabor@specialterv.hu)

<sup>2</sup> Bridge Engineer, SPECIALTERV Ltd., Budapest, Hungary – [desi.attila@specialterv.hu](mailto:desi.attila@specialterv.hu)

<sup>3</sup> Bridge Engineer, SPECIALTERV Ltd., Budapest, Hungary – [kemenczes.andras@specialterv.hu](mailto:kemenczes.andras@specialterv.hu)

## Summary

The design and construction process of the unique cycling bridges at Lake Tisza are presented in this article. The 4 new bridges are parts of the closing segment of the cycle route around the artificial reservoir, which is a popular tourist destination in Hungary, and part of the UNESCO World Heritage. The proximity of the natural environment motivated the use of organic, flowing shapes.

The unique Eger- and Szomorka bridges are independent continuous half-through arch bridges, 8 spans with a total length of 308.46m, and 3 spans with a total length of 86.30 m, respectively. The bridge over River Tisza is a 5 span bridge with a total length of 279.47 m, which is placed on the extended piers of the existing roadway bridge. It consists of 2 deck truss bridges on the side-spans and 3 network arch bridges in the mid-spans. A 5.70 m span bascule bridge over one of the draining canals of the lake was also accomplished as part of the project.

The Eger and Szomorka bridges are internationally unique due to the fact that the Designers have dreamed a continuous sinusoid wave on the supports; which, by twirling under and above the deck, results in a continuous structure. The successful construction of the Tisza River Bridge also required some special and unprecedented construction methods.



Fig. 1. Eger-bridge

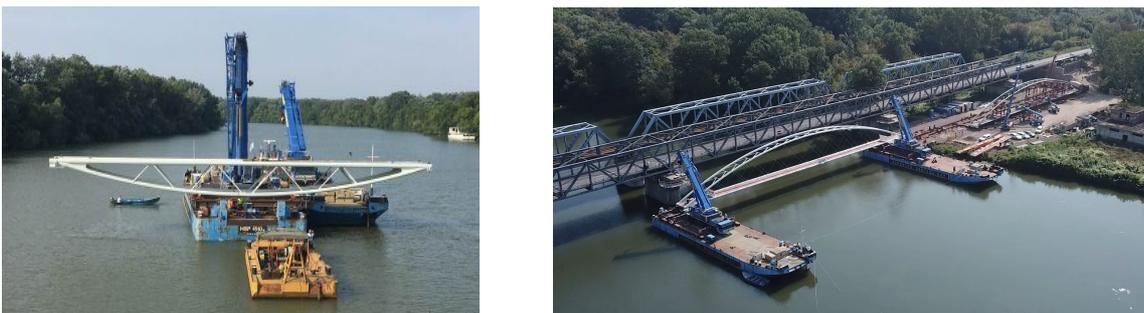


Fig. 2. Shipping of the bridge elements of the Tisza River Bridge



Fig. 3. Tisza River Bridge

**Keywords:** arch bridge; aesthetics; structural concepts; integrated structure; steel deck; pipe form; elastic support; bascule bridge; construction; network arch; sinusoid wave

<https://doi.org/10.24904/footbridge2022.098>

Distributed by  **structurae**