

STRESS RIBBON FOOTBRIDGE OVER THE BYSTRZYCKIE LAKE IN ZAGÓRZE ŚLĄSKIE – DESIGN AND CONSTRUCTION

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Summary

Bystrzyckie Lake is a dam lake created in 1917, located in the northern part of the Owl Mountains, near the village of Zagórze Śląskie (Lower Silesia, Poland). It is located at the foot of the medieval Grodno Castle, picturesquely fitting into the narrow valley of the Bystrzyca River. The lake along with the castle have very soon become tourist attractions of the region. A steel suspension footbridge was built in 1968 in the upper part of the lake. In 2010 technical condition of the footbridge was so bad that it had to be closed. A decision was made to demolish the footbridge and to erect a new one in the same place.

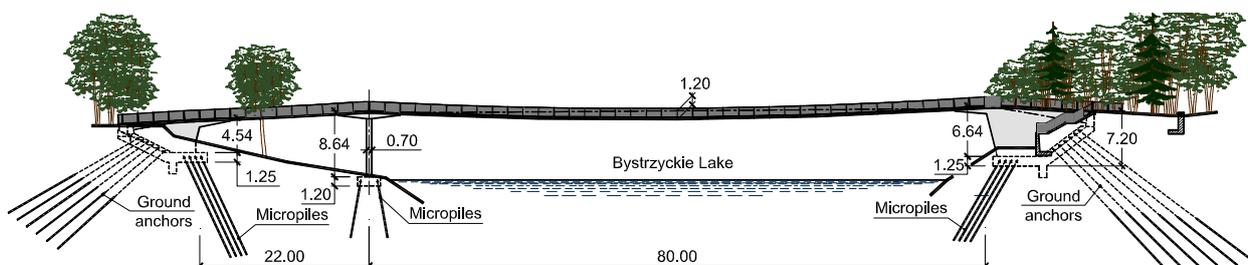


Fig. 1. Stress ribbon footbridge in Zagórze Śląskie – side view

The new footbridge is a stress ribbon structure with two spans of 22.00 + 80.00 m (Fig. 1) and the total length of 125.60 m. Due to large horizontal forces, the load capacity of the foundation is ensured by rock anchors. The bridge deck consists of precast segments with a structural height of 0.32 m and a basic width of 2.40 m, increasing locally to 4.40 m and 4.90 m, made of C40/50 class architectural concrete. The deck is placed on four bearing and prestressing cables. A pedestrian path with a usable width of 2.00 m is located on the deck, widening to 4.00 m and 4.50 m in places of the viewing platforms with GRC benches.

The footbridge in Zagórze Śląskie was opened on August 13th, 2019 and soon has become a landmark and an attraction for tourists visiting the region. It seems that the new footbridge fits well into the surrounding landscape due to the low structural height and interesting architectural arrangement (Fig. 2).



Fig. 2. Views of the footbridge in Zagórze Śląskie (photo: J. Zych, A. Olszewski – STRABAG Sp. z o.o.)

Keywords: stress-ribbon footbridge; precast segments; aesthetics; natural landscape.