Belinda Scott
Department of Planning, Industry & Environment
320 Pitt Street
SYDNEY NSW 2000

Dear Belinda,

SUBMISSION TO SYDNEY GATEWAY ROAD PROJECT SSI-9737

1. INTRODUCTION

This submission has been prepared by Qantas Airways Limited and the Qantas Group, including related bodies corporate of Qantas (**Qantas**) with assistance from Urbis Pty Ltd (**Urbis**) in relation to the State Significant Infrastructure Application (**SSIA**) and preliminary draft Major Development Plan (**MDP**) for the Sydney Gateway Road Project (**Gateway Project**).

The Gateway Project will require that the Qantas' existing Flight Training Centre is to be demolished, and therefore Qantas is building a new flight training centre on its freehold land. Qantas recently received approval from the Independent Planning Commission (**IPC**) for a State Significant Development Application (**SSDA**) proposing the relocation of our existing Flight Training Centre from its current location within Sydney Kingsford Smith Airport (**the Airport**) to a new location within our landholdings at 297 King Street, Mascot (**Qantas Project**).

The purpose of this submission is to:

- Reinforce the critical importance of ensuring that the Gateway Project does not impact on the operation of Qantas' existing and new Flight Training Centres;
- Detail Qantas' position in respect to noise and vibration impacts from the Gateway Project such that Qantas' interests are best protected in any approval granted for the Gateway Project.
- Outline other keys components of the SSIA that have the potential to impact on the existing and new Qantas Flight Training Centres.

This submission should be read in conjunction with the Acoustics Consultant Advice prepared by Norman Disney & Young (**NDY**) and provided at **Attachment A**.

It should be noted that this submission relates only to Qantas' existing and new Flight Training Centres, and makes no comments as to broader business and operational implications for the Qantas Group. A second submission has been prepared detailing a whole of business response to the SSIA/MDP.

2. BACKGROUND

The new Qantas Flight Training Centre Project received State Significance status in February 2019 on the recommendation of the IPC. On 11 November 2019 the SSDA was referred to the IPC for determination following a recommendation of approval from Department of Planning, Industry and Environment (**DPIE**). Relevant documentation, including the DPIE assessment can be accessed here: https://www.planningportal.nsw.gov.au/major-projects/project/9961

On 29 November 2019 the IPC, as the consent authority under clause 8A of the *State Environmental Planning Policy (State and Regional Development) 2011* and section 4.5(a) of the *Environmental Planning and Assessment Act 1979*, approved the construction and operation of a flight training centre, multi-deck car park and ancillary infrastructure at 29 King Street, Mascot subject to conditions of consent.

The Qantas Project has been necessitated as a direct result of Roads and Maritime Services' (**RMS**) now known as **Transport for NSW (TfNSW)** Gateway Project, which will result in the existing Qantas Flight Training Centre becoming inoperable for the following reasons:

- The widening of Qantas Drive to facilitate the Gateway Project will require the partial demolition of the existing Flight Training Centre which will result in the demolition of the pool, classrooms and emergency procedures training area that are critical to Qantas' operations and eventual demolition of the whole building; and
- The noise and vibrations associated with the construction and operation of the Gateway Project will exceed Civil Aviation Safety Authority's (**CASA**) regulatory requirements in relation to the operation of simulators, which necessitates our relocation.

Without a functioning and compliant Flight Training Centre, Qantas is unable to maintain the required level of training for our pilots and cabin crew. If pilots and cabin crew do not meet the training requirements as regulated by CASA then they are unable to fly. So interruptions to the operations of Qantas' existing and new Flight Training Centres has the real potential to ground the fleet. This obviously has consequential impacts on Qantas being able to effectively run our business in Australia and internationally, and materially negatively impacts the NSW and Australian economies.

Absent the Gateway Project, Qantas would not be moving from our existing Flight Training Centre due to the latent economic value, ongoing functionality and strategic location of the existing facility.

