Allianz Stadium
Operational Noise Management

CCC Update

5 September 2025

venues.
new south wales

Agenda

1. Welcome and Introductions
2. Approved Operational Noise Framework
3. Trial Period Results & Observations
4. Recommendations and next steps

Conditions of Consent

SSD 9835 was approved and modified by the Minister for Planning and Public Spaces subject to several operational noise conditions

Condition	Requirement
D45	Installation of the permanent real-time noise monitoring system (PNMS) to measure and record noise
D46	Installation of permanent weather station to determine meteorological conditions that may influence noise generation
D48	Preparation of an Operational Noise Management Plan (ONMP)
E2	Non-event operational noise limits
E2A	Event operational noise limits

- July 2022 – ONMP (Version 6) approved by Planning Secretary's delegate
- April 2024 – ONMP (Version 15) current, updates for Mod 8 and DPE comments

Trial Period

The Trial Period definition and purpose is clearly set out in the EIS, the ONMP and the Department's Assessment Report

- Trial Period Purpose:
  - To validate the noise limits and noise monitoring system
  - Enable a review of the noise limits
  - Enable a review of monitoring locations
- Trial Period Definition:
  - Established by the ONMP (Section 2.5) as "The first 24 months following the commencement of operations at the SFS"
- At completion of Trial Period:
  - Noise levels will be reviewed at end of Trial Period

Operational Noise Observations

In the two years that Allianz Stadium has been operating, Venues NSW has been able to validate the implications of the conditions of consent

- The proposed criteria levels and parameters set by Arup (SME consultant), do not equate to the previous venue criteria.
  - Historic: Lmax = 80 dB(A) and 100 dB(C)
  - Current: Leq(5min) = 70 dB(A) and 90 dB(Z)$_{1/1\ oct,\ 63Hz}$

The former Sydney Football Stadium

- **(Maximum Sound Level) – 80 Lmax**
- Lmax refers to the maximum sound pressure level recorded during a measurement period.
- 80 Lmax means the loudest instantaneous noise level measured was 80 decibels (dB).
- Lmax is a peak measurement – the loudest moment, crowd noise, even if a brief spike.
- Lmax is commonly used to assess impact noise, like aircraft flyovers, explosions, or loud bangs.

The new Allianz Stadium under trial conditions

- **Arbitrary Trial level - Leq (Equivalent Continuous Sound Level) – 70 Leq (5min)**
- What it means: Leq represents the average noise level over a period, accounting for varying levels of sound.
- 70 Leq means that over the measurement period, the average energy of the noise equalled 70 dB.
- Leq is commonly used for environmental noise assessments, such as traffic or industrial noise.

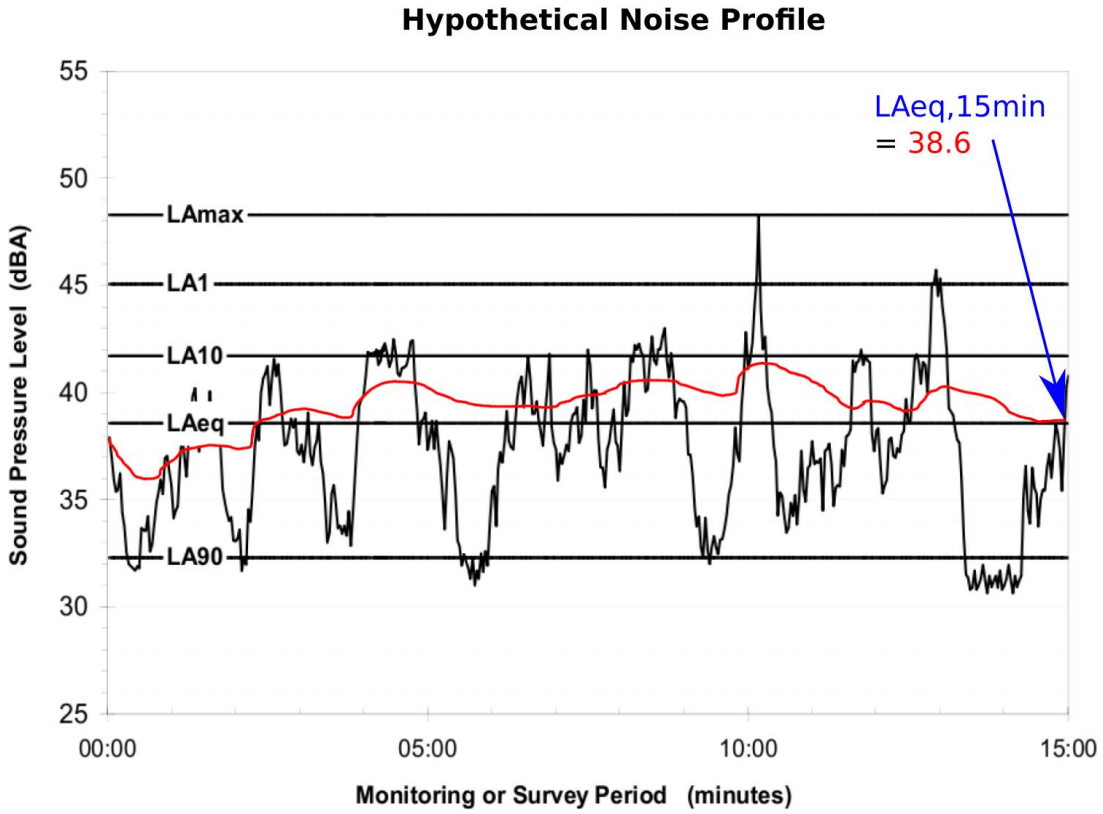
v.

