

Noise Management Handbook

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Definitions

[The University Glossary](#) and the following definitions apply to this handbook:

Term:	Definition:
Environmental Noise	Environmental noise is an accumulation of unwanted noise pollution that occurs outside.
Exposure Standard	A noise exposure of LAeq,8h of 85 dB(A) or an LC, peak of 140 dB(C).
Hazard(s)	Situations or things that have the potential to harm a person, also referred to as 'Risk Factor' in Riskware.
Hierarchy of Controls	The hierarchy of controls shows ways of controlling risks, ranked from the highest level of protection and reliability to the lowest. This hierarchy is outlined in Section 3 and in the University's Health and Safety Hazard Identification and Risk Management Guideline .
Noise Assessment	An assessment that identifies workers at risk of hearing loss, the source of hazardous noises, and existing and possible control measures, as outlined in the Managing Noise at Workplaces 2002 Code of Practice .
Noise Hazard / Hazardous Noise	Any unwanted or damaging sound that has the potential to harm a person.
Nuisance Noise	Nuisance noise is noise that does not necessarily cause hearing loss but may have a psychological effect and impact on performance.
Occupational Exposure Limit (OEL)	Levels of agents in workplace air, which it is believed are low enough to protect nearly all workers from adverse health effects over a series of eight-hour (8h) shifts for a working lifetime.
Ototoxic Substance(s)	A substance that can produce adverse effects on hearing or the balance functions of the ear. Refer to Appendix 1 - Table 3 for a list of possible ototoxic substances.
Prescribed Workplace	A workplace where a noise assessment has established that workers in the work area may be exposed to noise above the occupational exposure limits and that this is typical of their work environment.
Reasonably Practicable	That which is, or was at a particular time, reasonably able to be done to ensure health and safety, taking into account and weighing up all relevant matters including: (a) the likelihood of the hazard or the risk concerned occurring (b) the degree of harm that might result from the hazard or the risk (c) what the person concerned knows, or ought reasonably to know, about the hazard or risk, and ways of eliminating or minimising the risk (d) the availability and suitability of ways to eliminate or minimise the risk, and (e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with

Term:	Definition:
	available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.
Responsible Officer	A University worker nominated as responsible for managing contractors or consultants working in the relevant School or Services Centre.
Risk	The possibility that harm (death, injury, illness, or damage) might occur when exposed to a hazard.
Riskware	ECU's online risk management software solution used for recording enterprise and health and safety risk assessments and registers, incidents and hazards, Radiation Biosafety and Hazardous Substances applications, Workers' compensation and injury management data, fieldtrip event and travel management and audits and inspections.
Work Areas	An area within a workplace where workers undertake their tasks and activities.
Workplace	A place where work is carried out for a business or undertaking, including any place where a worker goes, or is likely to be, while at work.
Worker(s)	Any person who carries out work for a PCBU, including work as an employee, contractor, subcontractor, self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' and volunteers.

Introduction

The intent of this handbook is to provide information regarding the responsibilities and procedures for noise management within Edith Cowan University (University).

It applies practical procedures and guidance to those working around hazardous noise or with ototoxic substances that could result in hearing impairment or damage.

This handbook is in line with the University's goal in providing and maintaining, so far as is reasonably practicable, a safe and healthy working and learning environment for its workers, students, and visitors.

Background

Excessive noise in the workplace presents a risk of hearing damage and other health problems. The parts of the ear that process high frequency sounds are usually the first to be affected. The degree of hearing loss depends on the loudness of the noise and how long an individual is exposed to it.

Long periods of repeated exposure to workplace noise between 75 and 85 dB(A) present a small risk of hearing disability to some people. However, as noise levels increase, so does the risk. Noise above 85 dB(A) increases the risk substantially.

This handbook was developed to replace the Noise Management policy.

Organisational Scope

This handbook applies to the University Community.

Responsibilities

Director, Human Resources Services Centre

The Director, Human Resources Services Centre has overall responsibility for ensuring the University complies with its legal obligations as they relate to Noise Management.

