Prosig Case Study

Noise From The Underground

The customer needs to check whether noise and vibration from an underground train line is going to cause a nuisance in a proposed multi–storey housing block. A sophisticated measuring system based on a triaxial accelerometer is connected to a Prosig P8000, which is used to capture the data. The results of further analysis are used to determine if the noise and vibration of the trains will fall within prescribed limits.

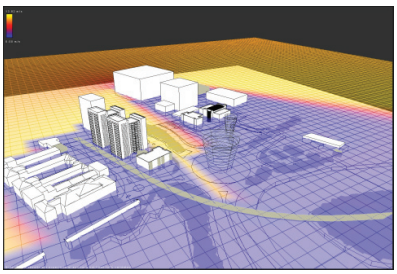
Noise From The Underground

It is well known that underground rail systems (subways) cause ground vibration. The question is - is possible to predict how new buildings constructed near or above an existing underground will be effected? That was asked of an international leading civil engineering consulting firm who came to Prosig for a measurement and analysis system.

In order to find the answer a detailed study of the noise and vibration transmitted from an underground to the ground surface was required. Before construction at the building sites had begun it was possible to dig boreholes which could be used to monitor vibration level at various depths.

Using both Prosig hardware and software and low frequency triaxial accelerometers with extremely high sensitivities, the engineers were able to build a 3D map of the noise and vibration transmission across the potential sites.

Armed with information it was possible to cross reference this data with other sites where data had been taken before and after construction in the buildings. Therefore, it is possible to simulate how the underground vibration would affect buildings before they were built.



System consists of

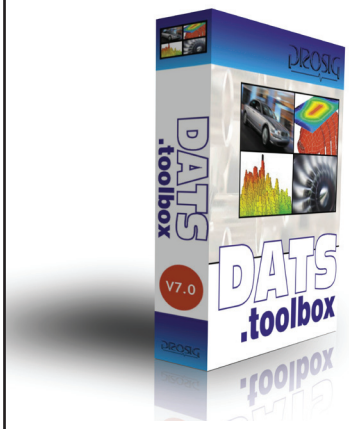
P8012

24-bit data acquisition system

1 x P8012 Chassis
2 x 8402 4ch IEPE, Direct

DATS

Analysis software



1 x DATS.toolbox software

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