

Lavoitobel Bridge (Switzerland)



Project description

The iconic Lavoitobel Bridge, designed by the famous sculptor and architect Max Bill in collaboration with the structural engineer Mirko Robin Ros, is an historic arch bridge in the Swiss Alps and was constructed in 1966 and 1967. It spans the correspondent Lavoitobel valley and counts among Switzerland's famous representatives for bridge construction.

After a detailed and preventative revision by the region's Civil Engineering Department, the authority decided that this bridge does not cover today's traffic requirements. Several maintenance works have hence been planned in order to assure future structural safety.

The entire renovation project comprised, amongst others, new bridge bearings as well improvements for its structural safety.

The bridge is located in canton Grisons, a mountainous region in the south-eastern Swiss Alps



mageba scope

In order to verify that the adjusted structural design and load distribution operated as planned, the responsible engineers decided to install an automated structural health monitoring (SHM) system to monitor the forces acting on the new bearings.

The RESTON®POT bearings were equipped with pressure sensors on the elastomeric pad, enabling the force acting on each bearing to be readily calculated by the connected SHM system. In the event of any sudden or unexpectedly significant change in the force acting on a bearing, or in the load distribution among the different bearings, the system will provide an immediate alarm notification.

The SHM system installed externally with integrated solar panel and separate weather sensor



Highlights & facts

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Type: ROBO®CONTROL permanent monitoring system
Features: RESTON®POT bearings
Pre-integrated sensors on the bearing's elastomeric pad
Installation: 2016

Structure:

Region: Tamins (Canton Grisons)
Country: Switzerland
Completed: 1967
Type: Arch bridge
Length: 200 m (main span 105 m)
Owner: Road Authority of Grisons
Contractor: Road Authority of Grisons
Engineer: Mirko Robin Roš
Architect: Max Bill

One of the vertically oriented bearings at one abutment, equipped with load cells