Observations

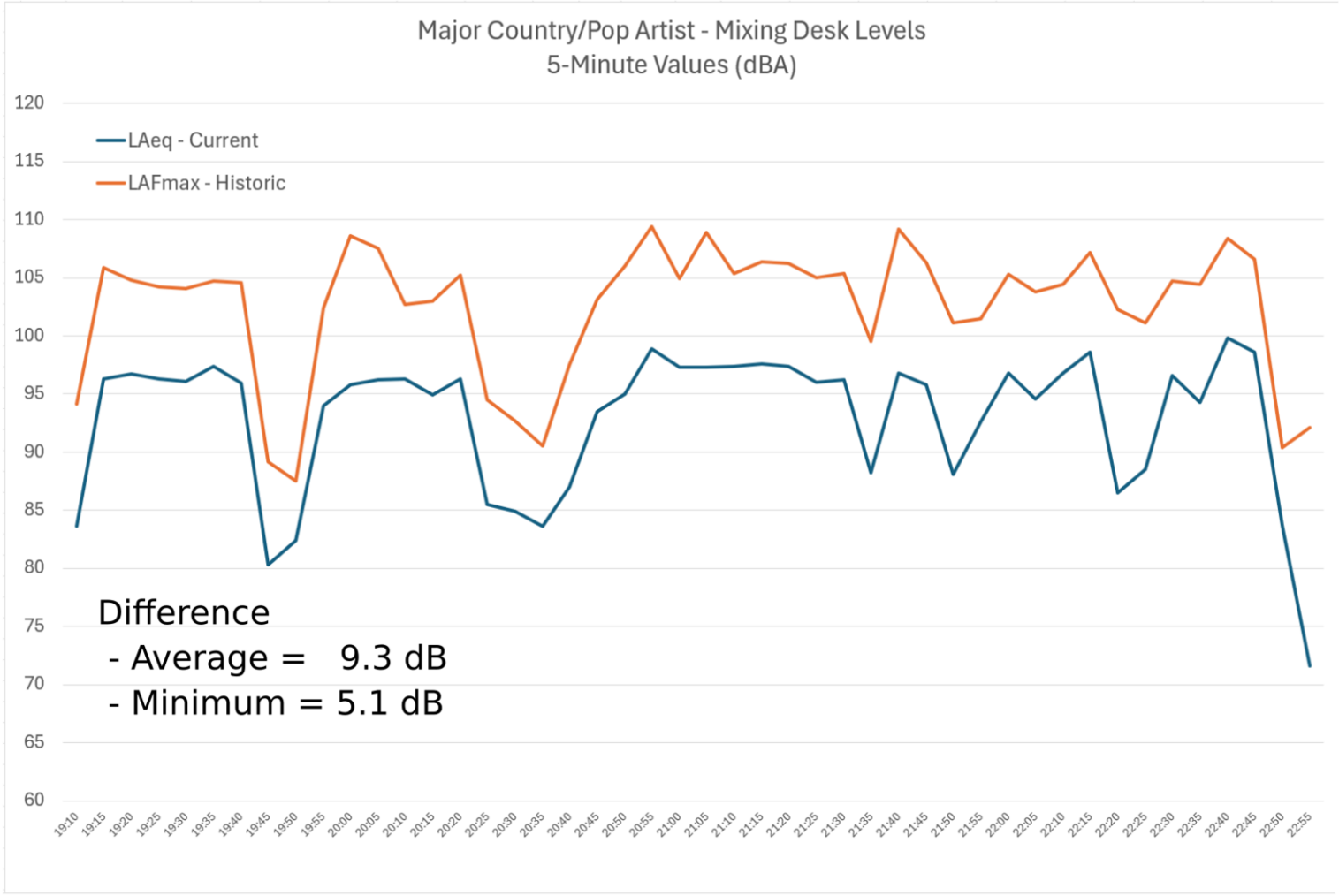
Trial Parameters

- The trial period levels and parameters set by Arup, do not equate to the historic noise management plan levels which was always the intention.
  - Current: Leq(5min) = **70** dB(A) and 90 dB(Z)1/1 oct, 63Hz
  - Historic: Lmax = **80** dB(A) and 100 dB(C)

- For the coming concert season, Venues NSW has proposed a **75 Leq** concert operating level.



