Report VA4643.230713.NIA

Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Noise Impact Assessment

13 July 2023

Luxury Hospitality Ltd
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Contents

Attachments

1. Introduction

A new external dining area is proposed at Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner.

Venta Acoustics has been commissioned by Luxury Hospitality Ltd to undertake an assessment of the potential noise impact of these proposals in support of an application for planning permission.

An environmental noise survey has been undertaken to determine the background noise levels at the most affected noise sensitive receptors, as well as noise breakout and on site noise propagation investigations. These levels are used to undertake an assessment of the likely impact with reference to the planning requirements of the London Borough of Hillingdon.

2. Site Description

As illustrated on attached site plan VA4643/SP1, the site is located in a residential area, with houses to the north on Field End Road and the Sigers, and also to the southwest. The property with the potential to be most affected by the new dining area is expected to be 52 Field End Road.

3. Design Criterion and Assessment Methodology

3.1 London Borough of Hillingdon Requirements

A previous application for the site (ref. 47216/APP/2023/248) was refused, with reason 2 of the refusal relating to noise. It stated:

> 2 *In the absence of any noise assessment and mitigation, the proposed use of the external areas for outdoor dining and the collective capacity of the outdoor spaces has the real potential for excessive noise disturbance detrimental to the amenity of surrounding residential properties. This is contrary to Paragraphs 174 and 185 of the National Planning Policy Framework 2021, Policy D14 of the London Plan, Policies BE1 and DME 5 of the Hillingdon Local Plan (Part 1) 2012 and Policies DME 5, and DMHD 11 of the Hillingdon Local Plan (Part 2) 2020.*

3.2 BS8233:2014

BS8233 *Guidance on sound insulation and noise reduction for buildings* provides guidance as to suitable internal noise levels for different areas within residential buildings.

The relevant section of the standard is shown below in Table 3.1.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB $L_{Aeq,\ 16\ hour}$	-
Dining	Dining Room	40 dB $L_{Aeq,\ 16\ hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,\ 16\ hour}$	30 dB $L_{Aeq,\ 8\ hour}$

Table 3.1 - Excerpt from BS8233: 2014 **[dB ref. 20µPa]**

For external areas the standard states the following:

> *For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments.*

4. Noise Survey

4.1 Survey Procedure

In order to establish the existing background noise levels at the site, a noise survey was carried out between Thursday 22nd and Monday 26th June 2023 at the locations shown in site plan VA4643/SP1. These locations were chosen to be representative of the noise levels at the most affected noise sensitive receivers.

Continuous 5-minute samples of the L_{Aeq}, L_{Amax}, L_{A10} and L_{A90} sound pressure levels were undertaken at each of the measurement locations.

The weather during the survey period was generally dry with light winds. The background noise data is not considered to have been compromised by these conditions.

Measurements were made generally in accordance with ISO 1996 2:2017 *Acoustics - Description, measurement and assessment of environmental noise – Part 2: Determination of sound pressure levels*.

5. Results

The measured sound levels are shown as time-history plots on the attached charts VA4643/TH1-4 for position 1 and VA4643/TH5-8 for position 2.

The background noise level is determined by road traffic in the area, as well as aircraft flyovers.

The noise levels measured were:

Monitoring Period	L_{Aeq}, T		Typical[1] $L_{A90,5min}$	
	Position 1	Position 2	Position 1	Position 2
07:00 – 23:00	58 dB	67 dB	44 dB	57 dB
23:00 – 07:00	53 dB	60 dB	30 dB	33 dB

Table 5.1 – Average ambient and typical background noise levels

[1] The typical L_{A90} value is taken as the 10th percentile of all L_{A90} values measured during the relevant period.

6. Predicted Noise Impact

6.1 Proposed Usage

The external dining area will be located to the west of the hotel building. The area is to be enclosed with a solid, 2m high fence, and have a pergola roof, which will be open slatted.

To the north of the building, the existing external seating area will be moved slightly to the northeast of the building and increased in size.

The area to the west of the building is intended as an external dining area and would be utilised between 12:00 and 22:00 hours. The other external seating area will also operate during the same time window.

