

GENESIS MAUI
LOT 7, 49 FRENCHS FORREST ROAD
FRENCHS FORREST
DA NOISE ASSESSMENT

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VERSION A

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PREPARED FOR

FOREST CENTRAL BUSINESS PARK PTY LTD
ACN 098-662-367
PO BOX 48
PYMBLE NSW 2073

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Version	Status	Date	Prepared By	Reviewed By
A	Final	4 September 2019	Brian Clarke	Sam Demasi

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GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

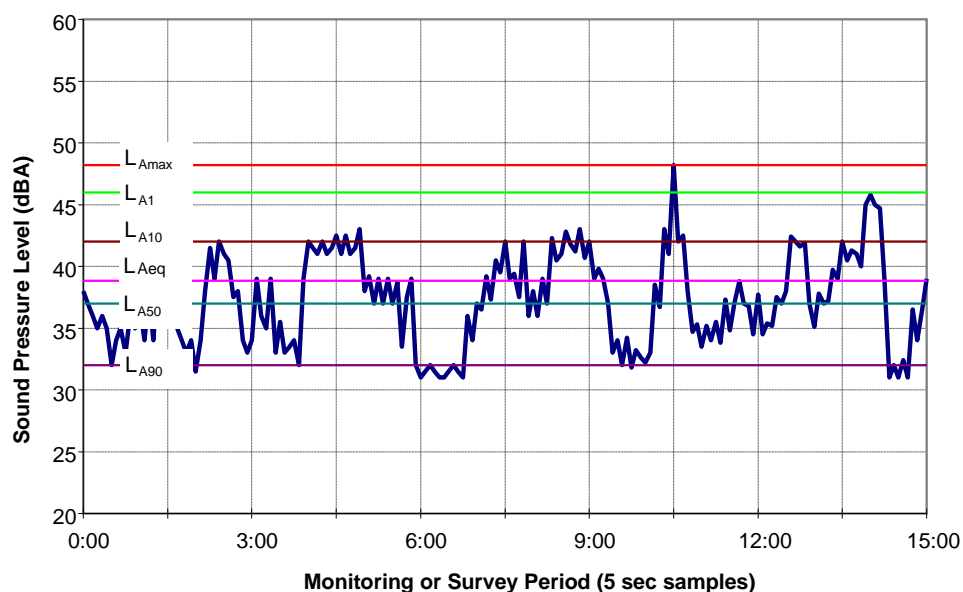
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

Wilkinson Murray has been engaged by Erilyan Pty Ltd to conduct a Development Application Noise Assessment of the proposed commercial development at Lot 7, 49 Frenchs Forrest Road. The site is currently unoccupied, and a new building will be constructed for Genesis Maui Oncology.