Executive Members, Deans, and Directors

The Executive Members, Deans, and Directors are responsible for establishing strategic and operational environments that support and empower the Associate Deans, Managers, and Supervisors, and all people within their areas, to understand and enact the procedures outlined in this handbook.

Their specific responsibilities include ensuring:

- suitable facilities and resources are available to create a safe and healthy workplace;
- workplace inspections are completed to identify noise, vibration, and other hazards;
- workers and Students are not exposed to noise levels that exceed the exposure standard;
- that workplace noise and vibration issues are highlighted at induction and that proper training of skills to manage noise and vibration is conducted;
- that all workers working in a prescribed workplace are provided with audiometric testing;
- that plant and equipment undergo a risk assessment before purchasing and that it adheres to the [Australian Standard Occupational Noise Management Part 1 \(AS/NZS 1269.1\)](#).

Associate Deans, Managers, and Supervisors

The Associate Deans, Managers, and Supervisors, with the strategic and operational oversight of Executive Members, Deans, and Directors, are responsible for the implementation and monitoring of the procedures within this handbook.

Their specific responsibilities include:

- ensuring incidents, exposures, hazards, concerns, complaints, and issues are reported and recorded via Riskware;
- ensuring job descriptions accurately reflect potential noise and vibration exposure;
- ensuring workers and Students are not exposed to noise levels that exceed the exposure standard;
- conducting an initial risk assessment to identify noise hazards;
- managing noise hazards by implementing effective noise controls;
- ensuring workers are aware of the risks associated with expected noise hazards during their induction and training is provided to mitigate the risks;
- identifying noisy work areas and hearing protection zones;
- providing appropriate hearing protectors and supplies for maintaining them;
- ensuring equipment is properly maintained to reduce noise.

Project Managers

The Project Managers are responsible for following the requirements of this handbook when planning, designing, and developing new, temporary, or modified work areas.

Responsible Officers

The Responsible Officers are responsible for ensuring all contractors and sub-contractors work in accordance with this handbook, including wearing hearing protection as required.

Workers and Students

Workers and Students are responsible for ensuring they:

- report all incidents, injuries, hazards, and near misses to their immediate supervisors;
- follow instructions from Staff and comply with the procedures outlined in this handbook;
- complete a risk assessment prior to performing work;
- implement relevant controls as far as is reasonably practicable;
- correctly wear and maintain hearing protection devices when exposed to Hazardous noise;
- take reasonable care to avoid adversely affecting the hearing of others who may be affected by their operations;
- notify supervisors when they notice any defects or have concerns about any controls in place;
- complete any OHS training required to partake in the noisy operations;
- participate in the University’s health monitoring, such as routine hearing tests, where relevant.

Safety and Employment Relations Team

The Safety and Employment Relations Team is responsible for currency of information and provision of advice relating to the procedures within this handbook.

Their responsibilities also include:

- providing guidance and support to Schools and Centres in the identification and assessment of noise hazards, development and implementation of noise management plans, and selection of hearing protection devices;
- overseeing the process for pre-placement baseline audiometric testing and routine audiometric testing.

Digital and Campus Services

The Digital and Campus Services is responsible for ensuring work areas adhere to the Safety in Design principles outlined in the University’s [Planning and Design Guidelines](#).

Noise Management Procedures

1. Identifying Noise Hazards

- 1.1. The first step in the risk management process is to identify all hazards associated with hazardous noise as per the *Work Health and Safety Hazard Identification and Risk Management Guideline*. This involves locating things or situations that could potentially cause Harm in the physical work environment, such as equipment, substances, tasks, and work design.
- 1.2. Hazards can be identified by reviewing the workplace and the tasks performed. Potential noise hazards can be identified by:
 - a. Information provided by suppliers and manufacturers on potential noise exposure levels;
 - b. Hazard and incident reports;
 - c. Workplace inspections;
 - d. Audits;
 - e. Walk-through surveys;
 - f. Forman noise surveys;
 - g. Direct observation of work tasks being performed;
 - h. [Hazard Risk assessments](#) of new work areas, equipment purchases, tasks, and activities.
- 1.3. Where a potential noise hazard is identified, it should be [reported](#) and investigated in [Riskware](#).
- 1.4. If the investigation identifies that a noise assessment should be conducted, then the assessment should be completed by a trained professional in accordance with the procedures in the [Australian Standard Occupational Noise Management Part 1 \(AS/NZS 1269.1\)](#) and the [Managing Noise at Workplaces 2002 Code of Practice](#).