These areas are designed for the use of guests and customers for dining, rather then being a beer garden, and would not have external televisions or similar. There may be an intention to have quiet ambient music, which will be discussed in the report.

6.2 West Dining Area

Appendix B shows calculations of noise levels from 50 diners speaking in the restaurant, along with quiet ambient music (L_{Aeq} 60-65dB) to the 1st floor rear window and rear garden of 52 Field End Road.

The calculations show that noise from the dining area would be approximately 38dB(A) outside the windows and 35dB(A) in the rear garden. This is lower than the existing background and ambient noise levels measured in the area during the proposed hours of use. Assuming a loss of 15dB for partially open window, as per BS87233, it is expected that with windows open, voices would generally be inaudible inside 52 Field End Road, with levels predicted at 23dB(A), although they may be faintly audible during quieter lulls in the broader background / residual noise climate of the area.

A second assessment for loud, raised voices has been undertaken, which predicts the resultant noise levels to be 39dB(A) outside the first floor windows, and 36dB(A) in the rear garden, which again, are generally lower than the existing noise climate.

As both the above levels are considerably below the recommended internal and external noise limits, and the existing background noise levels in the area, it is considered that the impact on the residents would be low.

6.3 North External Area

Calculations have been undertaken to the front of 34 Field End Road at first floor level. The rear of the houses is well screened from the seating area by the existing buildings, and so has not been considered.

The calculations, summarised in Appendix B, show that with 50 customers, noise levels outside the window would be 40dB(A), and 42dB(A) from a loud raised voice. These levels would equate to internal noise levels of 25dB(A) and 27dB(A), respectively, which again are considerably below the recommended limits in BS8233.

Notwithstanding the above indications of low impact, good management of premises is usually worthwhile to help to control noise and benefit neighbour relations, and hence it is recommended that the Hotel adopts the following noise management plant for the future.

7. Noise Management Plan

The following noise management plan includes many measures that we would recommend the management of the restaurant/hotel adopt. This plan addresses noise from guests. These measures are intended to minimise the noise impact on the neighbours.

7.1 Potential Noise Sources

The management understands that the identification and recognition of potential causes of disturbance assists greatly in planning to avoid disturbances to the surroundings.

The following noise sources have been identified in relation to the proposed operation of the premises:

- Noise from customers in the external seating areas.

7.2 Management Controls

The responsibility for the management controls will be assumed by the manager. Other members of staff may assume the role in the future following suitable training.

7.2.1 External Noise Management

To minimise potential impact, only quiet ambient music will be played in the external areas. To clarify, this should not exceed L_{Aeq} 60-65dB(A) so that customers will not need to raise their voices to talk over it.

A culture of neighbourly consideration will be encouraged amongst patrons through the use of signs prominently displayed by the door and polite reminders from staff should patrons become too loud.

7.3 Neighbour Relations

The management will endeavour to maintain a friendly, open and informative relationship with the nearby residents to allow concerns to be raised and addressed without hostility.

7.3.1 Complaints Procedure

A phone number and email address will be provided to nearby residents to allow efficient notification of the premises if noise levels are causing a disturbance. Clear instructions would be given to those likely to answer on these procedures for handling complaints.

A complaint action procedure will be produced and made available to staff who will be instructed to follow it on receiving a complaint. This procedure would include checking and adjusting the music volume and supervising patrons outside the premises.

A timed and dated log will be kept in the office of all complaints, including actions taken and responses given. Other information recorded in the complaints log will include the approximate number of patrons and staff present at the time of the complaint, and any specific activities or conditions which were noteworthy at the time. A sample complaint log sheet is attached at Appendix C. Any other notes or email communications should be copied and a record kept in the complaint log folder.

All complaints will be addressed promptly, with a response/explanation as well as any future actions or improvements that can be implemented.

8. Conclusion

A baseline noise survey has been undertaken by Venta Acoustics to establish the background noise climate in the locality of Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner.

The calculations of noise from the external seating areas has shown that there would be a low impact on the nearby noise sensitive receivers.

A noise management plan has been proposed to further minimise the impact of operation on the surrounding residents and a procedure for efficiently dealing with complaints has been suggested.

