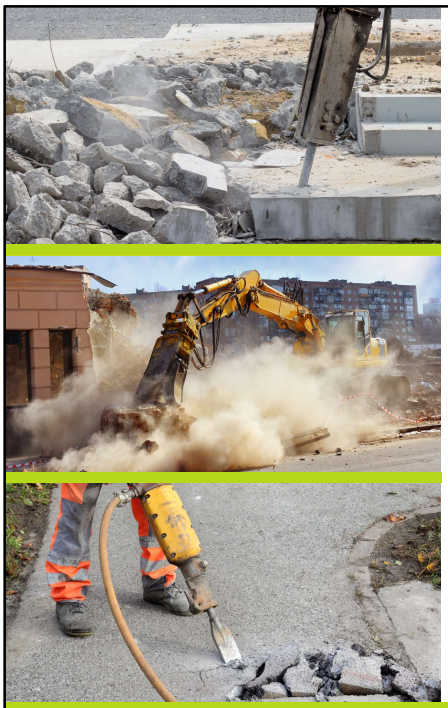
Environmental and Personal Monitoring

Monitoring Hazards in the Workplace

RVTGROUP™
Protecting long-term health on site



Why do we need monitoring equipment?

Monitoring enables site supervisors to fully understand the noise, dust, gas and vibration risks associated with their project.

By acknowledging the hazards, potential harm can be minimised.

If you don't measure it, you can't manage it!

Construction Site Hazards

Monitoring enables site supervisors to fully understand the risks associated with their project.
By acknowledging the hazards, potential harm (to both people and the environment) can be minimised.

Assessing and analysing hazards provides an important proof of compliance for the HSE, and the monitoring records demonstrate that responsibility for on-site safety has been taken seriously.

This tool box talk is going to look specifically at:

- Noise monitoring
- Dust monitoring
- Gas monitoring
- Vibration monitoring

Noise Exposure

Previous industry reports have found that:

There was a **25%** increase in the number of noise infringements occurring on UK construction sites in 2019 (BSG).

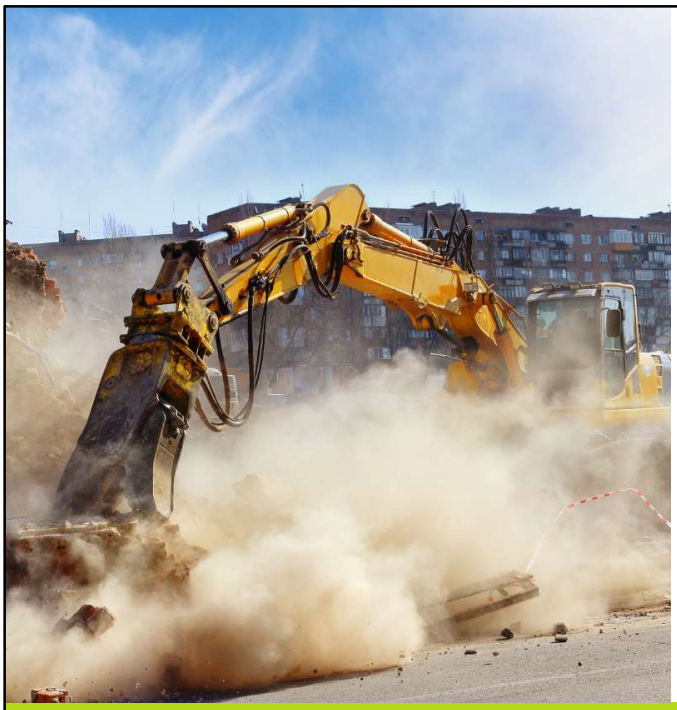
21,000 workers are reported to be living with work-related hearing problems.

Depression and a reduction in cognitive ability are also side effects of living and working alongside excessive noise.

Noise Exposure
On a construction site, excessive noise can be caused by anything from noisy power tools and machinery, to cleaning and mechanical operations. The Control of Noise at Work Regulations 2005 (the Noise Regulations) is in place to protect workers, and those living and working nearby, from excessive noise.

Environmental Impact:
Noise pollution can cause damage to natural wildlife habitats and disturb local residents. It can also cause reputational damage to your company and invoke a potential site closure by your local authority.

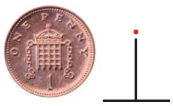
Personal Impact: Noise exposure can cause long-term hearing damage, and in the most extreme cases, deafness. This can be caused by repeat exposure to excessive noise from site activities such as grinding, breaking and drilling. Other health impacts can include tinnitus, impaired memory and mental health issues including stress and depression.



Dust Exposure

Previous reports have found that 40% of construction sites failed HSE dust level safety checks.

COSHH regulations have set a limit on the amount of dust that workers can safely breathe in, and when compared to a penny, it is the size of a **grain of salt**.



The amount of **silica dust** considered safe to absorb in a day.

