



BRISCONNECTIONS

airportlink

northernbusway
WINDSOR TO KEDRON

airportroundaboutupgrade

Environmental Monitoring – Noise, dust & vibration

Thiess John Holland is committed to protecting the existing environment and managing environmental impacts during construction of the Airport Link, Northern Busway (Windsor to Kedron) and Airport Roundabout Upgrade Projects.

Noise Monitoring

What is noise monitoring?

Noise monitoring is a process used for assessing noise levels generated from construction activities.

How do you monitor noise?

A noise monitor is used during attended monitoring sessions at residential properties or commercial establishments.

Noise monitoring on the Airport Link project is undertaken in line with relevant Australia standards/guidelines.

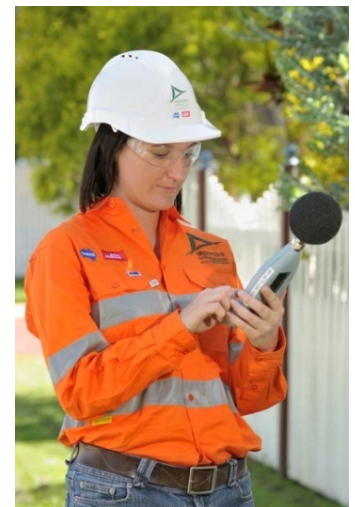
15 minute sessions are undertaken where the noise monitor records noise levels in 10 second blocks. During this time, noise sources are identified (i.e. motorbike, lawn mower) and noted in 10 second blocks and then recorded on a field sheet by TJH environmental staff.

How do you measure noise?

Once the data is recorded, it is downloaded onto a computer and analysed against the noted down observations. The information produced provides a variety of results.

The results we are interested in for monitoring compliance with the Coordinator General's conditions include:

- **LAeq** – Steady noise level throughout the period
- **LA10** – Non steady noise level throughout the period (this is the noise level exceeded 10% of the time)
- **LAMax** – (Night time only) – Loudest noise level recorded within the session



Attended noise monitoring

By noting down observations we are able to analyse each minute (and even 10 second block) of the 15 minute monitoring session, to identify the noise source which is contributing to the overall result.

Once this process is complete, we can identify the event that caused the noise disturbances or noise levels to fluctuate.

Vibration Monitoring

TJH uses vibration monitoring to assess the level of impact from various sources on the project.

Various activities required for the construction of the project have the potential to generate vibration impacts at receptors located in the vicinity of the construction corridor.

Are there different types of vibrations?

Yes, there are three different types of vibrations.

These can be characterised in the following ways:

- Transient (or impulsive) vibrations – e.g. blasting
- Intermittent vibrations – e.g. rock hammering, impact piling and vibrating rollers
- Continuous vibrations – e.g. Roadheader machines and Tunnel Boring Machines.

How do we measure vibrations?

When a controlled activity is occurring, such as blasting, a vibration monitoring instrument is used, called an accelerometer, which is attached to the surface under investigation.

The data or vibrations recorded by this device are observed by a meter and used for analysis to determine the types and levels of vibrations caused by the activity.



Installation of vibration monitor

shape and size and can be solid or liquid. When we measure dust, we look at PM10 measurement:

- **PM10** – These are big particles below 10 micrometres (approximately up to 100 times thinner than a human hair). These particles are usually caused by crushing and grinding rocks and soil. PM10 levels are associated with dust which may affect health.

How do we measure dust fall-out in residential areas?

In order to determine if a particle source poses an unacceptable level of nuisance to nearby residents, a dust fall-out deposit gauge is used.



Dust deposition gauge

This monitoring device is a glass funnel supported in the neck of a large glass bottle, which can be mounted in a steel bucket on an elevated stand. This gauge is left for one month to ensure a measurable quantity of dust can be collected. At the end of this period the gauge is returned to a laboratory for analysis.

We measure the rate of dust fallout by dividing the weight of ash material (grams) collected by the cross-sectional area of the funnel (meters²) and the number of days over which the sample was taken.

The units of measurement are in milligrams (or grams)/meter²/month and our monthly goal, set by the Coordinator General is no greater than 4 grams/metre²/month.

As with noise and vibration, Australian standards/guidelines are used to determine dust monitoring protocols.

Visit www.brisconnections.com.au to view the project's monthly environmental monitoring report.

For further information about the projects:

W: www.brisconnections.com.au E: contactus@tjh.com.au

T: 24 Hour Community Hotline 1800 721 783 (freecall)