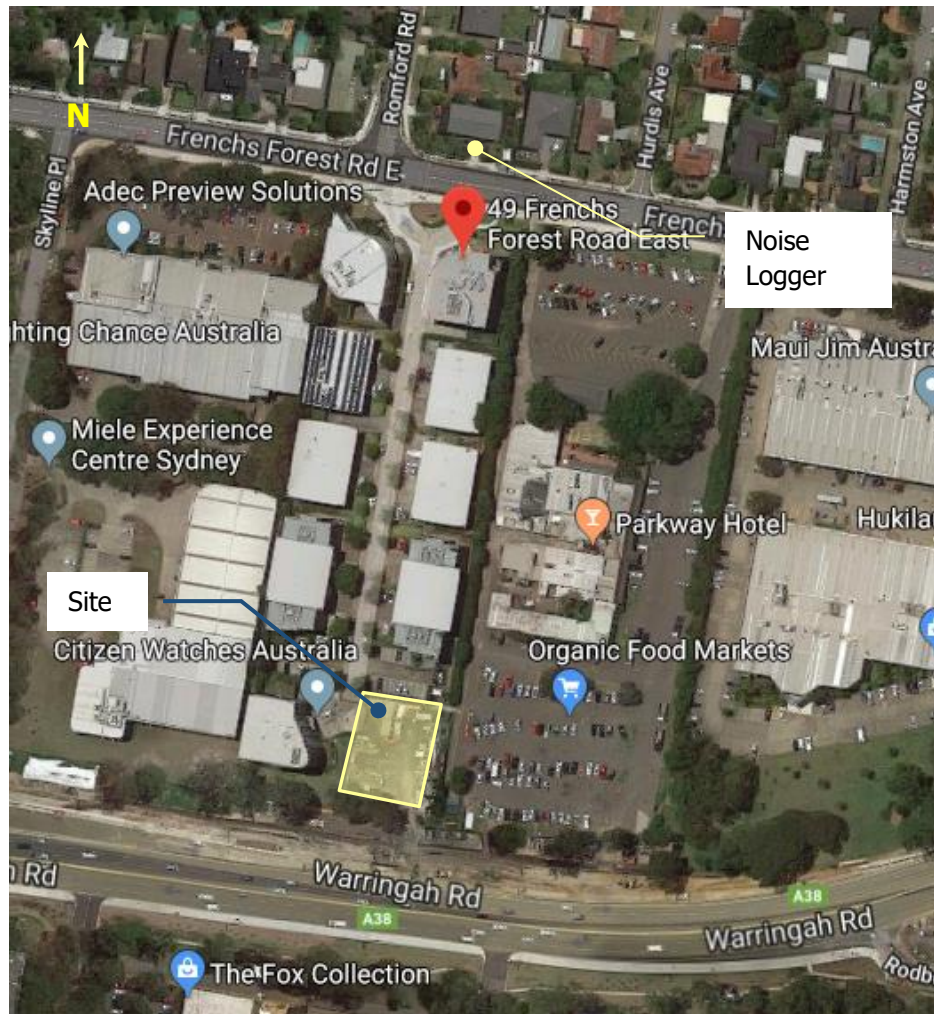
The scope of the noise assessment involves:

- Ambient noise measurements;
- Application of site-specific noise criteria at nearby residences; and,
- Review of mechanical services noise emission.

The following sections of this assessment detail the methodology, assessment criteria, results and acoustical recommendations.

Figure 1-1 shows the site and surrounding environs.

Figure 1-1 Site location



The site is bounded by:

- Commercial properties to the north and west of the site,
- Hotel carpark to the East; and
- Warringah Road to the South.

The nearest residences are located across Frenchs Forrest Road to the North at a distance in the order of 200 m.

2 SITE DESCRIPTION & PROPOSAL

The site is located in a commercial area at Lot 7, 49 Frenchs Forrest Road. The proposed development is to consist of the following.

The facility is to consist of:

- 3 levels of lower ground carpark;
- Ground level reception, dispensary offices and consulting rooms;
- Levels 1 to 5 treatment and consulting room; and
- Rooftop with mechanical plant.

The development is shown on Figure 2-1.

Figure 2-1 Proposed Development



3 AMBIENT NOISE LEVELS & NOISE CRITERIA

3.1 Council Requirements

Northern Beaches Council utilises the Warringah Council DCP 2011 and Section D3 states the following with respect to noise: in Section D3.

D3 Noise

Applies to Land

This control applies to land to which Warringah Local Environmental Plan 2011 applies.

Objectives

- *To encourage innovative design solutions to improve the urban environment.*
- *To ensure that noise emission does not unreasonably diminish the amenity of the area or result in noise intrusion which would be unreasonable for occupants, users or visitors.*

Requirements

1. *Noise from combined operation of all mechanical plant and equipment must not generate noise levels that exceed the ambient background noise by more than 5dB(A) when measured in accordance with the NSW Industrial Noise Policy at the receiving boundary of residential and other noise sensitive land uses.*
2. *Development near existing noise generating activities, such as industry and roads, is to be designed to mitigate the effect of that noise.*
3. *Waste collection and delivery vehicles are not to operate in the vicinity of residential uses between 10pm and 6am.*
4. *Where possible, locate noise sensitive rooms such as bedrooms and private open space away from noise sources. For example, locate kitchens or service areas closer to busy road frontages and bedrooms away from road frontages.*
5. *Where possible, locate noise sources away from the bedroom areas of adjoining dwellings/properties to minimise impact.*

The above objectives have been considered in developing site-specific noise criteria for this development. It should be noted that the Industrial Noise Policy is now superseded by the Noise Policy for Industry (NPfI).

