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ACOUSTICAL REPORT

PROPOSED GAMING ROOM

IVANHOE HOTEL: 23 THE CORSO, MANLY NSW

Date: 13 May 2019

File Reference: 3627R20190311aslvanhoeHotel_DAv4.docx

DOCUMENT CONTROL

Project title	Acoustical Report. Proposed gaming room Ivanhoe Hotel: 23 The Corso, Manly NSW
Project number	3627
Document reference	3627R20190311asIvanhoeHotel_DAv4.docx
Document path	Z:\ACOUSTICS\ACOUSTICS 19\REPORT\Clubs and Restaurants\3627 - Ivanhoe Hotel\3627R20190311asIvanhoeHotel_DAv4.docx

Version	Date	Author	Review	Notes
V1	12/03/2019	AS	MFC	Report version 1 available for issue
V2	26/03/2019	AS	AS	DA drawings updated
V3	15/04/2019	AS	AS	Updated drawings
V4	13/05/2019	AS	AS	Updated drawings

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**ACOUSTICAL REPORT
PROPOSED GAMING ROOM**

IVANHOE HOTEL: 23 THE CORSO, MANLY NSW

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1.0 INTRODUCTION

This report has been prepared to assess potential acoustical impacts related to a proposal to extend the Ivanhoe Hotel into 23 The Corso, Manly which would result in a new ground floor level gaming room and first-floor level storage space.

Any noise that is generated by the new hotel gaming room and first-floor level storage areas must not adversely impact acoustic amenity conditions for nearby residential premises.

2.0 THE PROPOSAL

The proposed extension of the hotel will occupy the ground and first floors of 23 The Corso, Manly. Currently, this space is occupied by a retail chemist. Figure 1 shows the proposed ground floor layout, prepared by Paul Kelly Design, dated 03.05.2019.

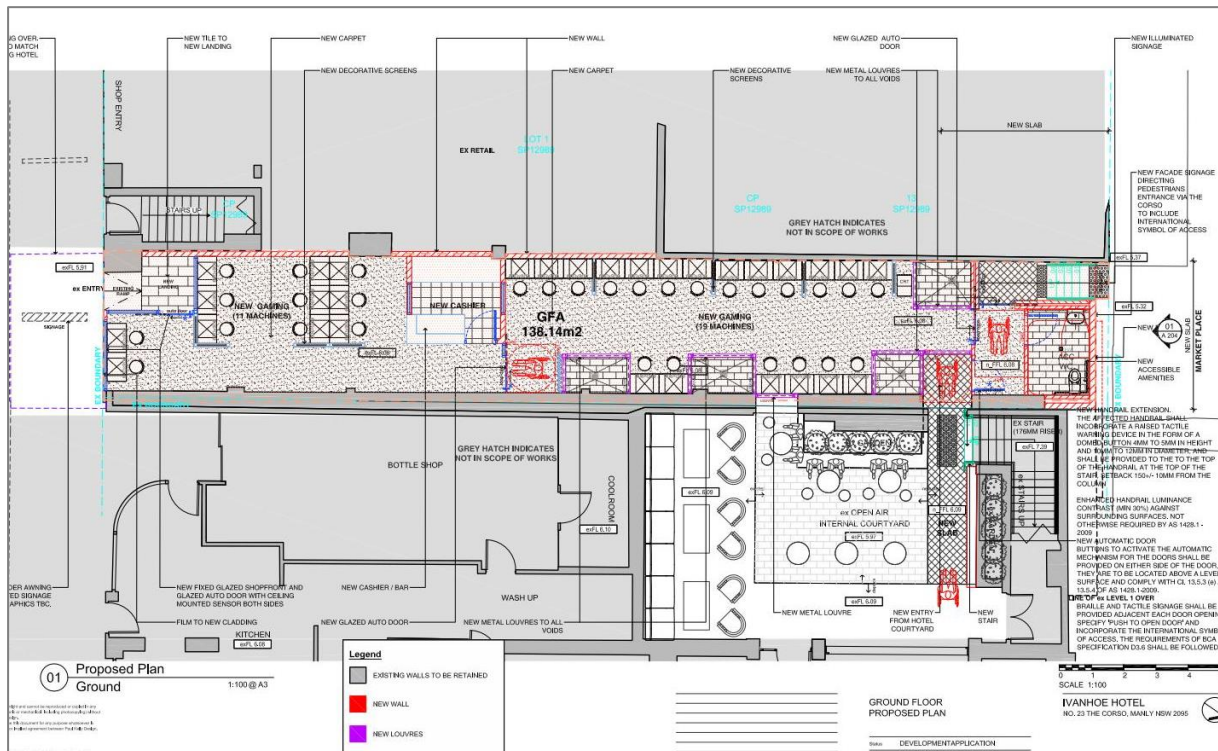


Figure 1. Proposed ground floor layout

The proposed gaming area would follow existing hotel trading hours. The proposal will not result in any further modification to the existing use of the hotel.

3.0 NOISE LOGGING SURVEY AND APPLIED NOISE CRITERIA

In order to assess the development proposal in terms of its impact on residential noise amenity, Koikas Acoustics has conducted an on-site environmental noise logging survey to establish existing background noise levels in the area. The background noise level is typically used to evaluate the point at which noise from a particular development may be found to unreasonably impact on noise level amenity for surrounding residential development. For noise that is emitted from a licensed venue, such as from hotel gaming rooms, the applied residential noise criteria are:

- LA₁₀ noise levels from licensed venue noise sources must not exceed 5dB above the background level (assessed in 1/1 octave bands) at a residence between the hours of 7am to 12 midnight.
- LA₁₀ noise levels from licensed venue noise sources must not exceed the background level (assessed in 1/1 octave bands) at a residence between the hours of 12 midnight and 7am.
- Noise from licensed venue noise sources must not be audible inside a habitable room in any residence after 12 midnight and before 7am.

A noise logging survey was conducted by Koikas Acoustics between Wednesday 20th and Tuesday 26th February 2019 to establish existing environmental noise levels in the local area. The noise logger used for the survey was a Type 1 Svantek 977 environmental noise logger, installed on top of the existing awning at 23 The Corso, Manly (as shown in Figure 2).

The logger was field-calibrated before and after the survey with a Larson Davis CAL200 precision acoustic calibrator. No system drift was recorded over the duration of the survey.

A review of meteorological conditions during the course of the survey revealed that adverse weather conditions were unlikely to have affected the surveyed background noise levels.