The objectives of a noise assessment are to:

- a. identify all workers likely to be exposed to noise above the exposure standard;
- b. obtain information on noise sources and work practices to help determine the measures that should be taken to reduce noise exposure;
- c. check the effectiveness of measures taken to reduce noise exposure
- d. assist in the selection of appropriate personal hearing protectors;
- e. delineate areas that require hearing protection; and
- f. evaluate the effectiveness of controls taken to reduce noise exposure.

2. Noise Management Plans

- 2.1. Where potential or actual noise exposure has been identified, a noise management plan should be developed to implement control measures, as outlined in Section 3 and Appendix 2. This maybe completed in Riskware as part of the action plan or an individual noise management plan for the activity.
- 2.2. A noise management plan should include the people responsible for each action, target dates, and appropriate resourcing. Copies of the noise management plan should be available to all workers and safety and health representatives on request, and should

form part of the information, induction, and training activities for workers in the work area.

- 2.3. Whilst nuisance noise and environmental noise may not be direct sources of potential noise-induced hearing loss, they should also be considered in the noise management plan due to the potential impact on workers. They should be managed and minimised wherever possible.
- 2.4. Refer to clause 7.1. for information on the monitoring and reviewing of noise management plans.

3. Noise Control Measures

- 3.1. During the development of the noise management plan, potential noise control measures should be considered in order of preference based on the [Hierarchy of Controls](#):
 - a. Elimination;
 - b. Substitution;
 - c. Isolation;
 - d. Engineering;
 - e. Administrative;
 - f. Personal Protective Equipment (PPE);
 - g. Training.

Elimination

3.2. Elimination is the most effective control measure. This may include ceasing to use a noisy machine, changing the way work is carried out so the hazardous noise is not produced, or introducing the noise hazard into the workplace through good design.

Substitution

- 3.3. If eliminating the source of noise is not reasonably practicable, then options to control it via substitution should be considered. This may include substituting plant or processes with those that are quieter, or replacing ototoxic substances with less harmful products.

Isolation

- 3.4. If substituting the source of noise is not reasonably practicable, then the exposure should be minimised by isolating or separating it from persons who may be at risk of exposure.

Examples of isolation for noise sources include:

- a. Using distance, barriers, enclosures, and sound-absorbing surfaces;
- b. Building enclosures or soundproof covers around noise sources;
- c. Using barriers or screens to block the direct path of sound;
- d. Moving noise sources so they are further away from workers; or
- e. Scheduling noisy work for when workers are not there (e.g., weekends, after hours).

Engineering

- 3.5. After elimination, substitution, and isolation methods of control have been utilised as far as is reasonably practicable, then engineering or physical controls should be considered.

Examples of potential engineering controls include:

- a. Eliminating impacts between hard objects or surfaces through cushioning or separation;
- b. Minimising the drop height of objects or the angle that they fall onto hard surfaces;
- c. Using absorbent lining on surfaces to cushion the fall or impact of objects;
- d. Fitting exhaust mufflers on internal combustion engines;
- e. Fitting silencers to compressed air exhausts and blowing nozzles;
- f. Ensuring gears mesh together better;
- g. Fixing dampening materials (such as rubber) or stiffening to panels to reduce vibration;
- h. Fitting sound-absorbing materials to hard, reflective surfaces;
- i. Maintaining equipment to ensure equipment is in a good condition such as extractors and evaporative air systems.
- j. Changing fan speeds or the speeds of components; or
- k. Changing the material, the equipment, or what parts are made of (e.g., change metal components to plastic components).