3.2 Existing Ambient Noise Levels

Unattended noise monitoring was conducted at one location considered representative of noise levels at nearest residences being 1 Romford Road.

These measurements were conducted between 21st and 27th August 2019 at the front of 1 Romford Road.

The monitoring was conducted using an ARL EL-315 noise loggers set to A-weighted, fast response, continuously monitoring each 15-minute period. This equipment is capable of monitoring and storing noise various level descriptors for later detailed analysis. From the background noise levels (L_{A90}) the Rating Background Levels (RBL's) were determined using methodology as recommended by the *INP/NPFI*. The EPA considers the RBLs to represent the background noise level. The equipment calibration was checked before and after the survey and no significant drift was noted.

Table 3-1 summarises the results, for daytime, evening and night-time periods as defined in the *NPFI*. The summary values are:

Table 3-1 Measured ambient noise levels at 1 Romford Road.

Time Period	Noise Level (dBA)	
	$L_{Aeq, (period)}$	RBL (Background)
Daytime (7am to 6pm)	66	49
Evening (6pm to 10pm)	63	43
Night Time (10pm to 7am)	59	35

Results of noise logging are presented in Appendix A.

In addition, attended noise monitoring during peak hour on site facing Warringah Road has been conducted where an L_{Aeq} of 64 dBA was recorded.

3.3 Site Noise Emission Noise Criteria

Table 3-2 presents the relevant intrusiveness noise criteria for this assessment based on logger background noise levels.

Table 3-2 Intrusiveness criteria – all sources

Time Period ¹	RBL	Intrusiveness Criterion $L_{Aeq, 15min}$
Daytime	54	59
Evening	49	54
Night-time	41	46

Note 1: Daytime 7.00am–6.00am; Evening 6.00pm–10.00pm; Night 10.00pm–7.00am

In the case of commercial and industrial receivers the following noise emission criteria, based on

the NPfI, is applicable:

- Commercial Receivers 65 dBA

3.4 Internal Noise Criteria

Non mandatory internal noise objectives have been based on AS2017:2015 *Acoustics - Recommended design sound levels and reverberation times for building interiors* recommends the following internal noise levels:

- Consulting Rooms 40-45 dBA
- Office Areas 35-45 dBA
- Operating Theatres 40-50 dBA

4 ASSESSMENT

4.1 Mechanical Noise Emissions

Preliminary selection of major plant has been provided by ACOR Consultants as follows:

Table 4-1 Noise level from mechanical plant

Item of Plant	Noise Level at 3 m - dBA
Roof	
VRF	71
EF	73
Chiller	62
Supply Fan	75
Level 1	
CPSF Supply	75

Based on distances to residences and the nearest commercial receivers preliminary calculations have resulted in the predicted noise levels at these receivers:

- Residences at 1 Romford Road 27 dBA
- Commercial Receivers 64 dBA

These levels indicated that compliance with established noise criteria will be achieved at all receivers.

Final details of mechanical plant will be determined at the detail design stage of the project of the project. At that stage of the project a review of plant can be conducted to ensure that the initial findings of this report are consistent.

Based on these findings it is unlikely that any noise control measures will need to be incorporated into the development. Therefore, no particular difficulty is foreseen in meeting the noise emission requirements from the development.

4.2 Traffic Noise from Warringah Road

Traffic noise from Warringah Road was measured at 64 dBA. Based on a standard reduction across a commercial / office building façade of 25 dBA, internal noise level in rooms on the southern façade of the new development can be expected to be in the order of 39 dBA.

This predicted level is acceptable when compared with the objectives in Section 3.4.

5 CONCLUSION

An acoustic assessment has been undertaken for the Development Application for the proposed commercial development at Lot 7, 49 Frenchs Forrest Road.