It is considered that, with the adoption of the recommendations of this report and good management of the premises, noise from the external areas would not be expected to negatively impact nearby residents.

Jamie Duncan MIOA


34 Field End Road
Noise monitoring location 2
Noise monitoring location 1
Approximate location of external seating area
Approximate location of external dining area
52 Field End Road
Image Landsat / Copernicus
Google Earth

Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 1

Position 1

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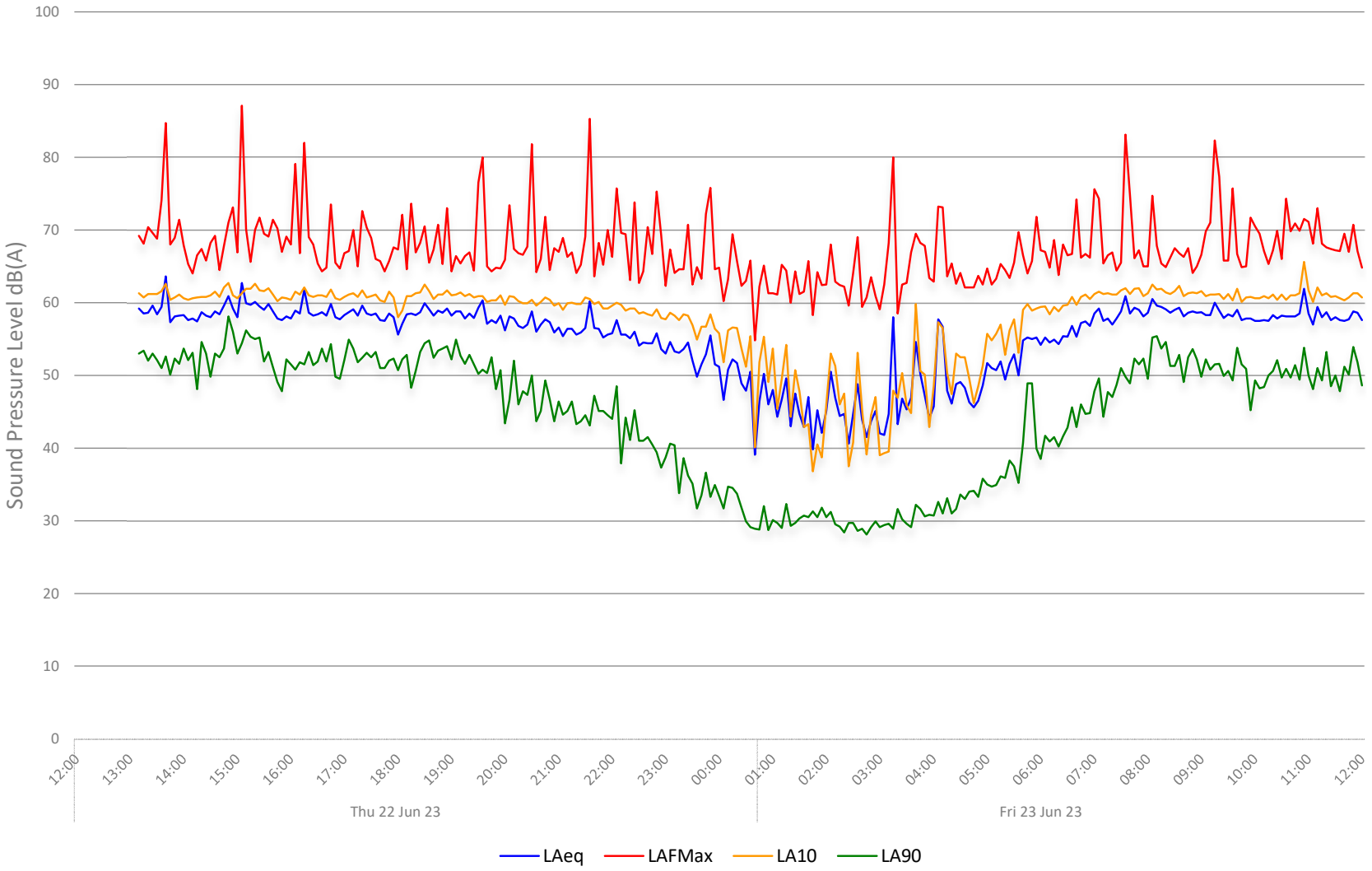
Figure VA4643/TH1