Qantas supports the Government's investment in road and rail infrastructure. However, this cannot come at the expense of Qantas' business and operational continuity, which is predicated on having an operational Flight Training Centre. It is critically important that the existing and proposed Flight Training Centre's operational viability is protected during the construction of the Gateway Project, consistent with the planning principle related to Noise Attenuation as set out in *Stockland Developments v Wollongong Council and others [2004] NSWLEC 470 at 6.*

3. REVIEW OF SSI-9737 AND IMPLICATIONS FOR QANTAS

Having reviewed the combined Environmental Impact Statement (**EIS**) and preliminary draft Major Development Plan (**MDP**) and supporting Technical Reports, the potential key issues and impacts on the existing and new Qantas Flight Training Centres are:

- Stakeholder consultation with Qantas.
- Noise impacts during construction works.

- Vibration impacts during construction works.
- Noise impacts during operation of the Gateway Project.
- Business impacts during construction works and potential impact of the Gateway Project on Qantas' operational capacity.
- Cumulative traffic impacts on the road network.

These matters are discussed in more detail below.

STAKEHOLDER CONSULTATION

Section 4 of the EIS outlines the stakeholder consultation that was undertaken prior to and during the preparation of the SSIA/MDP. Whilst the EIS does identify some issues raised by Qantas during consultation, they are limited to:

- *"Construction impacts, particularly increases in congestion creating potential delays for cabin crew and operations getting to and moving between terminals."*
- *"Impacts to existing facilities along Qantas Drive and Qantas Flight Training Centre."*
- *"Changes to traffic conditions at Lancastrian Road including removal of right turns into/out of the Jet Base, will create confusion and more congestion."*

In our view, the above list does not accurately cover the breadth of critical issues to Qantas' operational capability and in particular, the potential noise and vibration impacts to the existing and new Qantas Flight Training Centres.

Section 5.5 of the Noise and Vibration Technical Working Paper (**TWP**) addresses 'Other Sensitive Receivers' and in relation to the existing Qantas Flight Training Centre states: *"It is noted that Qantas is proposing to relocate the centre due to its existing lease ending and Sydney Airport requiring the land for future airport development."*

Qantas notes that absent the Gateway Project, Qantas would not be moving from our existing Flight Training Centre due to the latent economic value, ongoing functionality and strategic location of the existing Flight Training Centre.

It is noted that the mitigation measures at Section 19.6.2 of the EIS include: *"Consultation with Qantas will occur throughout construction planning and construction to minimise impacts on the Qantas Flight Training Centre until the relocation process is complete."*

Given the potential wider impacts should Qantas' operational capability be impacted, it is requested that the following measures be incorporated into any approval for the SSIA/MDP:

- A condition of consent requiring SACL/TfNSW to engage directly with Qantas on our needs and requirements, and also reflecting the previous consultation with the parties regarding noise and vibration so that the protection of Qantas' interests and operational requirements are given the highest priority at every level.
- EIS/MDP be updated to reflect that Qantas is moving the Flight Training Centre as a direct result of the Gateway Project, not for any other reason.

- A condition of consent requiring SACL/TfNSW to protect Qantas' operational capability at all times during construction and operation, and the condition to identify mitigation measures to be implemented.

NOISE AND VIBRATION

The existing Qantas Flight Training Centre has been listed and assessed as an '*Other Sensitive Receiver (educational)*' in the Noise and Vibration TWP, however it is also mapped as a '*demolished building*'.

The new Flight Training Centre is mentioned only in the context of cumulative construction noise impacts to other receivers when the Flight Training Centre and Gateway works are occurring simultaneously and is not listed as a Sensitive Receiver.

New Flight Training Centre

The new Flight Training Centre at King Street will be operational before the Gateway Project is completed and will therefore become an operating Sensitive Receiver during construction of the Gateway Project. Whilst the Noise and Vibration TWP acknowledges this, there is no specific assessment of the potential construction and operational noise and vibration impacts on the new Flight Training Centre. At present, the assessment provides no certainty that the construction works will not affect the operation of the new Flight Training Centre, which is a concern given that the Gateway Project impacts are the driver for the relocation of the facility.

The new Flight Training Centre has been designed to incorporate some noise and vibration mitigations within the building fabric. However, it still contains sensitive simulation equipment and classrooms and should be classified as a Sensitive Receiver for construction noise and vibration impacts. The internal criteria applied to the existing Flight Training Centre (as replicated in Tables 1 and 2) remain consistent for the new Flight Training Centre and need to be explicitly conditioned.

Since the SSIA/MDP was placed on exhibition the SSDA for the new Qantas Flight Training Centre has been approved by the IPC. On this basis, an amended EIS should be prepared that identifies the new Flight Training Centre as a Sensitive Receiver and that the SSIA/MDP assess the impacts and mitigation measures.