Administrative

- 3.6. Administrative noise control measures may be used in addition to engineering control measures to comply with the exposure standards for noise. These measures reduce the noise to which a worker is exposed by means of work arrangements.

Examples of potential administrative controls include:

- a. All efforts being made to undertake the task emitting the noise source at a time when it will affect as few people as possible;
- b. Using job rotation to alternate noisy tasks with quiet ones;
- c. Restricting access to work areas of high noise levels to essential Staff only;
- d. Erecting safety warning signs, conforming to specifications outlined in the [Australian Standard Safety Signs for the Occupational Environment \(AS 1319:1994\)](#); and
- e. Provision of training as per clauses 3.12. and 3.13.

Personal Protective Equipment

- 3.7. If all control measures have been exhausted and noise exposure is still above the standard, then personal hearing protection must be worn. However, they should only be worn where other noise control measures are not practicable or have yet to be implemented.
- 3.8. The selection, care, and use of personal hearing protectors (PHP) should be made in accordance with the hearing protector program outlined in the [Australian Standard Occupational Noise Management Part 3 \(AS/NZS 1269.3:2005\)](#). Expert referrals to assist with this can be provided by the Safety and Employment Relations team.

When selecting PHP, the following should be considered:

- a. Type of working environment;
 - b. Comfort, weight, and clamping force;
 - c. Combination with other items of PPE (e.g., safety glasses, hard hat, etc.);
 - d. Safety of the wearer; and
 - e. Opportunity for individual choice.
- 3.9. Workers should be provided with information, instruction, and training on the use and maintenance of PHP devices before their use.
 - 3.10. The School or Centre will hold and maintain PHP to be provided to workers for short-term use. Where there are no single-use, disposable PHP, thorough cleaning should take place before re-issue.
 - 3.11. Any worker with particular needs or experiencing difficulty with wearing the PHP supplied should discuss the matter with their supervisor.

Training

- 3.12. If noise exposure of a worker exceeds or is likely to exceed, the exposure standard, or if a worker is exposed to ototoxic substances, it is the responsibility of their immediate supervisor to ensure that the worker receives the appropriate instruction, training, and supervision. Further information on training can be requested via osh@ecu.edu.au.
- 3.13. Training objectives must be established, which will result in workers, managers, and supervisors being able to:
 - a. detail the risks to their hearing;
 - b. discuss steps that can be taken to reduce these risks; and
 - c. demonstrate the use and maintenance of hearing protectors.

4. Work Areas

- 4.1. New and modified work areas must be designed so that the acoustical environment complies with the requirements of the [Australian Standard Occupational Noise Management Part 1 \(AS/NZS 1269.1\)](#) and the University's [Planning and Design Guidelines](#).
- 4.2. Digital and Campus Services must follow the Safety in Design principles outlined in the University's [Planning and Design Guidelines](#) to ensure that noise control measures are included in the building design, fixed building installations, and equipment of new and temporary work areas. This should be done in consultation with the manager or supervisor of the work areas.
- 4.3. For new work areas, a risk assessment should be undertaken for the new work area. If the risk assessment finds that there is a potential risk of noise within the new work area, and if that noise is likely to elevate the noise levels in surrounding work areas, then the work area must be designed to ensure that noise levels are maintained as low as is reasonably practicable. A discussion should be had with the workers nearby or affected by this noise to ensure appropriate controls are in place and there is minimal exposure to noise.

- 4.4. Temporary work areas must be designed so that the noise levels do not exceed those recommended in the University's [Planning and Design Guidelines](#), and so that they avoid nuisance noise and Environmental noise impact on surrounding work areas.
- 4.5. Any worker engaged to complete the work shall determine what noise hazards may exist, and the control measures that need to be implemented, by undertaking a risk assessment in Riskware.
- 4.6. Where a noise Assessment, outlined in clause 1.4., has determined that noise exposure exists, a noise management or Riskware action plan must be developed to control and reduce noise emissions in that work area.