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 2

Position 1

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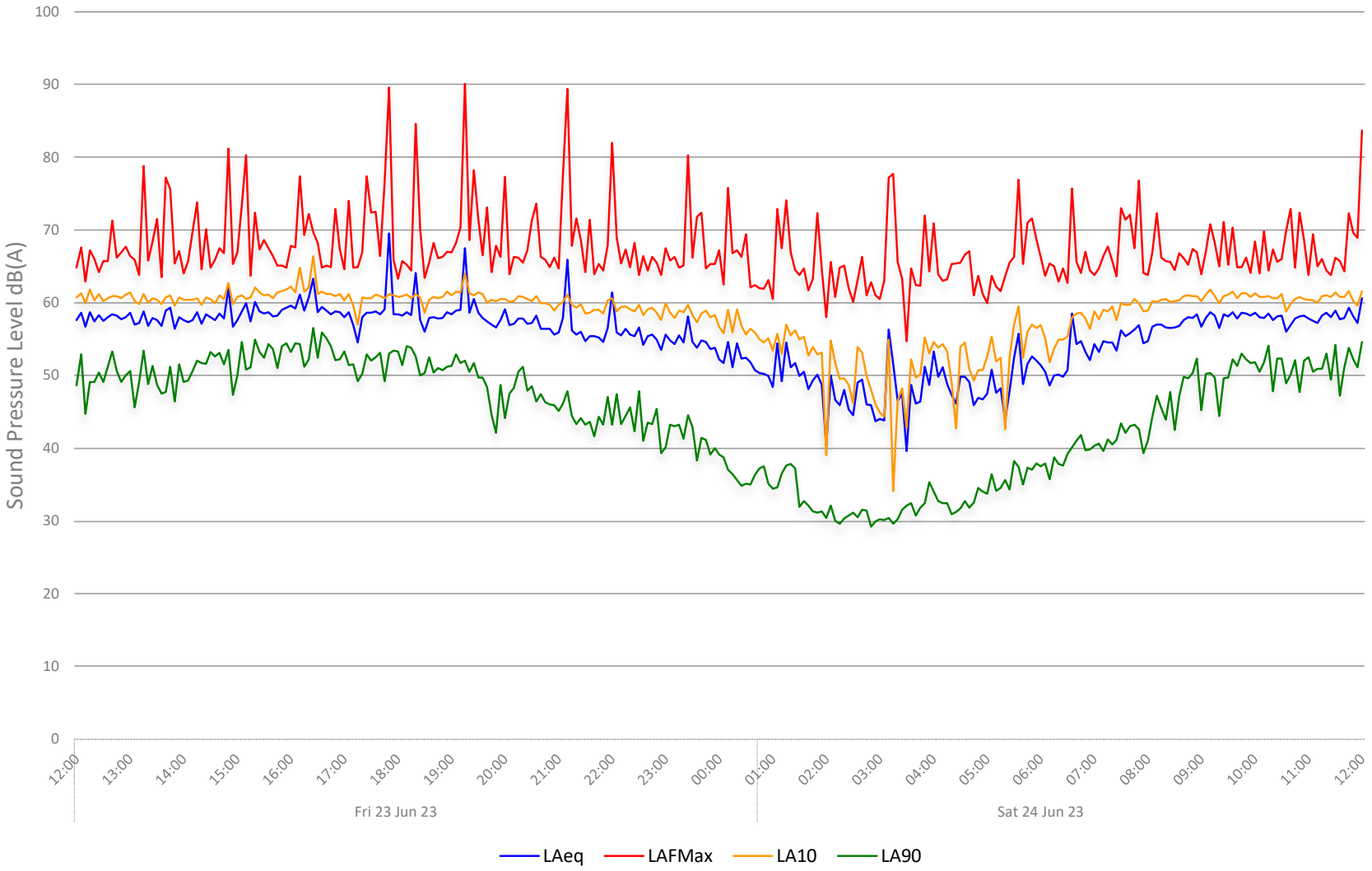
Figure VA4643/TH2



