

Obermatt Bridge (Switzerland)



Project description

A timber bridge in Obermatt, Switzerland collapsed in 2005 during a flood period, and the cause of collapse could not be precisely determined. When it was rebuilt in 2007, it had a new safety feature: in the case of severe flooding, it can be raised by up to 70 cm to prevent damage from floating debris in the swollen river.

The main theory combined the impact of flood loading with poor timber strength resulting from high dampness. To mitigate the impact on the timber bridge industry, the University of Berne started a research project to demonstrate the durability of timber bridges if properly designed and maintained.

mageba scope

A ROBO®CONTROL automated monitoring system was installed in 2008, to measure the dampness of the bridge's most critical elements over a period of several years. The system was equipped with an alarm feature, offering immediate notification by email and SMS if a threshold value (25%) of timber humidity was exceeded.

The measurements showed that the moisture content of the bridge's timber was within an acceptable range, and enabled the client to understand the bridge's performance and to recognise any changes as they occurred. The project also provided evidence of the durability of properly designed and maintained timber bridges.

Highlights & facts

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Type: ROBO®CONTROL automated SHM system

Measuring: Moisture content

Features: Alarm notification in case of exceeding of threshold value

Installation: 2008

Structure:

City: Obermatt

Country: Switzerland

Type: Timber road bridge

Length: 32 m

Collapsed: 2005

Rebuilt: 2007

The bridge crosses a river near Berne, Switzerland's capital city.



Sensors on the bridge's timber deck measure moisture content.



Installation of the ROBO®CONTROL automated monitoring system.

