Ponte Nanin (Switzerland)

Project description

During refurbishment works to this structure in 2004, over forty years after it was built, modifications to the bridge were carried out to accommodate increased traffic. These changed the bridge's static system, with several of its pillars newly monolithically connected to its deck, meaning that all movement now occurs at one end. Some of the bridge's bearings, which were originally designed to allow sliding movement of the deck, were modified to now act as fixed bearings. In order to provide ongoing confirmation that the impacts of the changes to the bridge's structural system are as anticipated, and that the structure continues to function properly and safely, a monitoring regime was instigated.

mageba scope

The main concern following the refurbishment of the bridge related to the flow of forces through the structure. By measuring the loads in the bearings and observing the force distribution in the bridge structure, these concerns could be immediately allayed based on initial measurements. The permanently installed system was then adapted to prove the durability of the modified system on an ongoing basis, with particular attention to the structure's bearings and expansion joints. For added confidence, the system is equipped with an alarm feature, designed to notify the responsible engineer by email and SMS should any measured value ever exceed its threshold value.

Highlights & facts

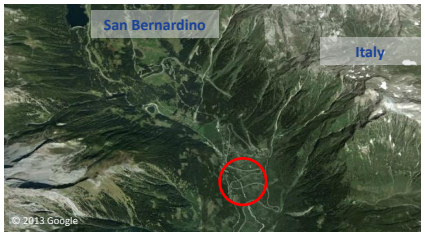
mageba products:

Type:	RESTON®POT bearings, ROBO®CONTROL automated SHM system
Measures:	Displacements, forces, structural temperature
Installation:	2004, still operational

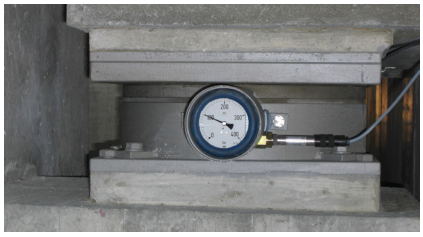
Structure:

City:	Mesocco
Country:	Switzerland
Completed:	1967
Type:	Concrete arch bridge
Length:	192 m
Designer:	Christian Menn

The bridge carries Highway A13 / E43 through the Swiss Alps, near the Italian border.



A RESTON®POT bearing with a pressure sensor, enabling bridge deck forces to be measured.



A solar panel on the bridge meets the system's energy needs – ideal in remote locations.

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