5. Plant and Equipment

- 5.1. Prior to the purchase of plant or equipment, a risk assessment must be completed via Riskware by the manager or supervisor in coordination with Digital and Campus Services, as outlined in clause 4.2.
- 5.2. The originator of a purchase order for plant and equipment must ensure that the requirements of the Australian Standard Occupational Noise Management Part 2: Noise control management (AS/NZS 1269.2:2005) are complied with.
- 5.3. Existing plant and equipment, including noise control equipment such as PHP, must have their noise hazards reduced in accordance with section 3. They must be maintained in accordance with the University's routine maintenance program and the manufacturer's recommendations.

6. Health Surveillance

Audiometric Testing

- 6.1. The job positions within a prescribed workplace must undergo a [baseline hearing test](#) through an approved provider as part of their pre-placement medical assessment.
- 6.2. Following a baseline hearing test, workers may, via their line manager, request for subsequent testing on an annual basis. Where workers have not requested subsequent testing, HR Services will encourage workers to attend every three (3) years.
- 6.3. It is the University's responsibility to arrange and pay for all WorkCover WA audiometric testing.
- 6.4. Audiometric tests for workers exposed to ototoxic substances should follow clause 6.8. and 6.9.

Ototoxic Substances

- 6.5. It is recommended by [WorkSafe WA](#) that workers exposed to [ototoxic substances](#) should have their eight-hour equivalent continuous noise level reduced to, at a minimum, 80 dB(A).
- 6.6. Workers who may be exposed to ototoxic substances should receive information on ototoxic substances and their effects during training and induction as per clause 3.12.

- 6.7. Annual audiometric testing is highly recommended for workers whose airborne exposure to an ototoxic substance is at 50% or more of the exposure standards stated in the [Safe Work Australia Hazardous Chemical Information System](#), regardless of noise level and respiratory protection worn.
- 6.8. If no air monitoring to test the airborne exposure of ototoxic substances has been completed, then workers should have an annual audiometric test if they have frequent, long-duration exposure to an ototoxic substance in circumstances where:
 - a. The efficiency of ventilation is not known or there is no mechanical ventilation;
 - b. Workers have reported health concerns that may be due to the substance;
 - c. It is difficult to estimate exposure to the substance; and/or
 - d. If skin exposure cannot be controlled when dealing with an ototoxic substance that can be absorbed through the skin.

7. Monitoring and Review

- 7.1. Where noise control measures have been introduced as part of a noise management plan, it is recommended that an assessment of the effectiveness of the controls is completed after a period of six months.
- 7.2. The results of this assessment should be forwarded to all supervisors, managers, and workers who work within the work area in question, and to the Local Health and Safety Committee. The Committee, in conjunction with the Safety and Employment Relations Office, needs to report on initiatives introduced to reduce the Noise Exposure of University Workers.
- 7.3. The Local Health and Safety Committee should make recommendations on what practices or procedures require adjustment whilst considering changing criteria, such as new or amended legislation.

8. Document Management

- 8.1. All documents created whilst following this guideline, including those for noise assessments, Noise management plans, noise control measures, and audiometric testings, are to be managed in accordance with the University's [Document and Records Management Procedure](#).
- 8.2. All attendance of Staff to audiometric testing must be recorded in Ascender Pay, under their individual profile.

Related Documents

Legislation

[Occupational Safety and Health Act 1984 \(WA\)](#)
[Occupational Safety and Health Regulations 1996 \(WA\)](#)
[Environmental Protection \(Noise\) Regulations 1997 \(WA\)](#)
[WorkSafe WA Commission Code of Practice – Managing Noise at Workplaces 2002](#)
[Safe Work Australia Model Code of Practice – Managing Noise and Preventing Hearing Loss at Work 2020](#)
[AUS Standard Occupational Noise Management Part 1 AS/NZS 1269.1:2005](#)
[AUS Standard Occupational Noise Management Part 3 AS/NZS 1269.3:2005](#)
[AUS Standard Safety Signs for the Occupational Environment AS 1319:1994](#)
[AUS Standard Acoustics – Hearing Protectors AS/NZS 1270:2002](#)