Dust Exposure
The construction industry can involve exposure to all manner of dust particulate, from cement and asbestos to grain, silica and wood. The Control of Substances Hazardous to Health (COSHH) says employers must protect workers against the risks from hazardous construction dust. Maximum dust exposures are set by Workplace Exposure Limits (WELs) and keeping below thresholds demands diligent monitoring.

Environmental Impact
Inhaling dust particulate can cause personal health issues to residents surrounding a project. It can also cause damage to cars which could result in excessive cleaning costs being billed to your company.

Personal Impact:
Dust exposure can lead to a range of illnesses that encompass eye and nose damage, rashes and other forms of dermatological conditions. Other serious health conditions include; asthma, silicosis, asbestosis, mesothelioma, COPD and lung cancer.

Gas Exposure

Gases present a **serious risk** of explosion.

Some workers could potentially be exposed to **invisible noxious gases**.

Gases vary in their **toxicity** and effects.

Gas Exposure
Construction, civil engineering and manufacturing projects can generate many dangerous gases and fumes including asphalt fume, diesel and chemical/volatile organic compound gases. Some gases, when present in the air, can act as asphyxiants by reducing the oxygen content to such an extent that life cannot be sustained.

Environmental Impact
Gases present an explosion risk which is an incredibly serious risk to the public.

Personal Impact: Workers can suffer internal chemical burns, respiratory problems, and nervous system damage; if the conditions are bad enough, the result can be fatal.

Vibration Exposure

Excessive vibration levels could be deemed a **public nuisance** and your project could be **paused** while assessments and recommendations are made.

Further more, vibrations from excavation and boring could cause **structural issues** for surrounding buildings, and should therefore be monitored closely.

Vibration Exposure
Machinery such as breakers, pneumatic tools, generators and demolition equipment can easily breach the maximum vibration levels defined by the HSE and/or local councils. Local authorities and the Environment Agency have a responsibility to investigate and penalise noise and vibration nuisances under the Environmental Protection Act 1990.

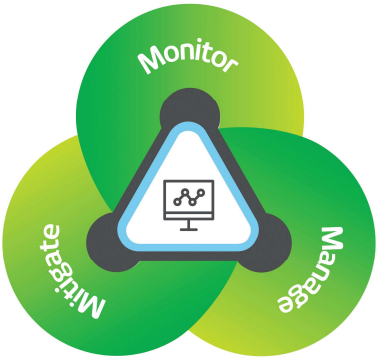
Environmental Impact
Vibration carries the risk of property damage and can cause the collapse of surrounding structures. Vibration has the capability to damage buildings, disrupt building occupants and interfere with sensitive activities and equipment.

Personal Impact
Common occupational health complaints in relation to vibration are for Hand-Arm Vibration Syndrome and Carpal Tunnel Syndrome. Vibration can also affect the musculoskeletal system and can cause impairments and disabilities.

HSE 2018 Statistics
- 180 claims for Hand-Arm Vibration Syndrome
- 145 claims for Carpal Tunnel Syndrome

Monitor, Manage, Mitigate.

A proven methodology, devised by the RVT Group, to ensure effective control of all on-site health hazards.



Monitor: Identify the activities being undertaken and whether noise, dust, gas or vibration could pose a risk to the individual or the wider environment.

Manage: The HSE define maximum exposure limits over 8 hours, therefore handheld spot checks are not always suitable. Implement a continuous monitoring system and receive instant message alerts if pre-set parameters are exceeded.

Mitigate: If readings are outside the upper limits, you need to install adequate control equipment, such as noise barriers or dust extraction units. RVT are always on hand to advise you which hazard control equipment will be most effective.

RVT offers a wide range of Monitoring solutions

Monitex Area Noise Monitor
This monitor has web-based software that allows you to measure noise levels on-site in real-time, with no need to install complicated software. It also has automatic reporting and SMS/email alerts. This noise monitor is ideal for environmental/ area monitoring – It can be set up before the project begins to take base measurements, and then continue to monitor noise levels throughout the project to ensure that you do not breach regulations.

Monitex Portable Noise Level Warning System
The Portable Noise Level Warning System provides a visual indication of noise levels on site (red, amber, green).
This unit is ideal for assisting with personal protection; the traffic light system makes it easy for workers to identify when hearing protection is required.

Monitex Area Dust Monitor
This unit is designed for those who need to monitor and manage dust and particle emissions continuously and in real-time. It can be used indoors or outside, making it suitable for both environmental monitoring and personal monitoring. COSHH Regulations explain that exposure should be calculated over an 8 hour time weighted average, therefore you need to have continuous real-time monitors in place to

calculate exposure accurately.

Monitex Hand-Held Dust Monitor
This unit is a rugged, hand-held, data-logging meter for real-time detection of airborne dust, fumes and aerosols. It is ideal for walk-through surveys of ambient and indoor workplace environments.