3.1.1. Construction Noise Impacts

As per NDY's advice (**Attachment A**),the Noise and Vibration TWP identifies in Section 5.5.2 that at times the noise impacts on the existing Flight Training Centre may be "high", implying a >20dB exceedance of a 45 dBA internal noise criteria and a conservative 10dB reduction from outside to inside. The external peak levels are clarified at 75-90 dBA for works directly adjacent to the existing Flight Training Centre, with impacts reducing to less than 70 dBA for works of >100m distance. For ground-borne noise, impacts are also predicted to be "high" in the worst case.

The Qantas Flight Training Centre operates 24 hours a day, 7 days a week. These predicted high noise levels could potentially prejudice Qantas' ability to maintain a functioning and compliant Flight Training Centre. As indicated in the NDY advice (**Attachment A**), the most critical pilot training activities can be affected by individual noise events rather than cumulative/ average noise levels. As such, the maximum predicted noise level (L_{max} level) for the new Qantas Flight Training Centre, which is a key metric for Qantas, should be clearly stated in the Noise and Vibration TWP to allow Qantas to review and assess the impacts.

The mitigation measures proposed in the report to protect Qantas operations are that *"the management strategy for minimising any impacts would be further developed with Qantas and Sydney Airport as detailed construction planning information becomes available".* Extensive discussions have previously been held between Qantas and

TfNSW around noise and vibration criteria and monitoring during the period that the existing Flight Training Centre is operating during the Gateway Project works. The EIS/MDP and Noise and Vibration TWP should be updated to reflect the outcomes of these detailed discussions, internal and external criteria (as replicated in Tables 1 and 2), and monitoring provisions previously negotiated between Qantas and TfNSW.

Qantas requests an amended EIS be prepared for the SSIA/MDP where:

- Both the existing and new Qantas Flight Training Centres are identified as Sensitive Receivers and new noise and vibration assessments are undertaken by TfNSW in consultation with Qantas;
- Any approval granted for the Gateway Project contains explicit conditions that place maximum noise and vibration limits on the Gateway Project that reflect the internal noise criteria outlined in Table 1 and 2 to protect Qantas' operational requirements specific to Flight Training;
- Any approval granted for the Gateway Project contains conditions requiring that during construction of the Project, real time noise and vibration monitoring is to be carried out within and external to the existing and new Qantas Flight Training Centres. This is to include continuous internal noise and vibration logging within all operational Simulator Rooms and Cabins at both locations throughout the Gateway Project's construction. If proposed construction works approach or exceed the internal noise and vibration thresholds outlined in Tables 1 and 2 then the works must be stopped; and
- Obligation to be placed on any contract entered into for the Gateway Project that ensures that TfNSW/SACL and their contractors are required to protect the existing and new Flight Training Centres' operational capacity at all times.

Table 1 – NDY specified Noise Criteria for Existing Qantas Flight Training Centre

Location	Internal Noise Criteria	Indicative External Noise Criteria
Training Rooms	45 dBA (internal) $L_{eq,15m}$	74 dBA
Computer Based Training / IT Rooms	45 dBA (internal) $L_{eq,15m}$	67 dBA
Simulator Rooms	Sufficient to meet simulator cabin criteria	68 dBA
Simulator Cabins[2]	10 dB below QANTAS simulator cabin noise 'initial background noise criteria' in each specified octave band (63Hz-8kHz)	(see above)
Emergency Procedures Training	45 dBA (internal) $L_{eq,15m}$	71 dBA
Emergency Procedures Pool	5dB above background noise levels (background measured when unoccupied) $L_{eq,15m}$	To be determined

Table 2 – NDY specified Vibration Criteria for Existing Qantas Flight Training Centre

Location	Construction Vibration Criterion
Training Rooms	4mm/s (z axis) and 2.8mm/s (x and y axis) rms 1-80 Hz (human comfort) 50mm/s PPV at 4Hz and above (structural integrity)
Computer Based Training and IT Rooms	4mm/s (z axis) and 2.8mm/s (x and y axis) rms 1-80 Hz (human comfort) 50mm/s PPV at 4Hz and above (structural integrity)
Simulator/Monitor Rooms	3mm/s PPV (equipment integrity) 50mm/s PPV at 4Hz and above (structural integrity)

