

Monitoring Rebuilding Hotel Palace, Luzern

Automatic height monitoring with liquid levelling and total stations



- 📍 Luzern, Switzerland
- 👤 Civil Engineer: Itten + Brechbühl, Zürich
- 🕒 2018 - 2020

Expertise

TEDAMOS

Automatic systems

- ◆ 50 liquid level sensors
- ◆ 1 Leica precision total station with 20 measuring points
- ◆ Web-based, password-protected customer portal with 24/7 access

Further information on the **TEDAMOS** solution can be found at <http://en.tedamos.ch>

Contact

www.swissmonitor.ch

The Hotel Palace Lucerne is a hotel of the Belle Époque and was built between 1904 and 1906. Since the end of 2018, the hotel has been completely renovated for CHF 100 million over a period of approximately one year.

As part of this renovation work, load changes will occur through lowering work in the basement on the one hand and through the complete gutting and conversion of the 5th and 6th floors on the other. As the historic building already showed minor cracks before the statically far-reaching conversion work, these load changes had to be permanently monitored with an automated height monitoring system.

The civil engineers had put out to tender an automated liquid levelling system on 65 statically relevant supports. The on-site inspection revealed that a liquid levelling system inside the building would obstruct the construction work too much or that the risk of damage to the measuring system caused by work with roller scaffolds was too great.

Together with the civil engineers, it was decided to install a combined measuring system consisting of several liquid levelling systems and a precision total station inside the building. The measuring system has been in operation since December 2018 and provides reliable and high-precision changes in height of the building in the sub-millimeter range!

Our services

- ◆ Installation of a combined height monitoring system consisting of 4 liquid levelling systems and a precision total station.
- ◆ Operation of the system during the one-year rebuilding phase.
- ◆ Automatic measurements at hourly intervals
- ◆ Automatic alarming when limit values are exceeded