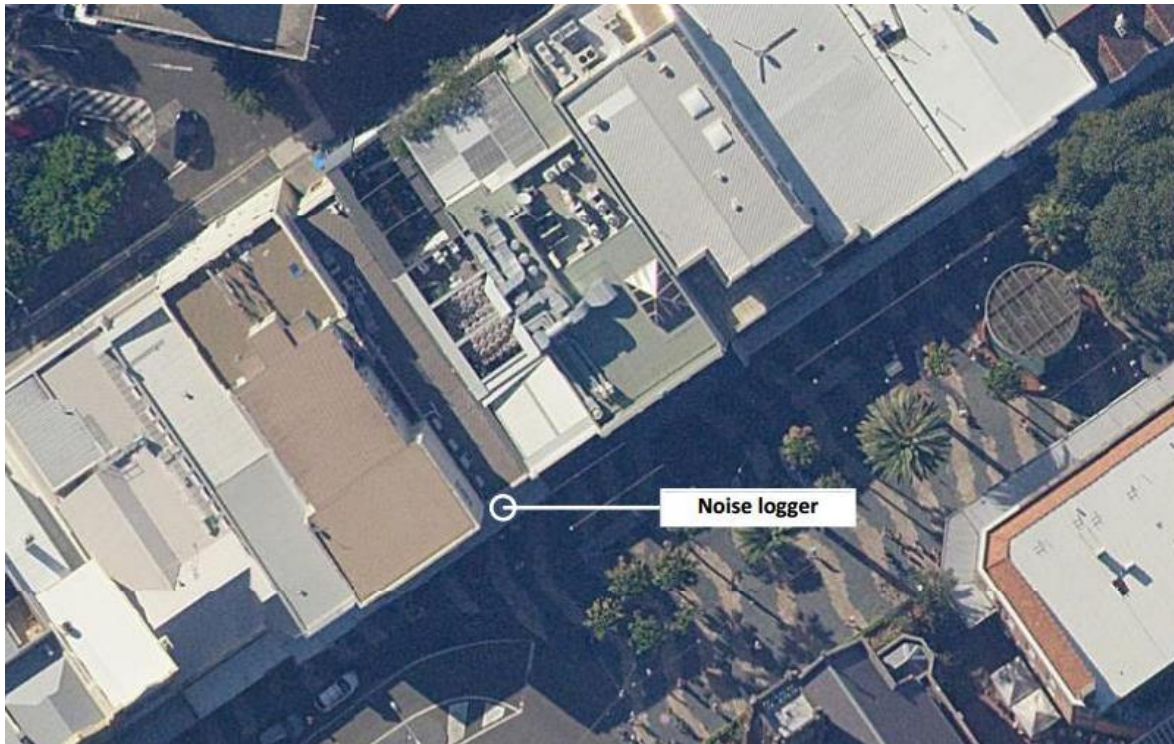


Figure 2. Noise logger location

A summary of the noise logging survey results and the adopted noise criteria is provided in Tables 1 and 2.

Table 1. Noise logging survey results [dB]

Description	1/1 octave band centre frequency [Hz]								Total
	63	125	250	500	1000	2000	4000	8000	
LA90 background noise 7am to 6pm	33	41	45	49	51	51	50	44	57
LA90 background noise 6pm to 10pm	32	41	45	50	51	51	50	44	57
LA90 background noise 10pm to 12am	28	38	42	45	44	43	38	28	50
LA90 background noise 12am to 3am	24	35	40	43	42	41	38	26	48

Table 2. Applied noise criteria [dB]

Description	1/1 octave band centre frequency [Hz]								Total
	63	125	250	500	1000	2000	4000	8000	
Applied noise criteria before midnight	33	43	47	50	49	48	43	33	55
Applied noise criteria after midnight	24	35	40	43	42	41	38	26	48

Further to the above, for noise to be deemed inaudible after midnight, the licensed venue noise (LA10) should be 8-10dB lower than the ambient background level when assessed inside an affected residence. Where this condition is met, it is implied that the general ambient noise of the area will mask licensed venue noise. As such, the adopted threshold for inaudibility after midnight is LA10 38-40dB.

4.0 EXISTING GAMING ROOM NOISE LEVELS

In addition to the background noise logging survey, attended measurements of noise within the existing hotel gaming area were taken such that an analysis of noise breakout from the future gaming room could be conducted.

The existing outdoor gaming room at Ivanhoe Hotel only has approximately 10 gaming machines and is significantly smaller than the proposed new gaming room. During the survey conducted within the existing outdoor gaming room, only 3 of the 10 machines were being used. The measured indoor average LA10 noise level was found to be 65dB. Koikas Acoustics believes that this does not accurately represent future noise levels within the proposed new gaming room.

In this regard, Koikas Acoustics has based our noise model and calculations on average indoor noise levels measured in larger outdoor gaming rooms that are more representative of that which is proposed.

Table 3. Outdoor gaming room noise levels, LA10 [dB]

Description	1/1 octave band centre frequency [Hz]								Total
	63	125	250	500	1000	2000	4000	8000	
Outdoor gaming room	40	45	61	69	69	67	62	54	74

5.0 CALCULATED GAMING ROOM NOISE AT RECEIVERS

The nearest affected residential receivers are located in residential apartments at 19-21 The Corso, Manly. The residential apartments are located on floors 1-3 above the existing retail chemist on the ground level. The most noise-affected locations are windows in the eastern façade of the apartment building, which become the assessment locations when assessing noise levels from the gaming room.