Simulator Cabins[3]	Perceptibility (0.1mm/s rms) in the cabin
Emergency Procedure Areas	8mm/s (z axis) and 5.8mm/s (x and y axis) rms 1-80 Hz (human comfort) 50mm/s PPV at 4Hz and above (structural integrity)

3.1.2. Construction Vibration Impacts

The Noise and Vibration TWP at Section 3.2.2.4 recognises that the effects of vibration from construction works can be divided into three categories:

- *"Those in which the occupants of buildings are disturbed (human comfort).*
- *Those where building contents may be affected (building contents).*
- *Those where the integrity of the building may be compromised (structural or cosmetic damage)."*

Notwithstanding the above, the assessment for the Gateway Project is limited to cosmetic damage or human comfort vibration related impacts during construction. There is no assessment in the EIS and supporting TWP of Sensitive Receivers where building contents may be affected, such as the simulators within the Qantas Flight Training Centre.

NDY has reviewed the Noise and Vibration TWP (**Attachment A**) and notes:

> *"Construction vibration is predicted to breach cosmetic and human comfort safe working distances to the existing FTC. This aligns with previous predictions by NDY undertaken for Qantas.*
>
> *The Report includes some potential mitigation measures for vibration (such as alternative equipment), though it states this should be reviewed "during detailed design when detailed construction planning details are known".*
>
> *Qantas has previously discussed and provided detailed advice on acceptable vibration levels within the existing FTC during the time that it is operating during Gateway construction, and this advice should be factored into future detailed vibration assessments.*
>
> *We recommend the report is updated to reflect the detailed discussions, internal and external criteria, and monitoring provisions previously negotiated between Qantas and RMS [TfNSW]."*

Given the potential for vibrations during the construction phase to exceed CASA's regulatory requirements in relation to the operational requirements of the simulators, the requests outlined in **Section 3.2.2** of this submission should be implemented.

3.1.3. Operational Noise Impacts

There are no specific predictions of operational noise impacts from the completed Gateway Project to the new Flight Training Centre. Graphics in the report indicate that changes to operational noise levels are likely to be less than 3dB, and that this change is not likely to significantly impact the new Flight Training Centre compared to other noise sources in the area.

Qantas requests that more information is provided to confirm the operational noise impacts from the completed Gateway Project.

3.2. BUSINESS IMPACTS

As has been demonstrated in submissions and most recently to the IPC, without a functioning and compliant flight training centre, Qantas is unable to maintain the level of training for our pilots and cabin crew as required by CASA. If pilots and cabin crew do not comply with CASA requirements, then they are unable to fly. This has an obvious knock-on effect of Qantas being unable to effectively operate our business, and to the NSW and Australian economies more broadly.

Section 20.3 of the EIS and the Business Impact Assessment TWP assesses the potential direct, indirect, negative and beneficial impacts to businesses, including evaluation the significance of impacts. Qantas strongly disagrees with the classification of the magnitude of potential impacts *as moderate and the statement: "The business would be able to continue operation for a period of time while enabling work is underway, and, subject to planning approval, continue operations at the proposed new facility. The change would be clearly noticeable and affect a larger number of receptors. The magnitude of impact is moderate."*

Qantas believes that the EIS understates the magnitude of potential business risk to Qantas a result of the Gateway Project. The Gateway Project has the potential, if not appropriately mitigated and controlled, to cripple Qantas' operations. Qantas requests that the EIS is updated to reflect this and suggests a high level of magnitude would more appropriately reflect the potential impact of the Gateway Project.

3.3. TRAFFIC AND TRANSPORT

3.3.1. Protection of Existing Qantas Catering Bridge

Section 9.2 of the EIS addresses the existing traffic transport and access environment for the Gateway Project. *Figure 9.7 Existing Transport Environment Map 2* identifies the Qantas Catering Bridge as the Lancastrian Road Overbridge, however there is no discussion or assessment of potential impacts to the bridge in the EIS or in the Transport, Traffic and Access TWP.

The retention of the Qantas Catering Bridge (including the pedestrian bridge suspended underneath it) is critical to many of Qantas' operations. This includes Flight Training, to enable the efficient movement of pilots and cabin crew from the Mascot Campus to the Flight Training Centre.

