

## Monitoring of the tram track above the newly built metro station (C21)

Warsaw, Poland

It is with great pleasure that we present to you our next project in Warsaw. This time located in Brdno - above the newly built C21 station of the Warsaw Metro.



### The project

Our company was responsible for the precise monitoring of vertical displacement using a precise hystrostatic leveling system (HLS). We were commissioned by KellerPolska and General Contractor Gulermak to install dozens of sensors, allowing us to monitor concrete slabs that are part of the construction of two active tramway tracks. Our system supervises the entire high-pressure injection process, for which KellerPolska engineers were responsible.

## The challenge

The complete system was installed and configured in just a few days. The installation was carried out during nightly maintenance (Engineering Hours) from 0:00 to 3:30, which required us to work at an extraordinary pace and coordinate well with maintenance services.

## The solution

The system operates in automatic mode 24/7, recording data in real time and then transmitting it to the advanced QuickView monitoring platform. Configured in this way, the system allows work to be carried out safely and responsibly without disrupting heavy passenger traffic.

## Project facts

### Owner(s)

Gülermak Ağır Sanayi İnşaat ve Taahhüt

### Keller business unit(s)

GEO-Instruments Polska

### Main contractor(s)

Keller Polska

### Engineer(s)

Tomasz Ziętkowski - Monitoring Project Manager  
Grzegorz Dziedzic - Monitoring Engineer  
Mateusz Orsicz - Software Specialist  
Patryk Harlender - Monitoring Specialist  
Paweł Faryna - Physical worker, Foreman, Welder

### Services

Deformation monitoring

### Markets

Rail

### Technologies

Hydrostatic levelling cells  
Wireless sensors