

## Moreton Bay Research Station (MBRS) Environmental Noise Program

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### 1. Scope

The Environmental Noise Program is limited to the following noise sources:

- Machinery owned by the Moreton Bay Research Station;
- Activities (teaching, research, social) under the control of the Moreton Bay Research Station or authorised by The University of Queensland at the Moreton Bay Research Station; and
- To educate University stakeholders on environmental noise issues.

This program **excludes** the following:

- Any activity or event covered by special agreement or licence from the administering authority;
- Noise within the Moreton Bay Research Station which is regulated by the Workplace Health and Safety Act (1995);
- Traffic (excluding University and contractor vehicles and plant during operations that are non-transitional) noise;
- Behavioural noise;
- Noise from animals other than those kept at the Research Station for research/educational purposes; and
- Emergency warning systems.

### 2. Objectives

The University of Queensland recognises that education and training are activities that generate noise, but are values that deserve protection. The Noise Program aims to provide a set of procedures to effectively manage and limit the environmental noise generated from the University's educational and research activities.

The objectives of this program are as follows:

- To determine areas in which the application of environmental noise control is required;
- To ensure that all relevant licences, permits and approvals for environmental noise emissions are in place;
- To ensure legislated activities do not exceed levels defined;
- To set procedures in line with Quality Management in order to manage environmental noise emissions by application of "Best Environmental Management Practices";
- To determine the acoustical effect the university activities have on the surrounding noise sensitive areas; and
- To educate University stakeholders on environmental noise issues.

### **3. Management of Activities That Generate Noise**

The following measures shall be adopted to abate and control noise levels from the Moreton Bay Research Station. These are used in order to maximise the benefits of noisy activities within the research station and minimise the impact on surrounding properties.

#### **3.1 Environmental Noise Controls**

The following measures are control strategies that can be applied to noise generating activities to limit, control or abate noise levels affecting noise sensitive locations neighbouring the research station.

##### **3.1.1 Time Limits**

Time limits are applied to activities that may generate intrusive environmental noise at neighbouring properties, external to the research station. Time limits will vary depending on the nature of the activity.

However, in all circumstances, no noise that can be heard outside a habitable room at a noise sensitive location will be generated during the nighttime period (10pm to 6am)<sup>1</sup>.

##### **3.1.2 Noise Limits**

Noise limits are applicable to certain activities that may generate intrusive environmental noise at sensitive, surrounding properties and during sensitive times. Noise limits will vary depending on the nature of the activity and time.

##### **3.1.3 Designated Areas**

Some activities due to their expected noise levels, shall be restricted to defined locations in the research station to distance the activity from noise sensitive locations and/or take advantage of existing structures and/or landscape to abate noise levels.

##### **3.1.4 Acoustic Barriers**

Acoustic barriers shall be applied primarily for fixed machinery and plant with identified noise issues. Acoustic barriers will include the following:

- Acoustically treated walls to absorb noise;
- Enclosed rooms or cases for stationary machinery such as central air conditioning units and compressors; and
- Noise attenuated equipment (mufflers, etc).

##### **3.1.5 Natural Barriers**

Trees, grass and all other forms of vegetation will be maintained and/or developed at the research station to:

- (i) Act as natural noise barriers for direct emission from the campuses; and
- (ii) Act as barriers to noise reaching reflective surfaces.

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### 3.1.6 Acoustic Planning

Noise prevention and abatement will be considered during the planning of entertainment and sporting activities. This includes the following:

- Speakers, amplified music and public address systems shall be directed towards the centre of the research station when possible;
- Avoid directing speakers, musical instruments and systems, and public address systems towards reflective surfaces which direct the sound towards noise sensitive areas;
- Erecting of acoustic or natural barriers if feasible;
- The use of a series of speaker systems instead of block systems where applicable and/or feasible;
- Placing machinery as far as it is feasibly possible from noise sensitive areas; and
- Buffer zones.

### 3.1.7 Noise Enforcement

The Moreton Bay Research Station Manager has the authority to enforce limits on all operating activities that contravene licence conditions and/or the environmental noise program. The manager can also force the closure of any activity on complaint (*refer to section 5 - Complaints*).

## **3.2 Exemptions to Limits of Operating Procedure**

In certain circumstances, the strategies above still may not be adequate to limit noise from particular activities. If this is expected, **prior to the event** the convenor must seek approval from the administering authority (currently Redland Shire Council), where noise levels and time limits can be agreed that are acceptable to both the administering authority and the convenor. This however does not exempt the convenor of the activity from taking every step possible and implementing all feasible strategies to lessen the impact of noise from the event.