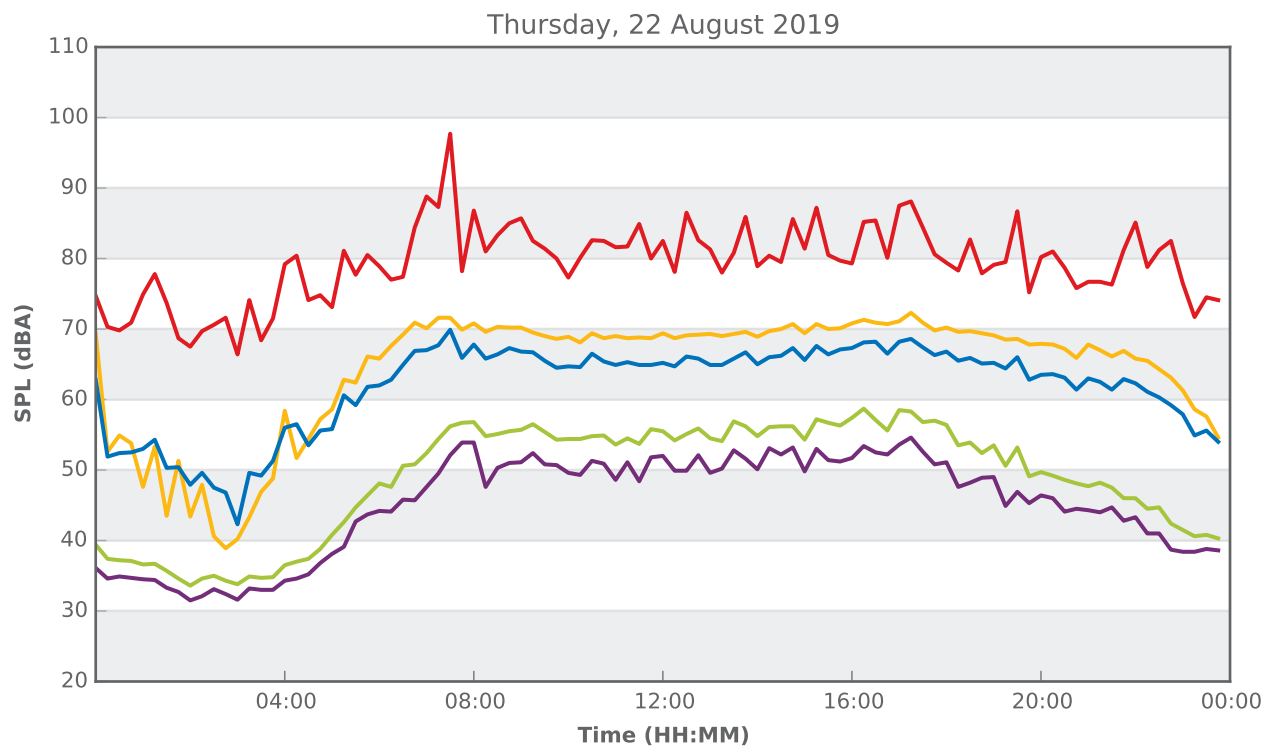
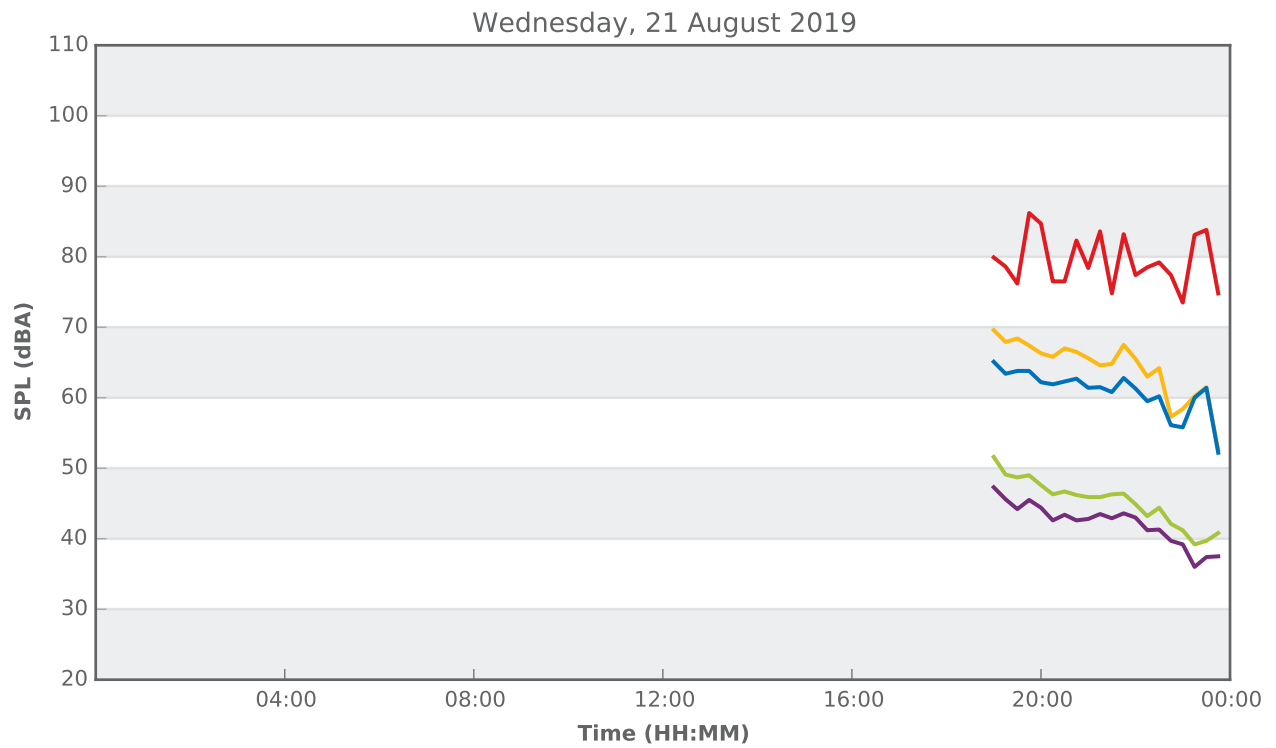
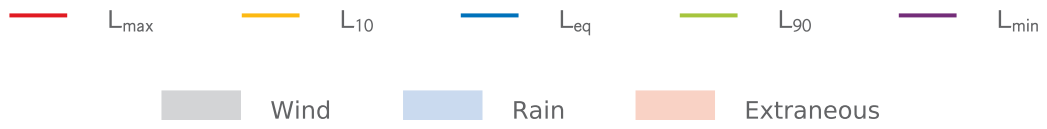
The following findings have been determined:

- Site-specific noise emission criteria have been established for surrounding receivers.
- Traffic associated the development will not adversely impact on the acoustic amenity of surrounding residences.
- Commercial Areas Warringah Road with standard glazing will achieve acceptable internal noise levels consistent with Australian Standards.
- Noise from mechanical services it is unlikely to require any noise control measures. Therefore, no particular difficulty is foreseen in meeting the noise emission requirements from the development.

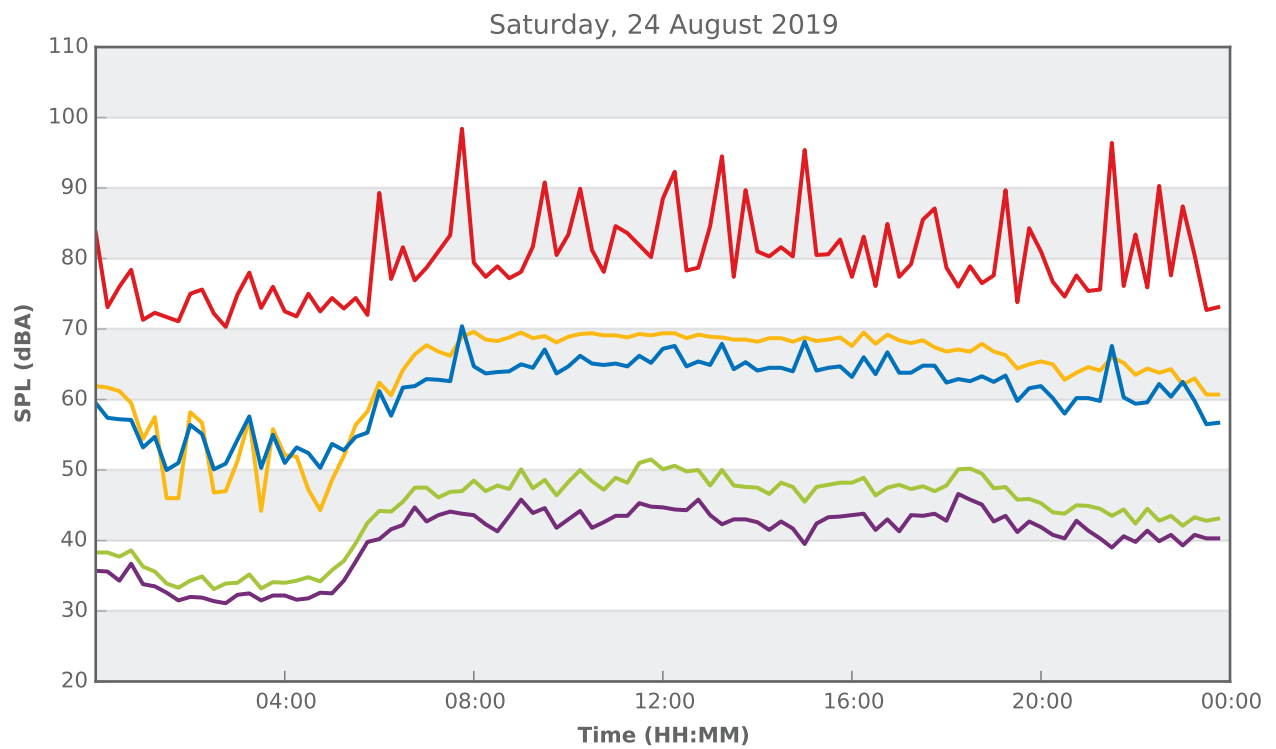
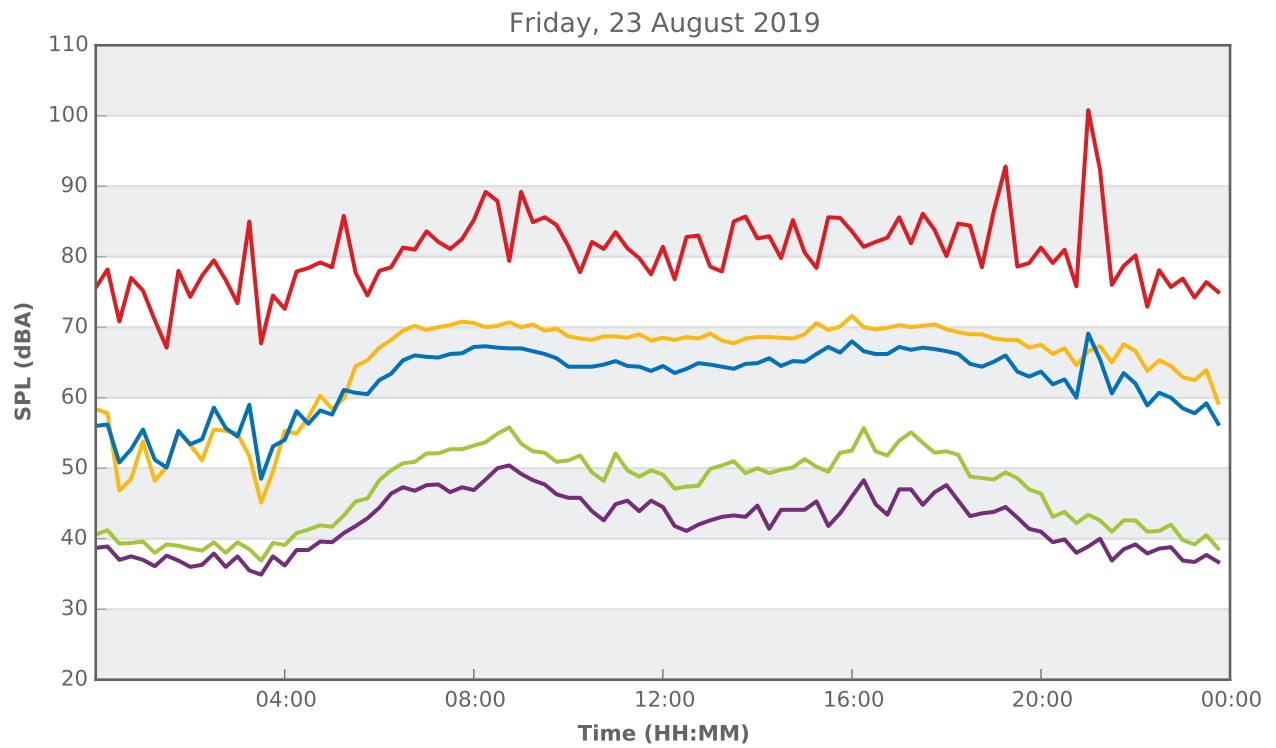
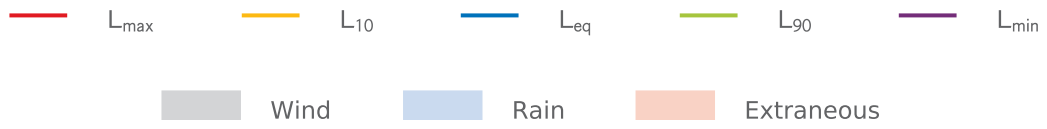
APPENDIX A