Figure 3. Aerial view of nearby residential receivers

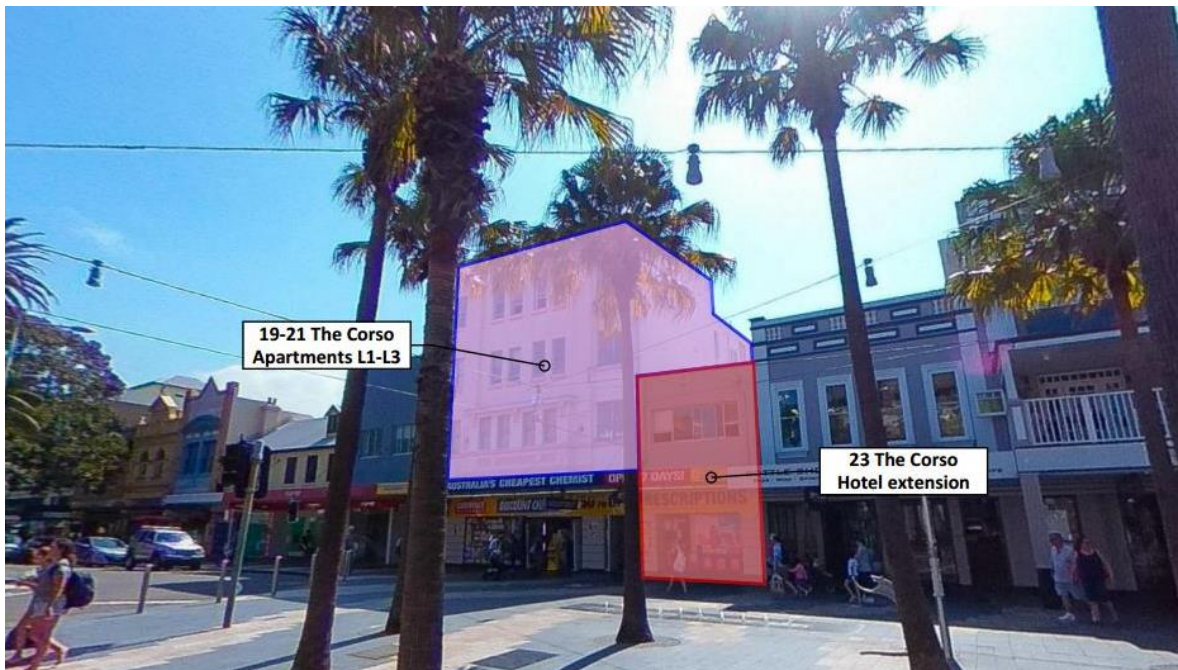


Figure 4. Street view of nearby residential receivers

Noise breakout from the gaming room will be via four ceiling penetrations that extend through the first-floor level via shafts and open onto the roof. The ceiling/roof voids are used as a means of providing a supply of fresh air to the gaming room such that it can also be used as a smoking breakout area.

Modelling of noise emission was conducted in CadnaA. The model assumes indoor gaming room noise levels of LA10 74dB, an open ceiling void area (0dB sound transmission loss), and acoustic absorption applied to the shaft walls (minimum Noise Reduction Coefficient of 0.7).

Resulting gaming room noise levels at the most noise-affected of the residential apartments were found to be LA10 38dB. In relation to the existing background noise, gaming room noise levels will be:

- 19dB below the daytime and evening background noise levels
- 12dB below the background noise level just prior to midnight
- 10dB below the background noise level after midnight

Based on this result, it is the professional opinion of Koikas Acoustics that gaming room noise will be inaudible at the nearest residential premises at any time. In this regard, gaming room noise will not result in any material increase in noise exposure for those residents and will not alter existing noise level amenity afforded to those residents.

Table 5. Calculated receiver noise levels, LA10 [dB]

Description	1/1 octave band centre frequency [Hz]								Total
	63	125	250	500	1000	2000	4000	8000	
Applied noise criteria before midnight	33	43	47	50	49	48	43	33	55
Applied noise criteria after midnight	24	35	40	43	42	41	38	26	48
Receiver noise levels	8	21	26	33	33	30	24	15	38

6.0 RECOMMENDED NOISE CONTROL

To control noise breakout via the ceiling/roof voids and the associated shafts created through the first-floor level above the gaming room, it is recommended that acoustic absorption is fitted along the shaft walls. The absorption should cover the entire shaft wall area on all sides.



The absorption should be able to achieve a Noise Reduction Coefficient (NRC) of no less than 0.7 and be minimum 25mm thick. Suitable products that are rated for external use include Soundblock Solution Stratocell Whisper 25mm, Megasorber FM25, or similar.

7.0 CONCLUSION

This report presents the results of an assessment of noise emission from the proposed new gaming room at Ivanhoe Hotel that is to occupy the ground floor level of 23 The Corso, Manly. The new gaming room forms part of a development proposal to Northern Beaches Council which also includes converting the existing first floor level of 23 The Corso into a storage space for the hotel.

The proposed gaming room is the only noise-generating component of the application. Noise from this area has been assessed in terms of its impact on nearby noise sensitive residential premises. The nearest and most likely to be affected by the proposal are residential apartments located on floor levels 1-3 of 21 The Corso, Manly.

In accordance with standard acoustical planning guidelines, noise from licensed venues is acceptable where it is found to not exceed the background level by more than 5dB prior to midnight, not exceed the background after midnight, and is not audible inside any residential premises after midnight.

The results of this assessment have found that noise attributed to the proposed gaming room will be significantly lower than the existing background noise levels in the local area and thus will have no impact on existing noise level amenity for surrounding residents. Noise from the gaming room is sufficiently lower than the background level that it is expected to be inaudible at all times.



APPENDIX A

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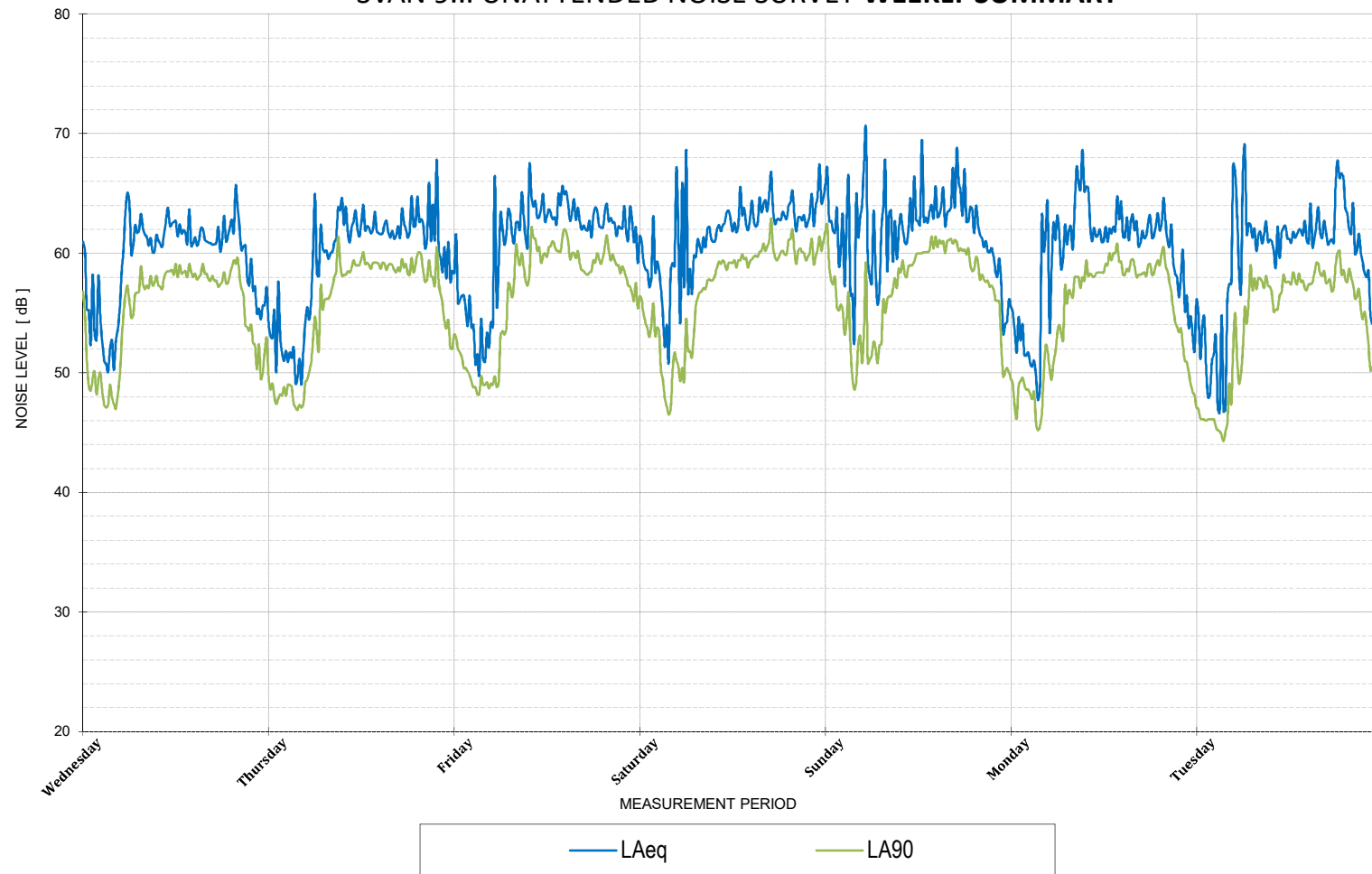
APPENDIX A