The convenor must then hold a copy of any licence or agreement, in writing, at the event and have a copy forwarded to research station manager (*refer to Section 5 - Complaints*).

Only when all these conditions have been met is the event exempt from the noise limits and time restraints within this procedure.

## **3.3 Identified Noise Generating Activities**

Table 1 identifies activities common to the University environment that are potential sources of noise at levels that may be found intrusive at noise sensitive locations. This table and explanations of the activities is expanded on in the appendices.

**Table 1 - Noise management for University activities.**

ACTIVITY	Control Type							Appendix
	Time Limit	Noise Limits	Designate Areas	Acoustic Barrier	Natural Barrier	Acoustic Planning	Noise Enforcement	
University Ceremonies	✓	✓	✓		✓	✓	✓	1
Entertainment	✓	✓	✓	✓	✓	✓	✓	2
Construction, Renovation and Demolition	✓	✓		✓			✓	3
Grounds Maintenance	✓					✓	✓	4
Public Address Systems	✓	✓			✓	✓	✓	5
Air Conditioning/Refrigeration		✓		✓	✓	✓		6
All other Noise	✓	✓						

#### **4. Emergency Noise**

Emergency noise is used to alert people to risk to their personal safety. This includes alarms, loud speakers (used specifically for this purpose), sirens, etc. Application and use of these systems is as determined by installation and noise levels are set as per *AS 2220-1989 Emergency warning and intercommunication systems in buildings*.

#### **5. Complaints**

##### **5.1 Complaints Made out of Hours/Indirectly to Research Station**

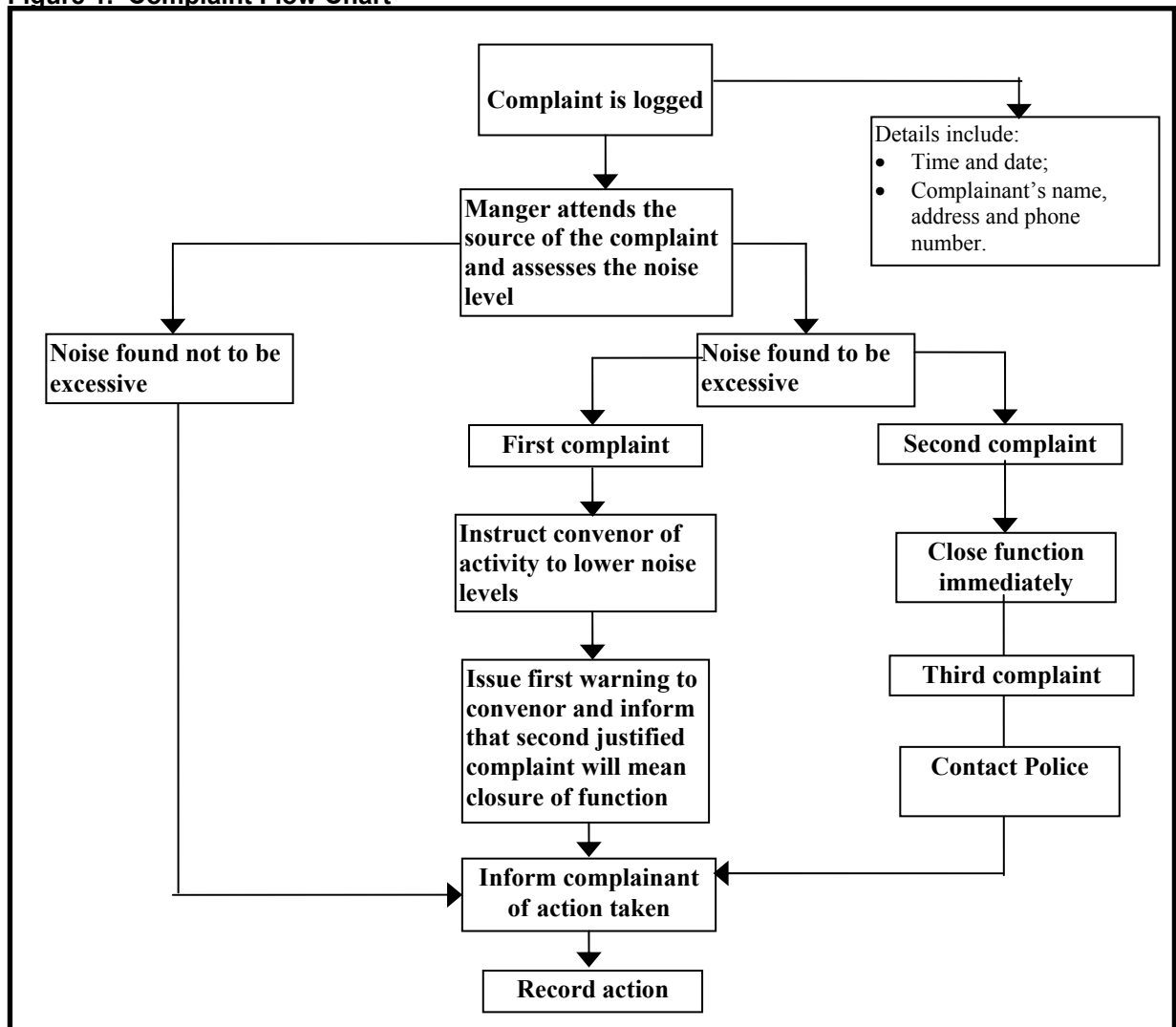
Complaints made to the police or regulatory authority may be dealt with in one of the following ways:

1. Forwarded to the Manager, Moreton Bay Research Station; or
2. Passed to the administering authority (from police if not directly received) and investigated by the administering authority with results and actions forwarded to the convenor of the offending function and/or the manager, Moreton Bay Research Station and/or the Environmental Engineer, Property and Facilities as appropriate.

## 5.2 Complaints Direct to the Research Station

When a complaint is lodged directly with the Manager, Moreton Bay Research Station while the event is underway, the flow chart in figure 1 is followed.

Figure 1. Complaint Flow Chart



## 5.3 Absolute Exclusions

Noise complaints made against the following are excluded from the actions in sections 5.1 and 5.2:

- Behavioural noise;
- Traffic noise;
- Occupational and Health related noise;
- Noise generated from animals other than domestic animals;
- Noise generated from the University Colleges which operate independently from The University of Queensland; and
- Emergency warning noise.

## **6. Records**

All documents issued concerning the environmental noise program will be held by the Property and Facilities Division or the Manager, Moreton Bay Research Station as appropriate. The term documents for the purpose of the environmental noise program includes the following:

- Operating procedures;
- Checklists;
- Notes;
- Correspondence;
- Invoices; and
- Reports.

## **7. Audits**

Environmental noise audits will be carried out in accordance with the procedures set out in The University of Queensland *Auditing Manual*, held by Property and Facilities. It is the responsibility of the Property and Facilities Division to conduct environmental noise audits on the University sites and budget for auditing activities.

## **8. Monitoring**

Monitoring programs will be implemented when required for noise generating activities. Monitoring may be required by:

- Audit results;
- Response to complaints; and
- On order of the administering authority.

It is the responsibility of the Property and Facilities Division to set up monitoring programs of the University campuses and budget for monitoring activities.

## **9. Training**

It is the responsibility of the Manager, Moreton Bay Research Stations to ensure that their personnel are adequately trained in environmental noise management

Refer to the training program for further information.

## 10. Enquiries

Further information concerning noise can be gained from the following:

**Table 3 - Enquiries at The University of Queensland.**

<b>Subject</b>	<b>Contact</b>	<b>Person</b>	<b>Telephone</b>
Enforcement	Moreton Bay Research Station	Manager Security	(07) 3409 9058
Ceremonies	Protocol and Ceremonies	Manager	(07) 336 <b><u>53159</u></b>
Licence conditions, restrictions, auditing and technical advice	Property and Facilities Division Environmental Services section	Environmental Engineer	(07) 336 <b><u>51587</u></b>

## 11. Definitions

### 11.1 **Concert**

Under Schedule 2 of the *Environmental Protection (Noise) Policy 1997*, “concert” means “a public performance or other public event from which music (whether recorded or performed live) is a significant source of noise.

### 11.2 **Day Period**

Under Schedule 5 of the *Environmental Protection (Noise) Policy 1997*, day time means “6am to 6pm”.

### 11.3 **Environmental Noise**

Environmental Noise is defined as an unwanted sound.

### 11.4 **Evening Period**

Under Schedule 5 of the *Environmental Protection (Noise) Policy 1997*, evening period means “6pm to 10pm”.

### 11.5 **Background Level**

Under Schedule 5 of the *Environmental Protection (Noise) Policy 1997* background level means “for a specified time interval, in relation to an investigation of a noise, means the A-weighted sound pressure level that is equalled or exceeded for 90% of that part of the interval in which the investigated noise is absent”.

