



Buildings

TRIMBLE MONITORING SOLUTIONS

SOLUTIONS FOR SAFE STRUCTURES

The Role of Monitoring

Monitoring installations are crucial for buildings which are subject to vibration, ground movement, extreme weather conditions and construction activities.

It is important to detect movements, vibrations, structural changes and responses of buildings to these local conditions in order to identify potential failure modes.

Monitoring provides the information needed to support a safe living and working environment by continuously verifying the ability of buildings to perform their intended function.

The growth in the number of tall buildings and MRT projects requiring the construction of tunnels beneath buildings results in an increased demand for building monitoring.

The Focus of Monitoring

The performance of buildings subject to seismic and micro seismic activity and the influence of adjacent or underground construction can be monitored by the system.

The integrity and stability of a building after a significant seismic event may be rapidly determined using the data captured by the monitoring system.

Lateral movement, inclination, fracturing, heaving, settlement and fatigue resulting from activities such as tunneling, excavation, piling and drilling may be tracked.

Trimble 4D Control

Trimble® 4D Control™ software is the key element of the Trimble Monitoring system. The modular design facilitates an industry specific solution capturing data from GNSS, optical, geotechnical, seismic and metrological sensors.

The data is processed using advanced, state-of-the-art algorithms and presented in a powerful, yet user friendly Web Interface. It provides a variety of visualization and analysis tools to identify potential failure scenarios.

A fully featured computation parser can be used to create customized observables presenting information of specific interest to the analyst.

Frequency domain analysis using Fast Fourier Transforms can be performed to determine changes in the physical characteristics of a building.

Boolean comparators are used to integrate data from GNSS, optical, geotechnical, seismic and atmospheric sensors to create complex alarm. Alarm notifications are issued by email and SMS to selected recipients and the system may also activate audible and visual alarms.

Designed for Demanding Environments

The Trimble Building Monitoring Solution is designed specifically for the seismic, structural, modal and survey monitoring analyst.

It complies with the building code requirements of cities in seismically active areas in the United States such as Los Angeles, San Francisco.

Intricate data from multiple sensor types is converted into meaningful information from which informed decisions can be made with confidence.

Key Features

- ▶ Automated, real-time monitoring system
- ▶ Structural health monitoring
- ▶ Seismic response monitoring
- ▶ Construction response monitoring
- ▶ Post disaster structural integrity monitoring





TRIMBLE 4D CONTROL MONITORING SOFTWARE

A powerful monitoring software that integrates GNSS, optical and geotechnical sensors to collect and manage data, provide computation and analysis, visualization and mapping and alerts and alarms.

TRIMBLE S7, S9 TOTAL STATIONS

Advanced total stations that combine Trimble FineLock™ technology with long-range, distance measurement to provide fast and precise monitoring measurements.

TRIMBLE NETR9® TI-M GNSS RECEIVER

A full-feature, top-of-the-line receiver with an industry-leading 440 channels for unrivaled GNSS multiple constellations tracking performance intended for monitoring applications.

TRIMBLE REF TEK 130 SMA

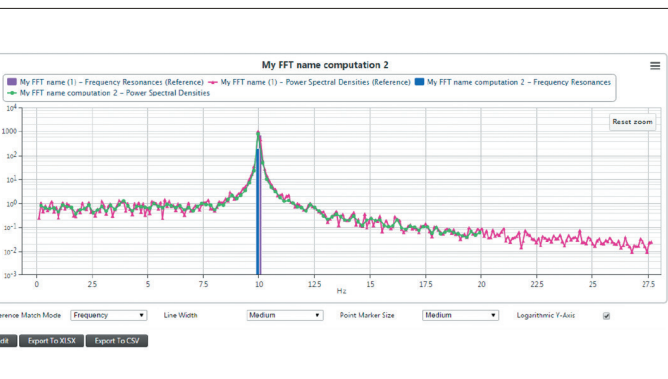
A strong motion 24-Bit Strong Motion Accelerograph that combines the third generation broadband seismic recorder and an advanced low-noise, force-feedback accelerometer.

TRIMBLE REF TEK STRONG MOTION ACCELEROMETERS

Powerful devices that measure the acceleration of motion of structures as well as subsurface monitoring of the ground.

TRIMBLE DINI® DIGITAL LEVEL

A digital height measurement sensor for any job site where fast and accurate height determination is required.



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