RVT Monitoring Solutions For Vibration and Gas

Monitex Vibration Monitor

Monitex BM25 Area Gas Monitor

Monitex P55 Hand-Held Gas Monitor

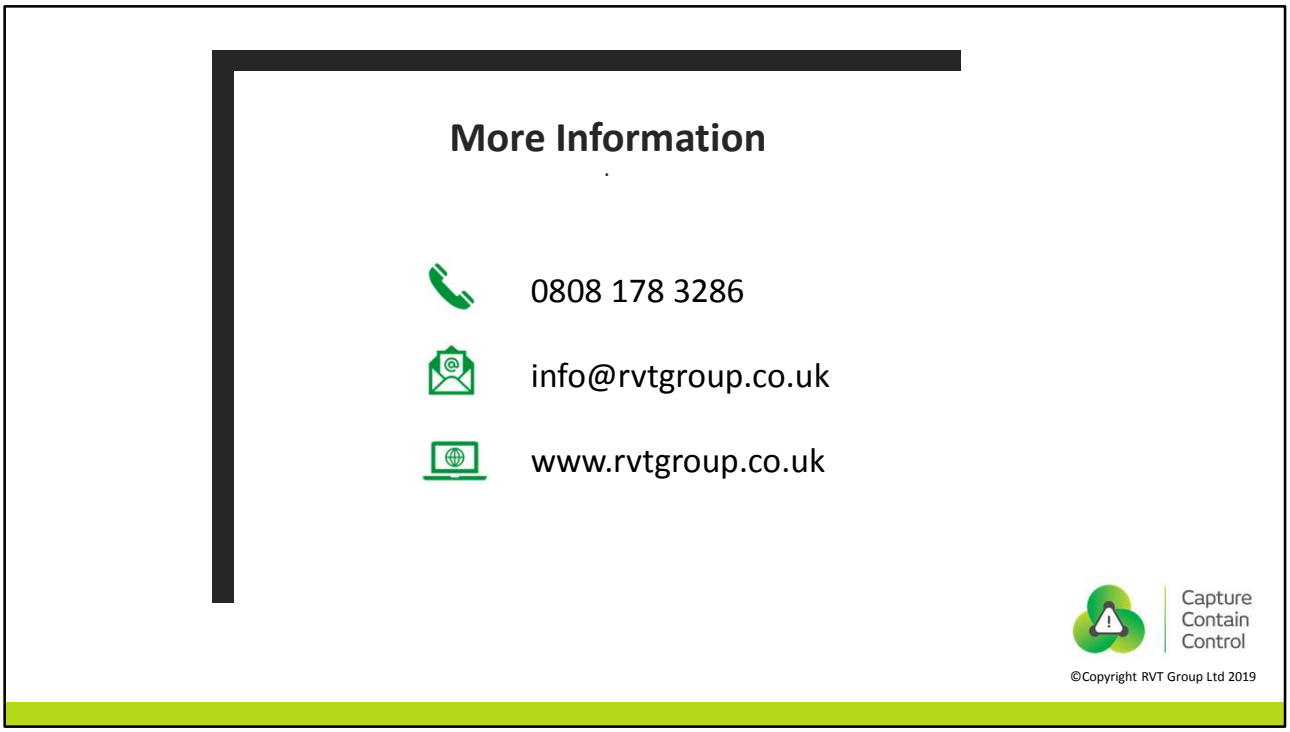
Monitex Vibration Monitor
This Vibration Monitor is designed for environmental monitoring. It consists of telemetry field instruments and sensors, which once installed on-site, will continuously record accurate vibration measurements. Users are given access to the AvaNet Portal, where they can manage real-time vibration data online.

Monitex BM25 Area Gas Monitor
Capable of monitoring from one to five gases through diffusion or sample draw, the BM25 packs the benefits of a fixed system area monitor into an easily transportable, yet rugged, instrument. The monitor can send automatic SMS and/or email alerts.

Monitex P55 Hand-Held Gas Monitor
The P55 has been tailored to detect up to four gases with its toxic and catalytic sensors, photo ionisation detectors, and infrared capabilities. It features a very loud (95dBA) audible alarm, together with a highly visible alarm.

To learn more or to download a spec sheet visit:
https://rvtgroup.co.uk/hire-equipment/monitoring/equipment

If you need any support or advice on Monitoring, contact an RVT consultant on 0808 178 3286.



RVT have a range of free educational resources available at **www.rvtgroup.co.uk/insights-resources**

This includes; tool box talks, best practice guides, posters, whitepapers, videos and you can also book CPD presentations.

To learn about our dust, fume, noise, monitoring, ventilation and climate control equipment please visit; **www.rvtgroup.co.uk/hire-equipment**

To request a FREE site visit or to discuss your project by phone, call us on **0808 178 3286**.

For general enquiries please email **info@rvtgroup.co.uk**
If you would like a quote for hire equipment please email **enquiries@rvtgroup.co.uk**

You will also find us on LinkedIn **@RVT-Group**