Further explanation



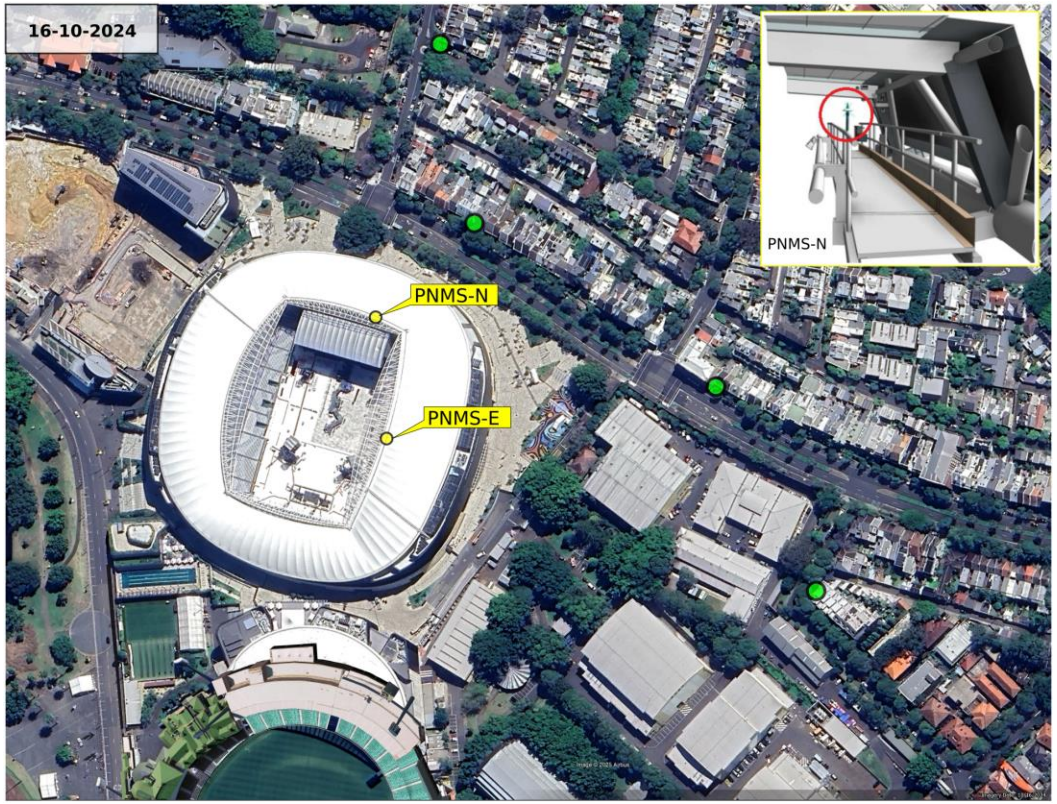
End of Trial – Key Findings

Arup has prepared an End of Trial Assessment Report to satisfy SSD 9835 Condition E8.

- The Permanent Noise Monitoring System (PNMS) is effective in determining concert noise levels at critical receiver locations.
- The new system is preferred to attended noise monitoring as it is less affected by extraneous noise or weather events at the receiver locations.
- The new system provides better real-time monitoring, with any anomalies/issues quickly communicated to event control.
- The trial Leq noise level is not equivalent to the former SFS's Lmax limit.

Permanent Noise Monitoring System

Allianz Stadium's new system is functioning well, particularly for concerts. The receiver locations are pictured below.



End of Trial – Key Recommendations

Arup's End of Trial Assessment Report provides a suite of recommendations for Concert and Sporting events.

- Concert recommendations:
  - remove the requirement to measure transfer functions prior to every concert event that utilises the standard south facing stage orientation.
  - adopt standardised transfer function values based on collected sample, noting there will be some variation between artists, music styles, and weather.
  - establish a fixed broadband dBA transfer function based on the most conservative measured level differences between the PNMS and attended measurements at the critical receiver location during pink noise tests
  - implement adjusted concert noise levels as per the below:

Old Allianz Stadium	2 Year Trial Period	Revised Levels
80 dB(A) $_{Lmax}$	70 dBL $_{Aeq,5min}$	75 dBL $_{Aeq,5min}$
100 dB(C) $_{Lmax}$	90 dBL $_{Zeq63Hz,5min}$	93 dBL $_{Zeq63Hz,5min}$

The Case for Change

The operational noise observations collated over the last two years have determined a need to adjust the operating environment.

- The concert noise levels have reduced, relative to the former SFS.
- The new, larger roof and limited openings around the stadium's extremities contain the sound significantly better than the former venue.
- The permanent noise monitoring system is operating as intended
- Monitoring during the trial period has highlighted the difference with existing historic operating levels.
- With three concerts in December (Kendrick Lamar and Dom Dolla), we'll provide a full report to the CCC at our first meeting next year.

thank you