## 12. References

- Environmental Protection Act 1994
- Environmental Protection Regulations 1998
- Environmental Protection (Noise) Policy 1997
- AS 2436 - Guide to Noise Control on Construction, Maintenance and Demolition Site
- AS 2220-1989 Emergency warning and intercommunication systems in buildings

## Appendix 1 – Noise Control Management

### Activity – University Ceremonies

The University of Queensland has a tradition of conducting ceremonies that have been part of the University curriculum since its inception. It is recognised that education and training are values that deserve protection.

Examples:

University ceremonies are conducted for academic reasons and may include, but not be limited to the following:

- Open days

Control	Management
Time Limit	7am - 11pm
Noise Limit*	<p><b>Indoor ceremonies</b></p> <ul style="list-style-type: none"> <li>• 12am – 7am: no audible noise</li> <li>• 7am - 10pm: 50 dB(A)</li> <li>• 10pm – 12am: lesser or 45dB(A) or background + 10dB(A)</li> </ul> <p><b>Outdoor ceremonies</b></p> <ul style="list-style-type: none"> <li>• 12am – 7am: no audible noise</li> <li>• 7am - 10pm: 70dB(A)</li> <li>• 10pm – 12pm: lesser of 50dB(A) or background + 10dB(A)</li> </ul>
Designated Areas	University ceremonies will be conducted in designated areas as directed by the Senate, Chancellor, Vice-Chancellor, Executive Deans and Protocol Services.
Acoustic Barrier	Not applicable
Natural Barrier	Trees, vegetation and grass are not to be removed for outdoor ceremonies.
Acoustic Planning	Ceremonies shall generally be conducted in central indoor areas to attenuate the bulk of the noise. Outdoor ceremonies shall have a suitable system with all speakers and like appropriately directed and of suitable power for the ceremony.
Noise Enforcement	The Manager, Moreton Bay Research Station has the authority to enforce limits on all activities which contravene licence conditions and/or the environmental noise program and closure in <i>some</i> extreme circumstances.

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\* Noise limits to be measured at the boundary of a noise sensitive place, or at the boundary of The University of Queensland campuses



## Appendix 2 – Noise Control Management

### Activity – Entertainment

Entertainment includes social and recreational activities held at the Moreton Bay Research Station. These activities are held outdoors or indoors and may be part of (i) induction of new students and staff, or (ii) social events held by the Centre to integrate students and staff.

Examples:

- Social Activities carried out by Departments, including barbecues.
- Open days.

Any public address systems used for entertainment events must also comply with the guidelines under Public Address Systems.

Control	Management
Time Limit	<b>7am to 11pm</b>
Noise Limit*	<p><b>Indoor ceremonies</b></p> <ul style="list-style-type: none"> <li>• <b>12am – 7am:</b>        <b>no audible noise</b></li> <li>• <b>7am - 10pm:</b>       <b>50 dB(A)</b></li> <li>• <b>10pm – 12am:</b>   <b>lesser or 45dB(A) or background + 10dB(A)</b></li> </ul> <p><b>Outdoor ceremonies</b></p> <ul style="list-style-type: none"> <li>• <b>12am – 7am:</b>        <b>no audible noise</b></li> <li>• <b>7am - 10pm:</b>       <b>70dB(A)</b></li> <li>• <b>10pm – 12pm:</b>   <b>lesser of 50dB(A) or background + 10dB(A)</b></li> </ul>
Designated Areas	Activities shall be carried out at locations approved by the Manager, Moreton Bay Research Station.
Acoustic Barrier	May be required depending on size and orientation of any amplification systems used.
Natural Barrier	Trees, vegetation and grass are not to be removed for any event unless special permission has been sought.
Acoustic Planning	<ul style="list-style-type: none"> <li>• Speakers, musical instruments and public address systems shall be directed away from noise sensitive areas as much as possible; and</li> <li>• Avoid directing speakers, musical instruments and public address systems towards reflective surfaces that direct the sound towards noise sensitive areas.</li> </ul>
Noise Enforcement	The Manager, Moreton Bay Research Station has the authority to enforce limits on all activities that contravene licence conditions and/or the environmental noise program and closure in extreme circumstances.

\* Noise limits to be measured at the boundary of a noise sensitive place, or at the boundary of The University of Queensland campuses, which ever is further. This in not at point of source.

## Appendix 3 – Noise Control Management

### Activity – Construction, Renovation, Demolition and Maintenance

Construction, renovation and demolition are activities undertaken to create a new environment, to upgrade the safety of the infrastructure of the Moreton Bay Research Station and to enhance the general up keeping of the campuses.