It is requested that the SSIA and EIS be amended to assess and confirm that there will be no impact to the existing operations of the Qantas Catering Bridge (including the pedestrian bridge suspended underneath it). Furthermore, it is requested that the following measures be implemented through the EIS and approval process for the SSIA/MDP to minimise any disruption to Qantas' operational capabilities:

- Condition of consent prohibiting TfNSW/SACL from undertaking any actions or works that would impact the accessibility and usability of the Qantas Catering Bridge, without prior written consent from Qantas to ensure that the protection of Qantas' interests is given the highest priority at every level.

3.3.2. Modifications to Lancastrian Road/Qantas Drive Intersection

Qantas understands that the Gateway Project would include the removal of the existing traffic signals at the intersection of Qantas Drive/Lancastrian Road. As a result, access would be limited to left in/left out from Qantas Drive to Lancastrian Road, in contrast to the existing arrangement which facilitates left in/left out and right in/right out turning movements by virtue of the signalised intersection.

Qantas objects to the removal of the existing traffic signals at the intersection of Qantas Drive/Lancastrian Road as they are critical for facilitating timely access to the Flight Training Centre and for broader access and traffic movements across the precinct.

Having regard to the above, Qantas requests the proposal be amended or conditioned so that:

- The design is updated to retain the existing left in/ left out and right in / right out access arrangement for the intersection of Qantas Drive/Lancastrian Road.

3.3.3. Construction Traffic Management

Section 5.3 of the Transport, Traffic and Access TWP outlines the indicative construction traffic management for the Gateway Project. It is anticipated that the Gateway Project would be delivered in phases where traffic would be diverted onto new sections of road at the end of each phase. The EIS states that: *"During all phases, two traffic lanes would generally be maintained along Airport Drive, Qantas Drive and Joyce Avenue (as per existing conditions) during the Sydney Airport terminals operating hours."*

The EIS also indicates that the: *"...existing number of turn lanes at intersections would be maintained... Notwithstanding this, modifications to the following intersections would be required during various phases throughout construction (excluding short term lane closures): ...3. Airport Drive and Lancastrian Road ..."*

Notwithstanding this, short-term lane and carriageway closures are proposed to facilitate (amongst other things), modifying the Lancastrian Road/Qantas Drive intersection. Whilst these short-term closures are expected to be undertaken during night-time hours as far as possible, there is the potential for these closures to restrict access to the existing Qantas Flight Training Centre, noting its 24-hour operation.

Having regard to the above, Qantas requests the following measure be implemented through the EIS and approval process for the SSIA/MDP:

- Condition of consent requiring SACL/TfNSW to engage directly with Qantas during the preparation of the traffic management strategy to ensure that the protection of Qantas' interests is given the highest priority at every level.

4. CONCLUSION

We understand that TfNSW/SACL have requested that the Minister for Planning and Public Spaces declare the Gateway Project as critical SSI. Given that third party appeal rights are not available in relation to critical SSI and therefore to protect the operation of the Flight Training Centre, Qantas requests the following:

- Both the existing and new Qantas Flight Training Centres are identified as Sensitive Receivers for the purposes of the EIS and supporting Technical Working Papers, and assessed accordingly.
- Condition any consent requiring TfNSW/SACL to engage directly with Qantas on our needs and requirements to ensure that the protection of Qantas' interests is given the highest priority at every level.
- Condition any consent requiring TfNSW/SACL to protect Qantas' operational capability at all times during construction and operation.

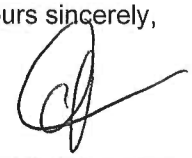
- Condition any consent requiring TfNSW/SACL to adhere at all times during construction and operation of the Gateway Project to the agreed maximum noise and vibration limits (that reflect the internal noise criteria) outlined in Tables 1 and 2 to protect Qantas' operational requirements specific to Flight Training.
- Request an amended EIS to assess impacts and identify mitigation measures, and any approval granted for the Gateway Project implement the recommended mitigation measures and conditions outlined in this submission.
- Explicit commitment for the protection of Qantas Catering Bridge and suspended pedestrian bridge underneath during construction and operation of the Gateway Project.

It should be noted that this submission relates only to Qantas' existing and new Flight Training Centres and makes no comments as to broader business implications. Qantas will make a second submission detailing a whole of business response to the SSIA/MDP.

