

Leaning Tower of St. Moritz (Switzerland)



Project description

As a result of its location on the side of a hill with unstable soil conditions, this 16th century structure was noted in the second half of the 18th century to have already suffered damage due to earth pressures. Rehabilitation works were regularly required throughout the years because the creeping movement of the slope could not be stopped. In the last major attempt in 1983, three pot bearings were installed to support the tower. In spite of this, the tower continued to lean further, necessitating rehabilitation in 2013 to reduce the angle of leaning.

Technical approach

In order to reduce the tower's tilt, it was decided to lower it at the hill side by 40 mm, by modifying the bearing at that location. This would have the effect of reducing the deviation from vertical at the top of the tower by 160 mm.

Four hydraulic jacks with a total capacity of 8000 kN were used, placed on guided sliding equipment in order to resist horizontal forces. Additional vertically installed jacks enabled the tower's position to be adjusted during the lowering works.

Highlights & facts

mageba services:

Type: Lifting and moving of structures

Carried out: 2013

Structure:

City: St. Moritz

Country: Switzerland

Type: Late medieval tower (masonry)

Built: 1570

Height: 33 m

The Leaning Tower is located in the town centre of St. Moritz, Switzerland



Special sliding equipment ensures the safety of the tower during the lowering works



Modification of an existing pot bearing