Examples:

- Construction, renovation and demolition of buildings;
- Use of equipment i.e. cranes, hoists, trucks, tractors, excavators, compressors, generators, pneumatic drills, etc.; and
- General activities using the above equipment.

Control	Management
Time Limits	<ol style="list-style-type: none"> <li>1. <b>Building Works</b> (demolition, excavation, repairs, etc.) 6.30am – 6.30pm Monday to Saturday Prohibited at all other times.</li> <li>2. <b>Power Tools</b> (compressors, generators, oxyacetylene burners and impacting tools) 7.00am – 7.00pm Monday to Saturday 8.00am – 7.00pm Sunday or public holidays Prohibited at all other times.</li> </ol>
Noise Limit*	<b>No noise limits apply.</b>
Designated Areas	Not applicable
Acoustic Barrier	As per AS 2436:1981 - <i>Guide to Noise Control on Construction, Maintenance and Demolition Site</i>
Natural Barrier	Not applicable.
Acoustic Planning	Not applicable.
Noise Enforcement	The Manager, Moreton Bay Research Station has the authority to enforce limits on all activities which contravene licence conditions and/or the environmental noise program.

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## Appendix 4 – Noise Control Management

### Activity – Grounds Maintenance

Grounds maintenance noise is generated by equipment used for the up keeping of the University campuses such as tractors, lawn mowers, brush cutters and chainsaws. The noise level is intermittent and transient.

Examples: General grounds maintenance is undertaken for various reasons including:  
 (i) Compliance with fire safety regulations, (ii) protecting environmental aesthetic values and (iii) pest control (e.g. weeding).

- Tree surgery;
- Pruning vegetation;
- Mowing of grounds; and
- Maintaining and/or upgrading gardens.

Control	Management
Time Limit	<b>not before 7.00 am     )</b> <b>and after 7.00 pm     ) Monday to Saturday</b> <b>Occasional night activities approximately 2-3 times per year.</b>
Noise Limit*	Not applicable.
Designated Areas	Not applicable.
Acoustic Barrier	Not applicable.
Natural Barrier	Not applicable.
Acoustic Planning	Purchase of appropriate equipment and vehicles fitted with mufflers and labelled as per Environmental Protection (Noise) Policy, 1997, <i>Product Labelling Requirements</i> .
Noise Enforcement	The Manager, Moreton Bay Research Station has the authority to enforce limits on all activities which contravene licence conditions and/or the environmental noise program.

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## Appendix 5 – Noise Control Management

### Activity – Public Address System

Public Address Systems are restricted at The University of Queensland. The use of Public Address Systems is limited to authorised activities.

#### Examples:

- Portable systems used at open days.

Public address systems used in conjunction with any other activity must comply with the noise levels appropriate for the rest of the activities also.

<b>Control</b>	<b>Management</b>
Time Limit	<b>7am – 10pm Monday to Friday</b> <b>8am to 6pm Saturday, Sunday, Public Holidays</b>
Noise Limit*	<ul style="list-style-type: none"><li>• <b>Background +10dB(A)</b></li><li>• <b>All other times – no audible noise</b></li></ul>
Designated Areas	Not applicable
Acoustic Barrier	Not applicable
Natural Barrier	Trees, vegetation and grass are not to be removed.
Acoustic Planning	Public address systems to direct sounds away from noise sensitive areas as possible.
Noise Enforcement	The Manager, Moreton Bay Research Station has the authority to enforce limits on all activities which contravene licence conditions and/or the environmental noise program.

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\* Noise limits to be measured at the boundary of a noise sensitive place, or at the boundary of The University of Queensland campuses, which ever is further. This in not at point of source.

## Appendix 6– Noise Control Management

### Activity – Air Conditioning/Refrigeration

Air conditioning and refrigeration plant are essential to maintaining a working and educational environment at the research station. The noise from this plant is constant and needs to be managed to lessen the impact on areas external to the University.

#### Examples:

- Cooling towers
- Compressors
- Refrigeration plant.

<b>Control</b>	<b>Management</b>
Time Limit	<b>As per noise limits.</b>
Noise Limit*	<ul style="list-style-type: none"><li>• <b>7am – 10pm: 50dB(A)</b></li><li>• <b>10pm – 7am: higher of 40dB(A) or background + 5dB(A)</b></li></ul>
Designated Areas	Not applicable
Acoustic Barrier	As required, meeting all building, planning and regulatory requirements.

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\* Noise limits to be measured at the boundary of a noise sensitive place, or at the boundary of The University of Queensland campuses, which ever is further. This in not at point of source.