Qantas will be looking to the DPIE for strict enforcement of the conditions to ensure compliance.

Should you have any queries regarding this matter please contact me on 0437 230 736.

Yours sincerely,



Charlie Westgarth
Senior Manager, Property Development
Qantas Airways Limited

ATTACHMENT A Acoustics Consultant Advice from NDY

Consultant Advice

Norman Disney & Young
A TETRA TECH COMPANY

From:	**Thomas Warren**	Date:	**20 Sep. 19**	File No:	S25504\148\J-\21\ca190917s0010	Pages:	5
Project:	**Qantas Flight Training & Simulator Centre (Tender No. 9760)**					No:	**J-012**[4.0]

	Attention	Company	Email
To:	Charlie Westgarth	Qantas Airways Limited	charlie.westgarth@qantas.com.au

Acoustics - Construction Noise and Vibration Framework

This document outlines the criteria, assessment, monitoring, and reporting requirements for road construction activities adjacent to the existing Qantas flight training centre at Sydney Airport.

NOISE AND VIBRATION CRITERIA

Noise Criteria

The following table sets out criteria for noise within Qantas spaces:

Location	Internal Noise Criteria
Training Rooms	▪ 45 dBA (internal) $L_{eq,15m}$
IPT & CBT Rooms	▪ 45 dBA (internal) $L_{eq,15m}$
Simulator Rooms	▪ Trigger levels will be set for Simulator Rooms (as for external areas) to protect the cabins, but there will not be a formal criterion.
Simulator Cabins	▪ 10dB below Qantas simulator cabin noise 'initial background noise criteria' in each specified octave band (63Hz-8kHz)
EP Training	▪ 45 dBA (internal) $L_{eq,15m}$
EP Pool	▪ 45 dBA LAeq (15 min) or LA90 + 5dB, whichever is greater

The required criteria used as the final measure of compliance will be the internal noise criteria to protect Qantas operations of the sensitive facility.

Indicative criteria (trigger levels) will be set for noise and vibration at suitable location outside the facility, based on the location of the proposed noise and vibration intensive activities and the relative location of the most potentially affected sensitive area. External triggers levels that are protective of internal criteria within the facility will be set for construction and vibration intensive activities on a location by location basis based on site laws (transmission- functions) that will be developed prior to construction in the vicinity.

Vibration Criteria

Vibration criteria are based on those outlined in the NSW EPA document *Assessing Vibration: A Technical Guideline*.

Location	Construction Vibration Criterion
Training Rooms	▪ VDV (Vibration Dose Value) of 0.8m/s$^{1.75}$ ▪ 50mm/s PPV at 4Hz and above (structural integrity)
IPT & CBT Rooms	▪ Without tactile feedback: VDV (Vibration Dose Value) of 0.8m/s$^{1.75}$With tactile feedback: Criteria to be set based on testing and/or equipment certification requirements to avoid perceptibility of construction vibration during simulator operation. ▪ 50mm/s PPV at 4Hz and above (structural integrity)
Simulator/Monitor Rooms	▪ 3mm/s PPV (equipment integrity) ▪ 50mm/s PPV at 4Hz and above (structural integrity)
Simulator Cabins	▪ Criteria to be set based on testing and/or equipment certification requirements to avoid perceptibility of construction vibration during simulator operation.
EP Pool	▪ VDV (Vibration Dose Value) of 0.8m/s$^{1.75}$ ▪ 50mm/s PPV at 4Hz and above (structural integrity)
EP Training	▪ VDV (Vibration Dose Value) of 0.8m/s$^{1.75}$ ▪ 50mm/s PPV at 4Hz and above (structural integrity)

PLANNING AND COMMUNICATION

RMS are to undertake detailed construction noise and vibration management planning for any activities that have the potential to result in noise and vibration impacts at the Qantas flight training centre. This planning should also include overall site procedures and laws to manage noise and vibration on an ongoing basis. Qantas shall be provided with updates of this planning.

RMS and Qantas representatives are to meet on a 4 weekly basis (or as mutually agreed) to discuss upcoming works. During this, Qantas will provide RMS with information on any areas which will be more or less sensitive to noise in the upcoming period (for instance, training rooms which may be unoccupied at particular times during the day). RMS will provide Qantas with the works proposed for the upcoming 4 weeks. Both parties will discuss any issues and opportunities to maximise flexibility.