Policies

[Work Health and Safety](#)
[Personal Protective Equipment](#)

Operational documents and resources

[Health and Safety Hazard Identification and Risk Management Guideline](#)
[Health and Safety Hazard Risk Factor Prompt Sheet](#)
[Document and Records Management Procedure](#)
[Planning and Design Guidelines](#)
[Safe Work Australia Hazardous Chemical Information System](#)

Contact Information

For queries relating to this document please contact:

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Approval History

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Appendix 1 - Tables

Table 1. Decibel levels of common sounds

Sound Source	Sound Pressure Level dB(A)
30m from a jet aircraft	140
Threshold of pain	130
Ambulance siren	120
Chainsaw	110
Disco	100
Lawn mower	90
Kerbside busy road	80
Vacuum cleaner	70
Conversational speech	60
Moderate rainfall	50
Library	40
Quiet bedroom at night	30
Background in TV studio	20
Normal breathing	10
Threshold of hearing	0

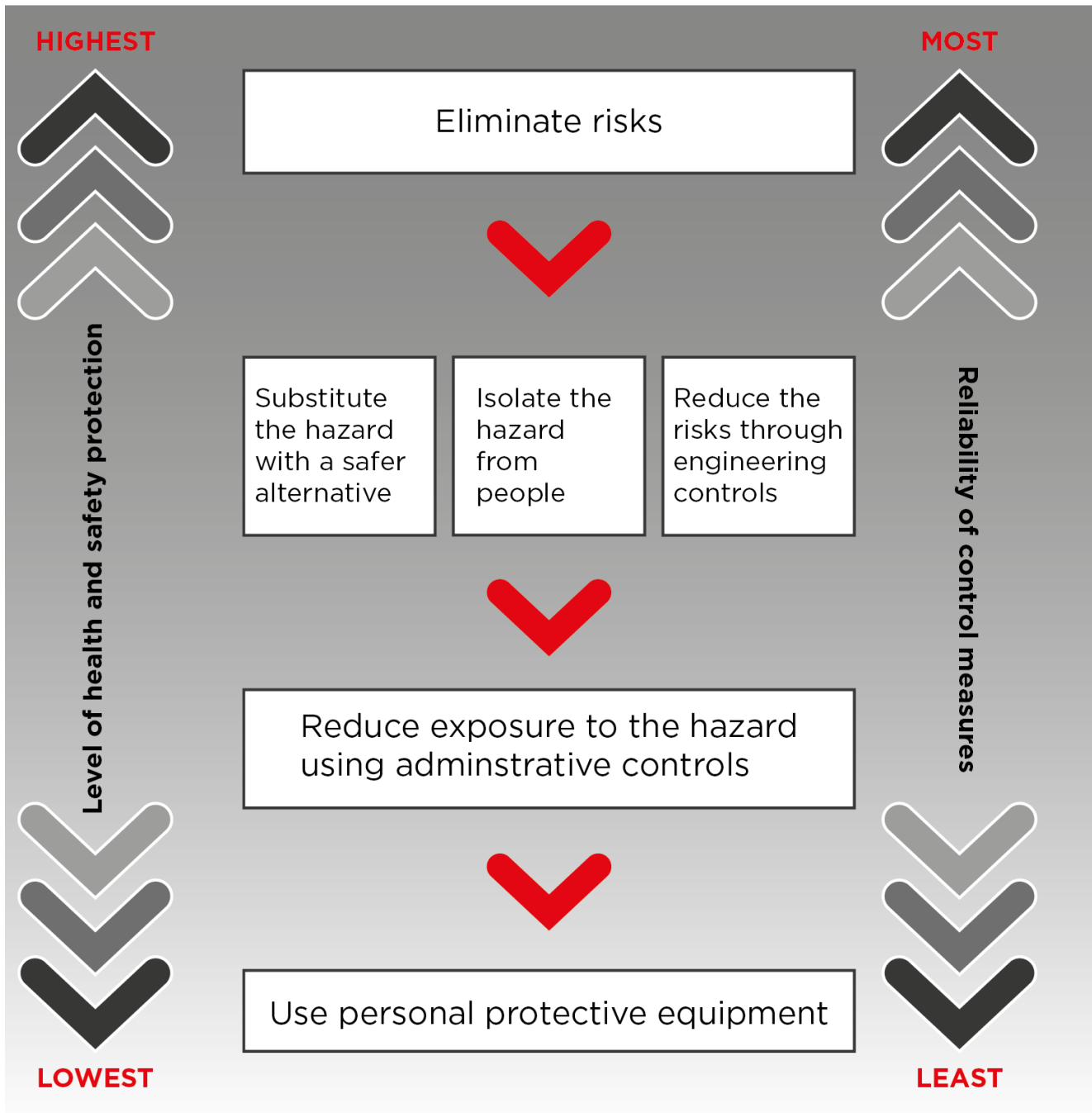
Table 2. Noise Levels and exposure time equal to LAeq,8h of 85 dB(A)