WEEKLY SUMMARY

LOGGER LOCATION: 27 The Corso, Manly

PERIOD: 20th to the 26th February 2019

SVAN 9... UNATTENDED NOISE SURVEY WEEKLY SUMMARY

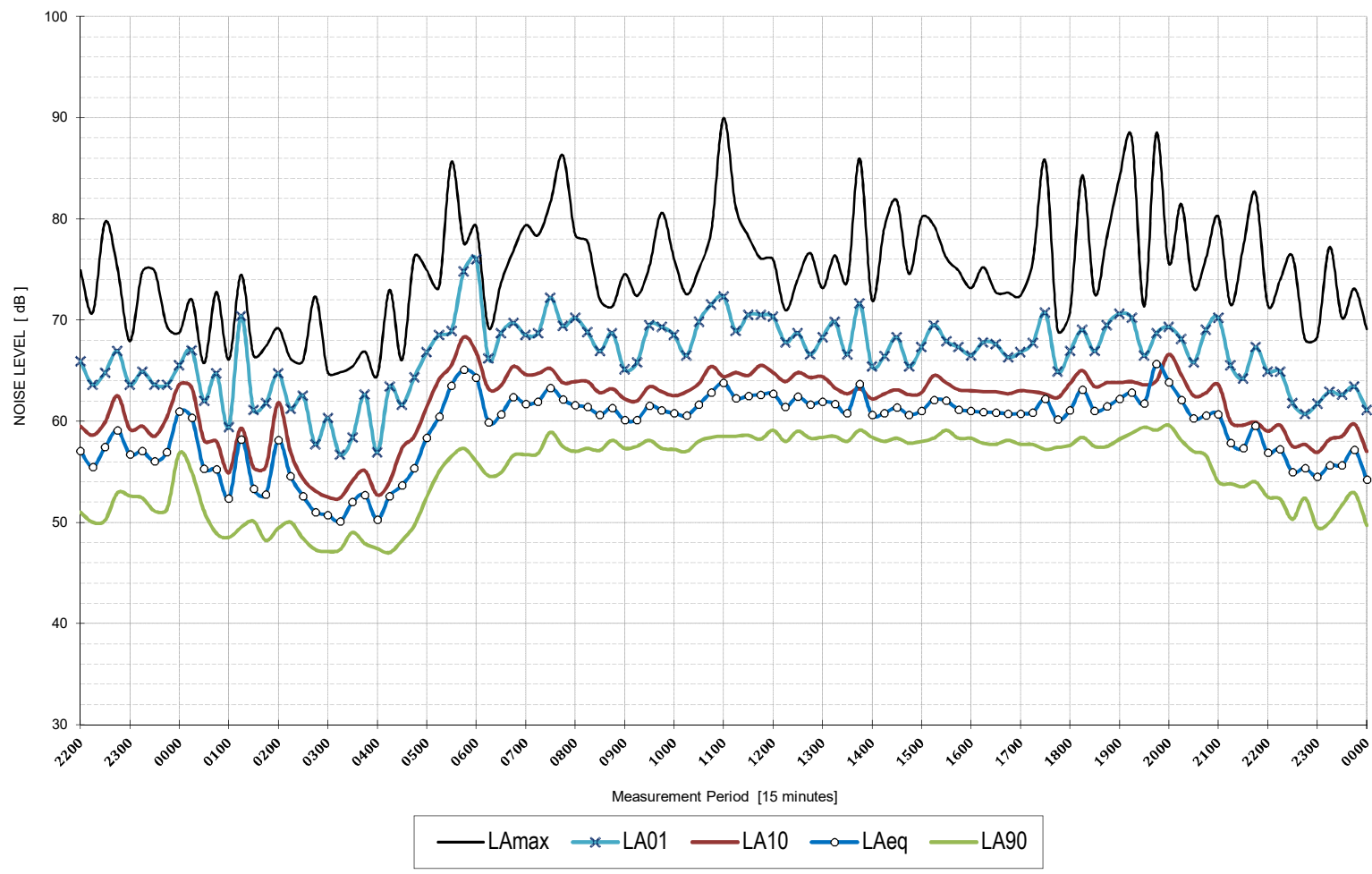


Sundays and Public Holidays the hours change to 0800

DAY 1

LOGGER LOCATION: 27 The Corso, Manly

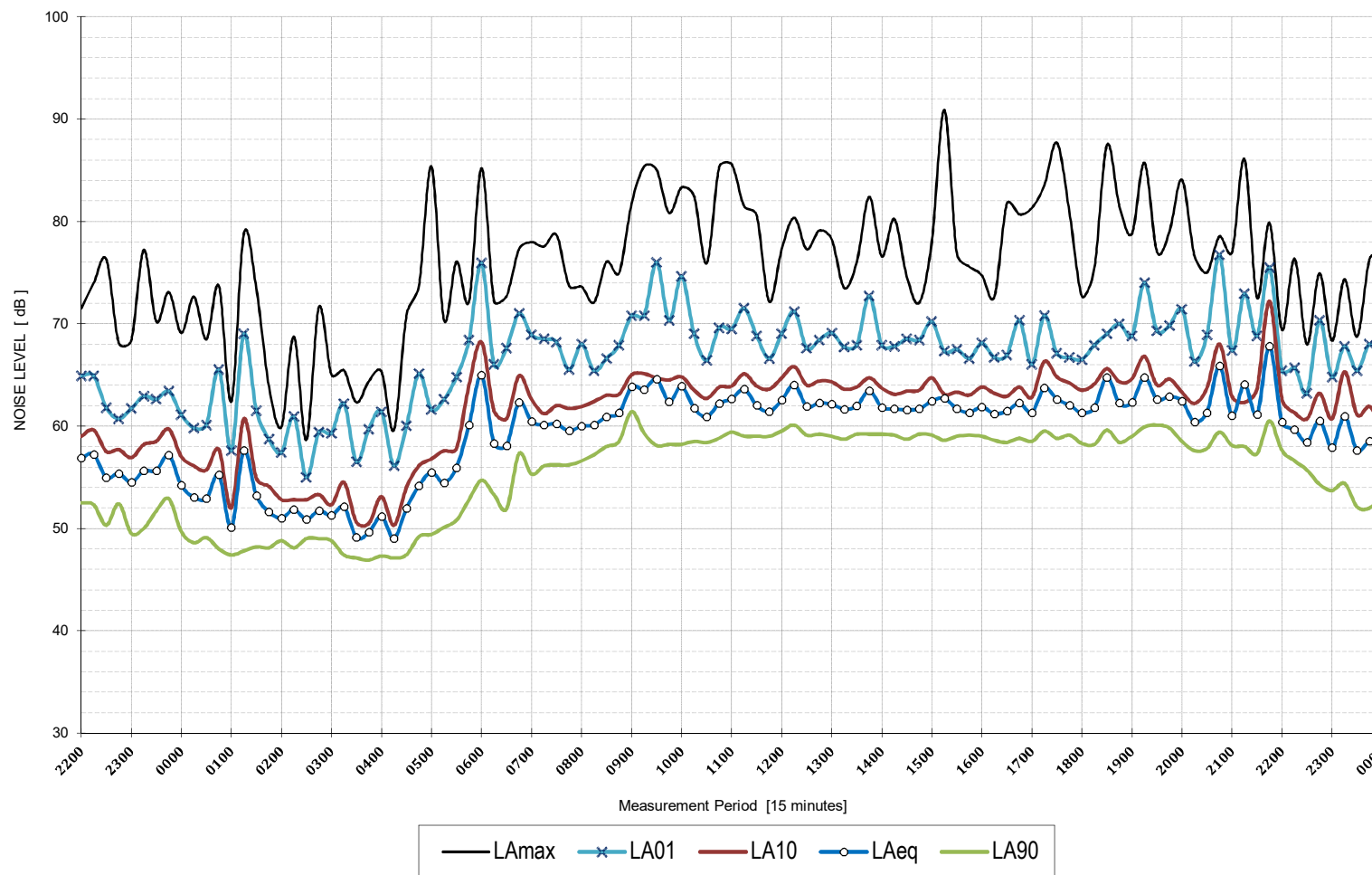
DATE: Wednesday, 20 February 2019



DAY 2