MONITORING PROCEDURE

The method for demonstrating compliance and identifying potential non-compliances for construction noise will be a noise and vibration monitoring program.

The strategy for this monitoring will include:

- Monitoring externally to the Qantas building, at appropriate locations based on the location of the work and the closest potentially affected sensitive area. The purpose of this monitoring will be to allow RMS and Qantas to track external noise and vibration levels in line with relevant external triggers. Noise monitoring locations for each construction phase or construction activity will be nominated by the construction contractor, with locations chosen to accurately represent the noise and vibration levels incident on the most affected Qantas spaces for the activity. The construction contractor shall identify the number of monitoring locations required based on construction activites, with at least 1 monitoring location at all times. RMS may elect to use attended or unattended monitoring. Vibration monitoring should be undertaken during any vibration-intensive activities (such as those generating vibration or impacts to the ground).
- Monitoring internally within Qantas spaces, as attended spot-measurements. The purpose of this monitoring will be validate that the site laws are achieving compliance with the internal noise criteria, and to enable adjustment of the site laws if appropriate. Attended spot-measurements within Qantas facilities would be carried out when new construction activities are to be undertaken, or the same activities in a different location. These measurements may be carried out at times when the internal Qantas space is not occupied to get reference levels for the construction activity, provided that the measurements accurately represent the construction noise levels that will be received within the Qantas space when in use.
- Additional monitoring internally within Qantas simulator bays [currently under discussion]

Monitoring Equipment

Noise monitoring equipment (attended or unattended) must allow for:

- Measurement of L_{eq} and L_{max} noise levels in octave bands (with a 15 minute measurement period nominated)

Vibration monitoring equipment (attended or unattended) must allow for:

- Measurement of triaxial vibration levels in line with the nominated criteria

Unattended noise and vibration monitoring equipment must allow for:

- Notification of warning levels or exceedances to multiple people, at minimum by SMS
- Remote data upload and/or real time viewing would be beneficial, but not essential provided that RMS can react appropriately to exceedances through warning and exceedance notifications

NOTIFICATION

RMS and Qantas are each to nominate a person or people to be notified in the event of noise or vibration limits being exceeded.

RMS should nominate and set warning levels below the ultimate compliance limit, to be used to detect and mitigate potential exceedances before they occur. These warning levels should notify relevant RMS staff in real time.

In the event of an exceedance of the external triggers (at a time when Qantas are using the affected space), both Qantas and RMS staff should be notified in real time so that RMS can remedy the noise or vibration level, and Qantas can review any impacts to their operation.

EXCEEDANCES AND CONTROLS

This section outlines the procedure if limits are found to be exceeded.

Single Exceedance

If a single exceedance is measured at either the external monitoring positions, the specific activity causing the exceedance is to be stopped (or relocated away from the Qantas building) until RMS have identified the reason for the exceedance and put in place mitigations to prevent a reoccurrence.

Qantas are to be advised of the exceedance and the mitigations prior to the activity being resumed in the same location.

Repeated Exceedance

In the event of a repeated exceedance, the specific activity responsible for the exceedance is to cease in the vicinity. If multiple activities could be contributing, all relevant activities should cease. The exceeding activity must not resume until a full re-assessment of that activity has taken place, including:

- A reassessment of the noise and vibration impacts of the activity, using information taken from the non-compliant event.
- A new construction noise and vibration control strategy investigated and implemented to achieve compliance. This may include alternative equipment, screening, time-scheduling, updates to site laws, or other.
- Ongoing monitoring of the activity, with Qantas notified of any exceedances. Further exceedance would require the activity to be ceased and these steps followed again to reduce noise levels.

Time and Spatial Management

Qantas activities in parts of the building are effectively a 24 hour operation.

Qantas will work with RMS to advise of times where parts of all of the building may be less sensitive to noise and vibration, to allow for time-scheduling of noisy activities where practical (noting that simulators are likely to have minimal opportunity for scheduling controls).

Qantas will also work with RMS to relocate non-location sensitive activities to less affected parts of the building where practical. This may include classrooms spaces, but is not likely to include training devices and will not include simulators.

NORMAN DISNEY & YOUNG

Thomas Warren
Senior Associate | Acoustics Section Manager
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