NOISE MEASUREMENT RESULTS

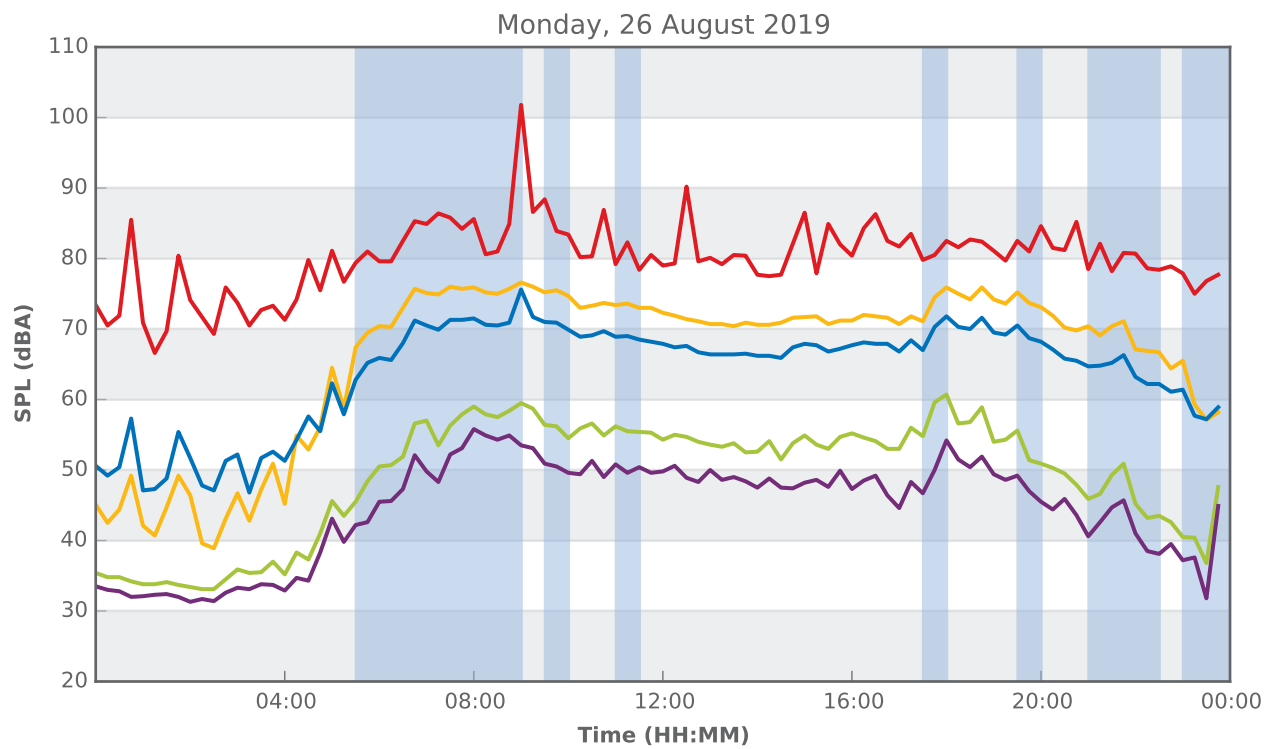
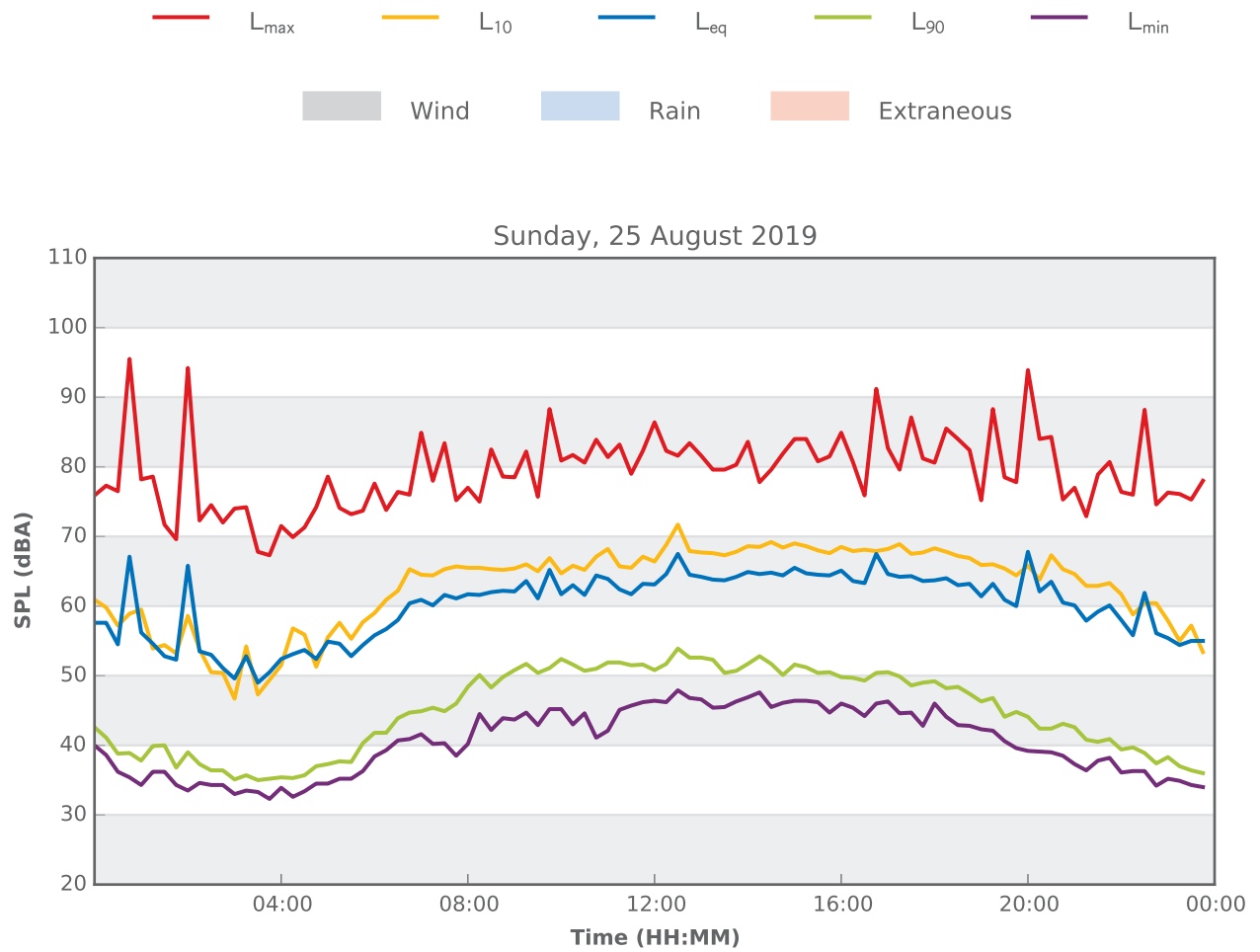
1 Romford Road Frenchs Forest



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