LOGGER LOCATION: 27 The Corso, Manly

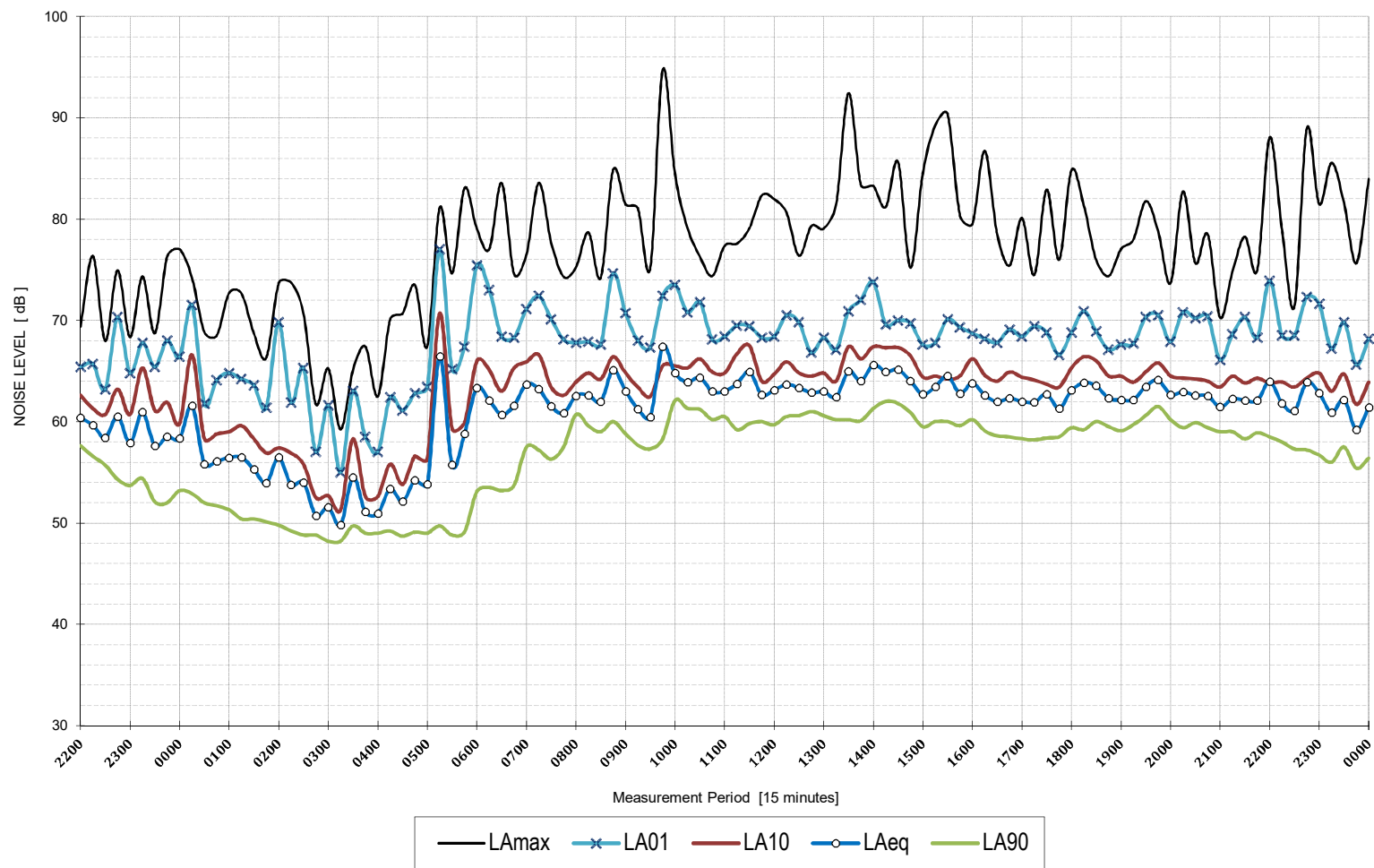
DATE: Thursday, 21 February 2019



DAY 3

LOGGER LOCATION: 27 The Corso, Manly

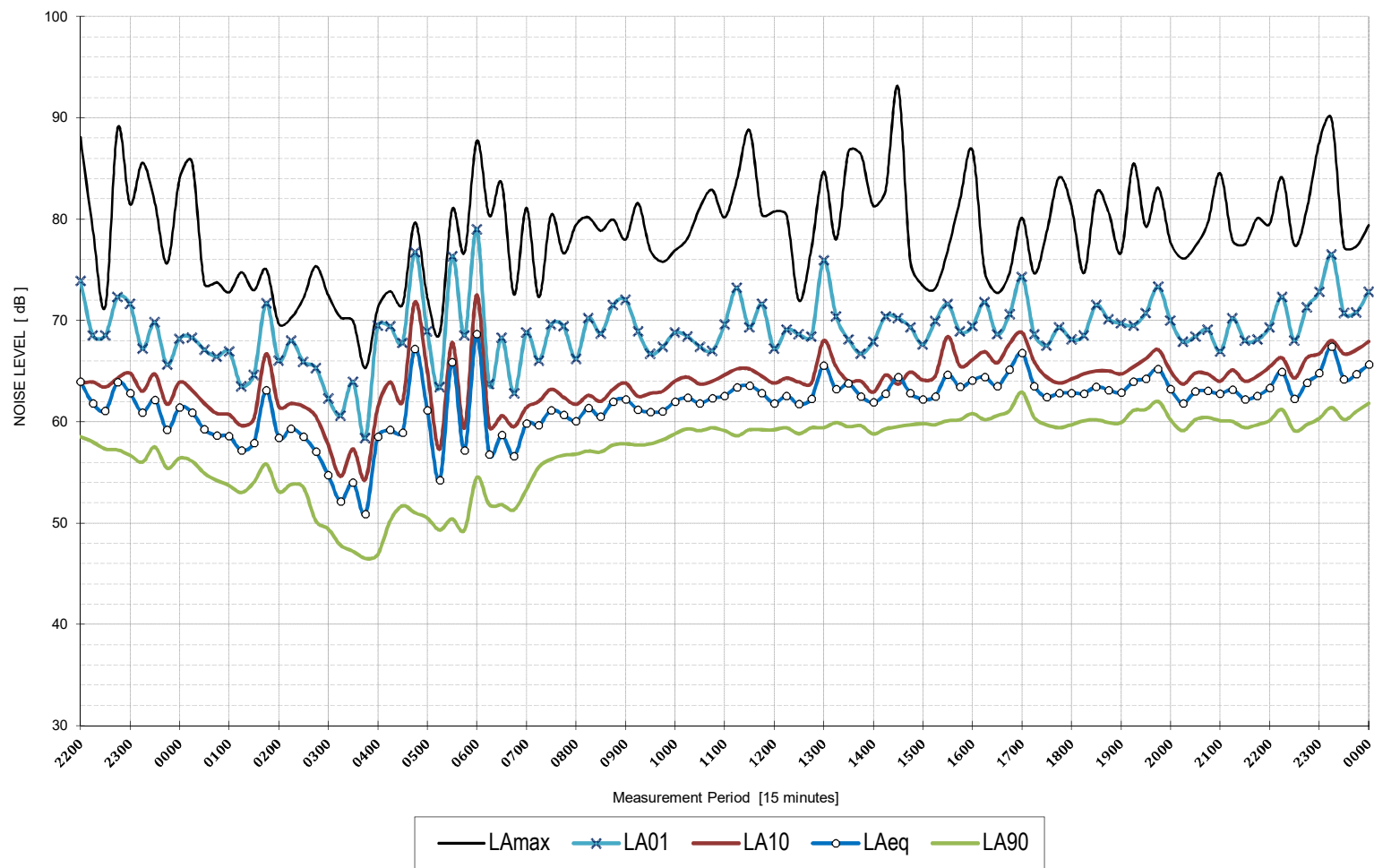
DATE: Friday, 22 February 2019



DAY 4

LOGGER LOCATION: 27 The Corso, Manly

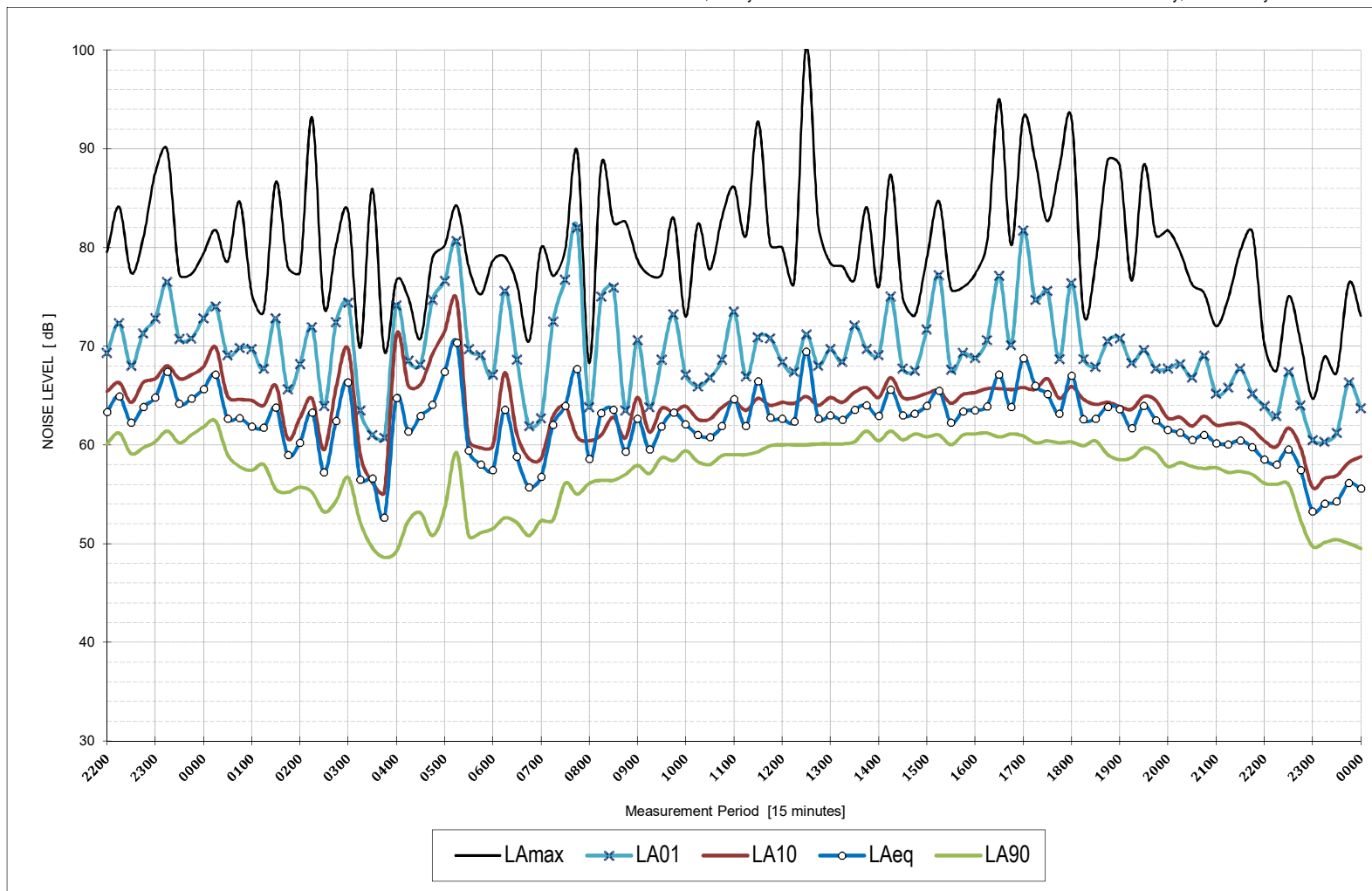
DATE: Saturday, 23 February 2019



DAY 5

LOGGER LOCATION: 27 The Corso, Manly