Noise Level dB(A)	Exposure Time
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 mins
100	15 mins
103	7.5 mins

Table 3. Possible Ototoxic Substances

Acrylonitrile	Lead	Perchloroethylene
Arsenic	Manganese	Solvent Mixtures and Fuels
Butanol	Mercury	Styrene
Carbon Disulphide	N-Heptane	Toluene
Carbon Monoxide	N-Hexane	Trichloroethylene
Ethanol	Organic Tin	Xylenes
Ethyl Benzene	Organophosphates	
Hydrogen Cyanide	Paraquat	

Appendix 2 – Hierarchy of Control



Appendix 3 – RASCI Matrix

Responsible: The person who does the work to achieve the task.
Accountable: The person who is accountable for the correct and thorough completion of the task.
Support: The people who provide help/ resources to Responsible members to carry the project to completion.
Consulted: The people who provide information for the project and with whom there is two-way communication.
Informed: The people kept informed of progress and with whom there is one-way communication.



Noise Management Requirements	Chancellor Chancellery Council QARC Academic Board	Vice- Chancellor	Executive Deans	Deans & Directors	Director Human Resources Services	Associate Deans, Managers & Supervisors	Safety and Employment Relations (SER)	HR Services	Workers	Director Digital Campus Support Centre	Director Finance and Business Services Centre	Health and Safety Committee (Including H&S Representati ves)
Audiometric Testing	I	I	C,I	S,C	A	S,C,I	S,C	R	C,I	S,C	S	C,I
Contractor, consultant and visitor responsibilities	I	I	C,I	A	A	S,C,I	S,C	I	I	R,S,C	R,S	
Identify potential exposure – planning and design stage, current work areas	A	A	A	A	S,C	R,S,C	S,C	S	C,I	R,S,C	S	C,I
Identifying noise mitigation infrastructure construction health and safety plans.	A	A	A	A	S,C	R,S,C	S,C		C	R	S	
Implement and appropriately resourced noise management plans	A	A	A	A	S,C	S,C	S,C		C	R	S	C,I
Incident management	A	A	A	A	A	R	R	C	R,C,I	R,C,I	S	S,C,I
Management of noise included in standard operating procedure	A	A	A	A	I	R	R		R	R,C		
Noise Management Guideline	A	A	A	A	A	C,I	R		C,I	C,I	C,I	C,I
Personal hearing protection provided and used correctly	A	A	A	A	S	R	R		R	R	S,C,I	
Purchasing plant or equipment noise emissions considered	A	A	A	A	S	R	C,I		C,I	R	S	C,I
Training in noise exposure and appropriate controls	A	A	A	A	S	R	S		C,I	C,I	S	
Workplace inspections and noise surveys	A	A	A	A	S	R	S		C,I	R	S	S,C,I