Structural & Excavation Monitoring

San Quirico District, Genova









Background

In the San Quirico district of Genoa, a hydraulic upgrade project was recently completed along the Rio Fulle stream, involving the construction of a new channel and a reinforced concrete culvert section. The project, aimed at securing an area at risk of flooding, required deep excavations near existing buildings and the relocation of underground utilities along the busy Via San Quirico. Given the sensitivity of the site, it was essential to implement a reliable monitoring system capable of promptly detecting any movements, deformations, or signs of structural settlement in the vicinity of the construction area.

The solution

To ensure safety during the most critical phases of the construction work, Synthesis selected Capetti Elettronica's ***WineCap ™*** wireless systems, installing an automated monitoring solution active throughout the entire duration of the project. On the adjacent buildings, biaxial inclinometers were installed to detect potential deformations and structural settlements, along with crack monitoring dataloggers equipped with external transducers to measure the formation and progression of any cracks, and laser distance meters to monitor possible subsidence phenomena. All collected data was automatically transmitted and made available on a web-based platform, accessible at all times by authorized personnel for timely and informed decision-making.

The result

The solution ensured accurate control of the structural conditions of the surrounding buildings, providing reliable and timely data to help prevent risk situations. The ease of installation, operational autonomy of the devices, and remote data access all contributed to enhancing the overall efficiency and safety of the construction site.



The winning choice WineCap

- ✓ WSD19TII (dual-axis inclinometer)
- ✓ WSD15IIDIST-FX (laser distance meter)
- ✓ WSD12T-DD + PZ12-A-025 (datalogger + crack displacement sensor)

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