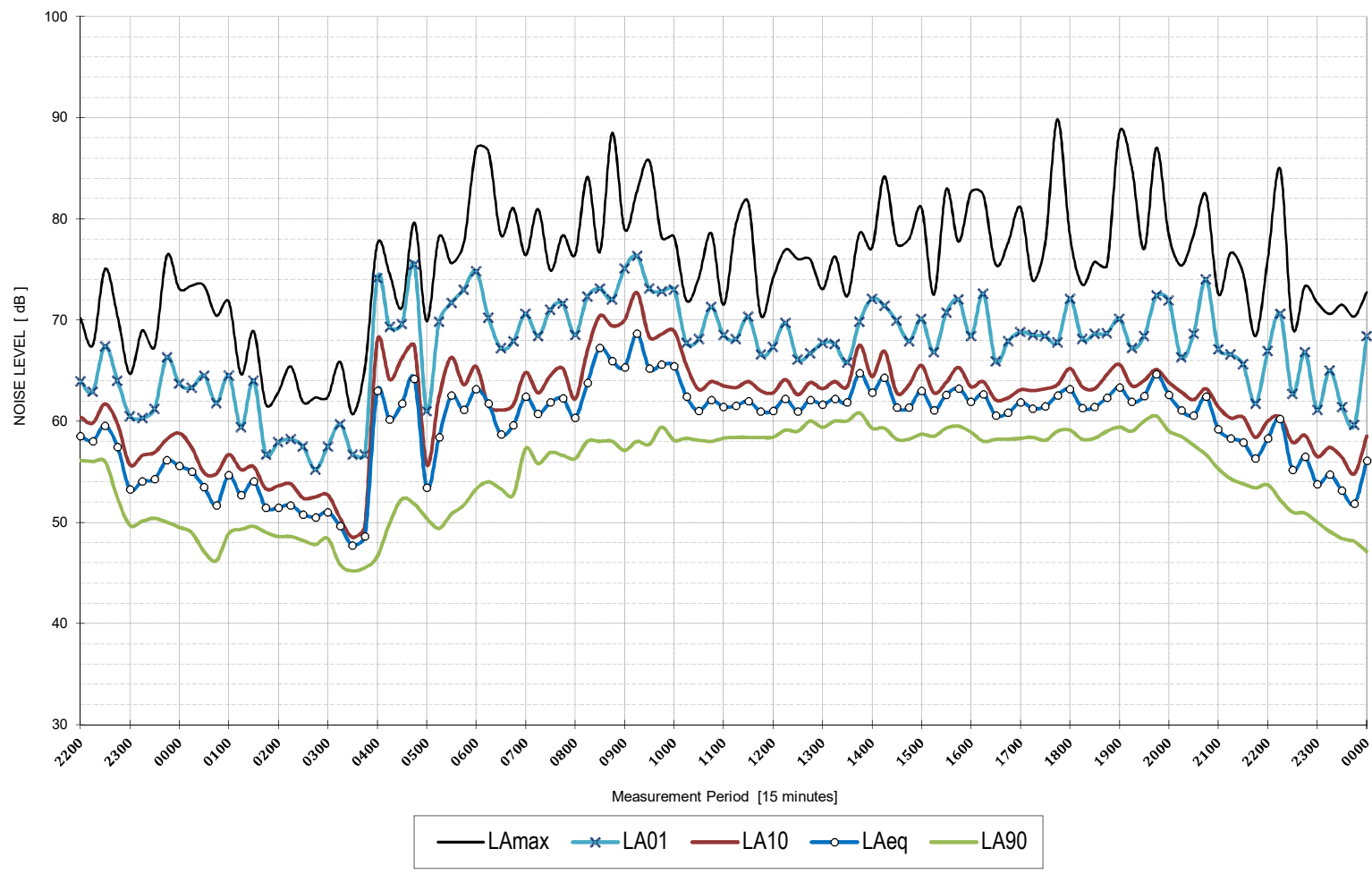
DATE: Sunday, 24 February 2019



DAY 6

LOGGER LOCATION: 27 The Corso, Manly

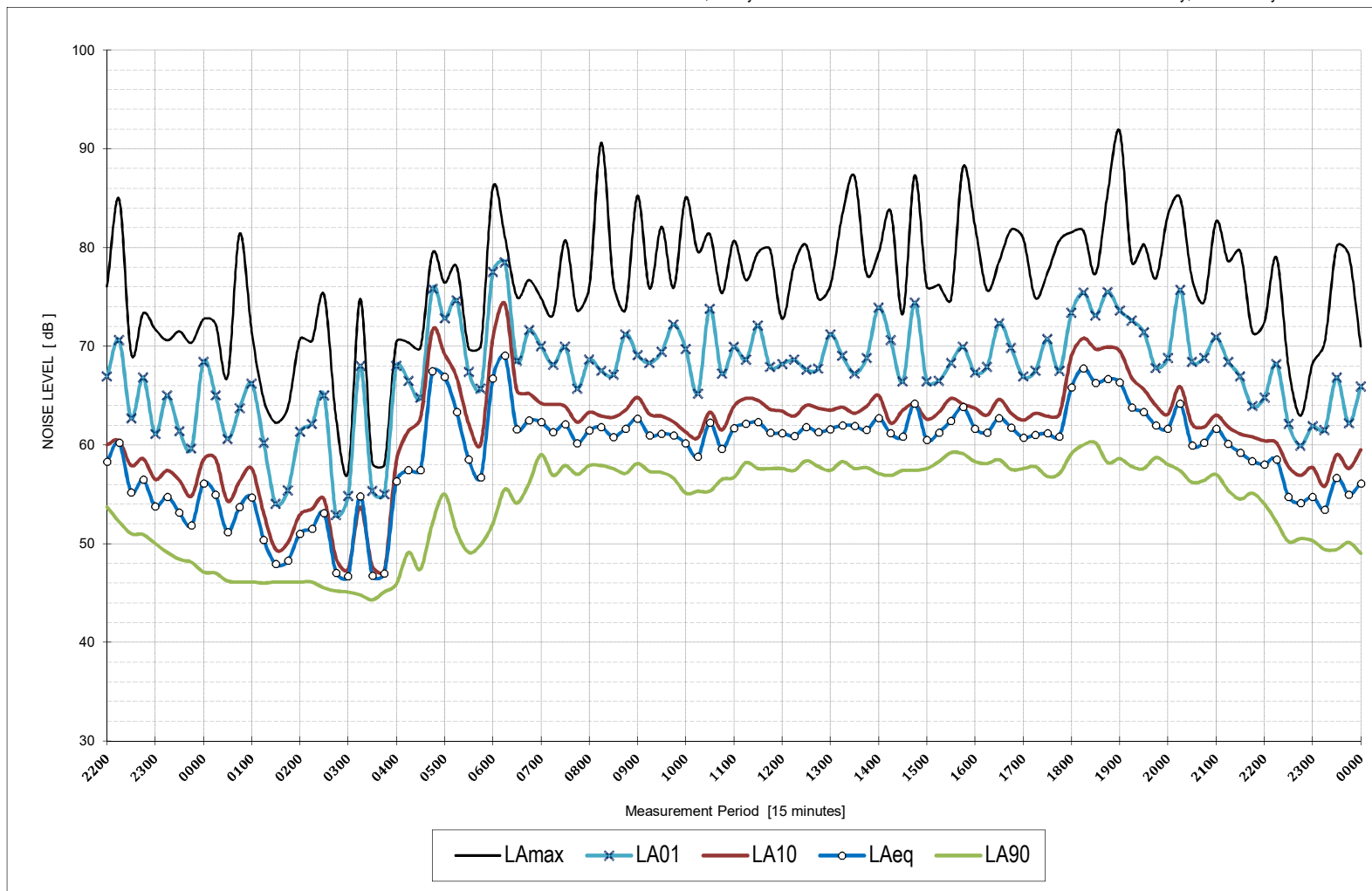
DATE: Monday, 25 February 2019



DAY 7

LOGGER LOCATION: 27 The Corso, Manly

DATE: Tuesday, 26 February 2019

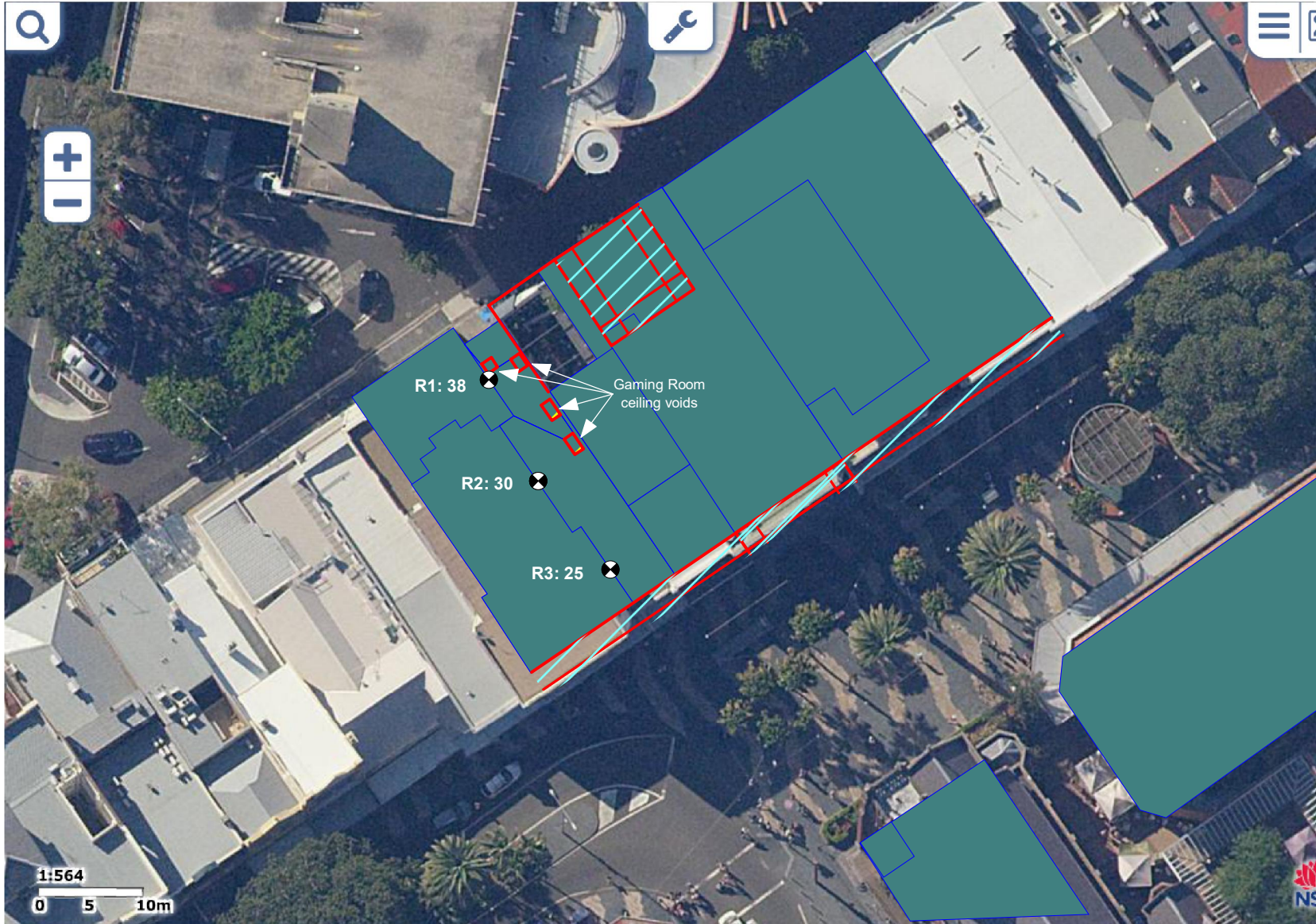


APPENDIX B

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APPENDIX B



<http://maps.six.nsw.gov.au/>

**** NOISE SOURCES ****

~ Noise breakout from the new gaming room

NOTES:

1. Noise levels shown are LA10
2. Receivers located at residential apartment window locations

PRINT DATE: 12.03.2019

VERSION: 3627 v1

- Area Source
- Building
- Barrier
- 3D-Reflector
- Receiver

- > -99.0 dB
- > 35.0 dB
- > 40.0 dB
- > 45.0 dB
- > 50.0 dB
- > 55.0 dB
- > 60.0 dB
- > 65.0 dB
- > 70.0 dB
- > 75.0 dB
- > 80.0 dB
- > 85.0 dB

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 E-mail Nick@KoikasAcoustics.com F (02) 9587 5337 P (02) 9587 9702

JOB NUMBER: 3627
CLIENT: Hilrok Properties Pty Ltd
SITE ADDRESS: Ivanhoe Hotel - 23 The Corso, Maly
ASSESSED TO: See acoustic report
LIMITING CRITERIA: See acoustic report