

LOCATION: STOCKHOLM, SWEDEN

# Tunnelling beneath historic buildings

City Line is a 6 km double-track railway to be built partly under the oldest part of Stockholm. The City Line will solve the capacity problem for rail traffic through the city. Currently there are just two tracks through the city serving 500 trains per day. The City Line will eliminate this bottleneck by doubling the capacity of rail services through central Stockholm. In addition, two new underground stations will be built near existing underground and bus services. The estimated total cost of the City Line is 2 billion EURO.

## Just below one of Stockholm's biggest churches

The company, Ansvarsbesiktning AB, has an extensive role in the project regarding risk analysis, measurement and support of blasting control. Blasting will occur close to ancient palaces, above and below underground railway tunnels and just below the Gustav Vasa church. The church stands 60 m high and was built in the Italian new baroque style with 1200 seats and is one of Stockholm's largest churches. The altar of the Gustav Vasa church is Sweden's largest baroque sculptures. Originally, it was built for Uppsala cathedral by the statue maker Burchard Precht and anointed in 1731. The material is gypsum and other fragile materials.

## Lean measuring by INFRA

A lot of blasting has to be done during If another measurement system was selected, the costs would be quite large due to the man hours required to handle the equipment and to read and collect the data. During the 8 year construction period, use of INFRA will save a lot of man hours. Instead of measurement specialists monitoring thousands of measuring points, INFRA measures and collects data autonomously year after year very reliably. A yearly calibration is all that is required.

## Single cable setup for vibration, noise and air shockwave measurement

The sensors are easily connected via a network cable that also provides the necessary power for the sensors. 16 digital sensors can be connected to one network. The sensors have unique



identities and the master unit requires no calibration. Built in intelligence uses microprocessors for converting analogue signals to digital information. A digital

signal processor (DSP) filtrates, compensates and detects the signals using selected standards which gives the user the reliable results desired.