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 3

Position 1

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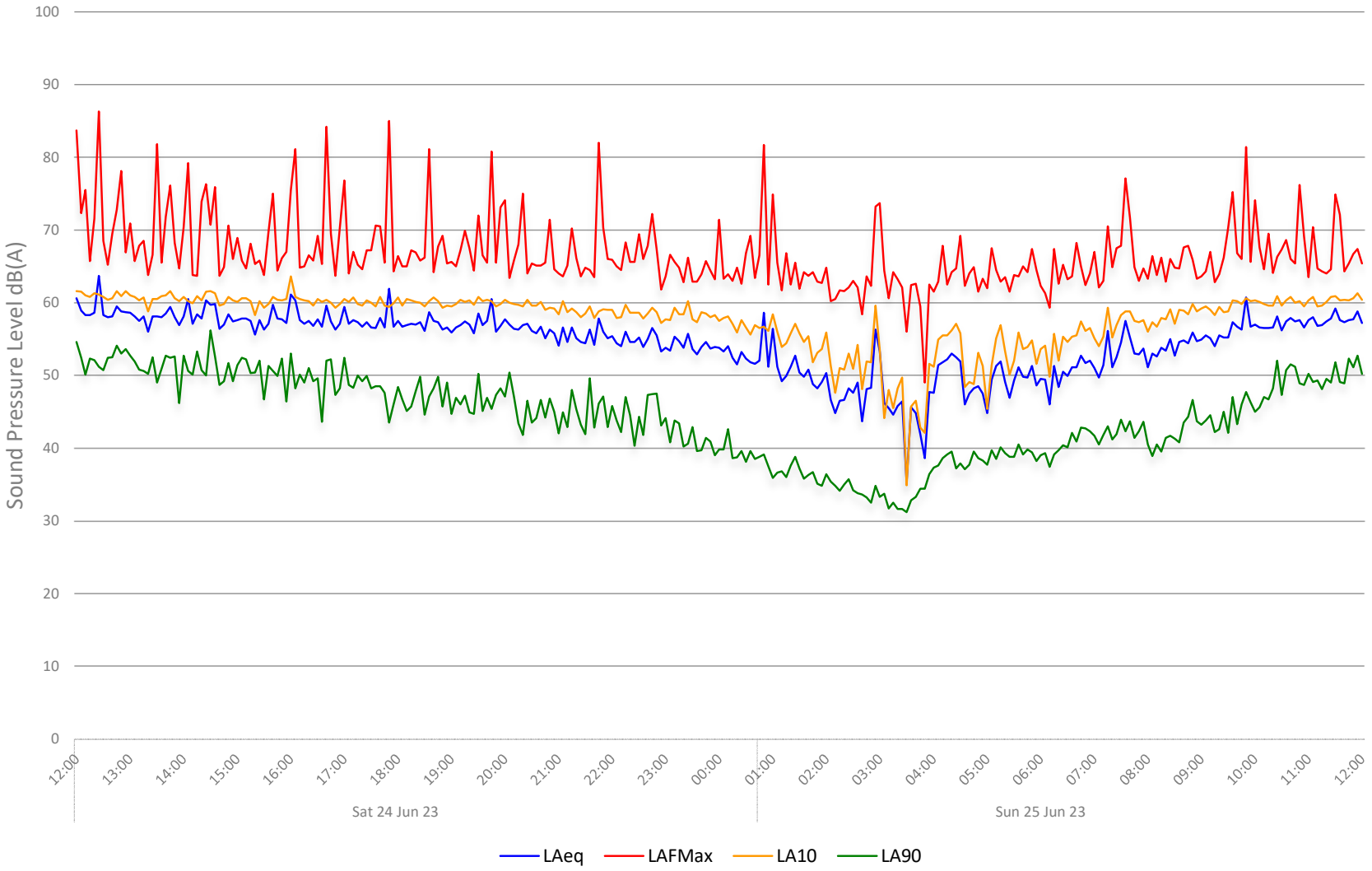
Figure VA4643/TH3



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 4

Position 1

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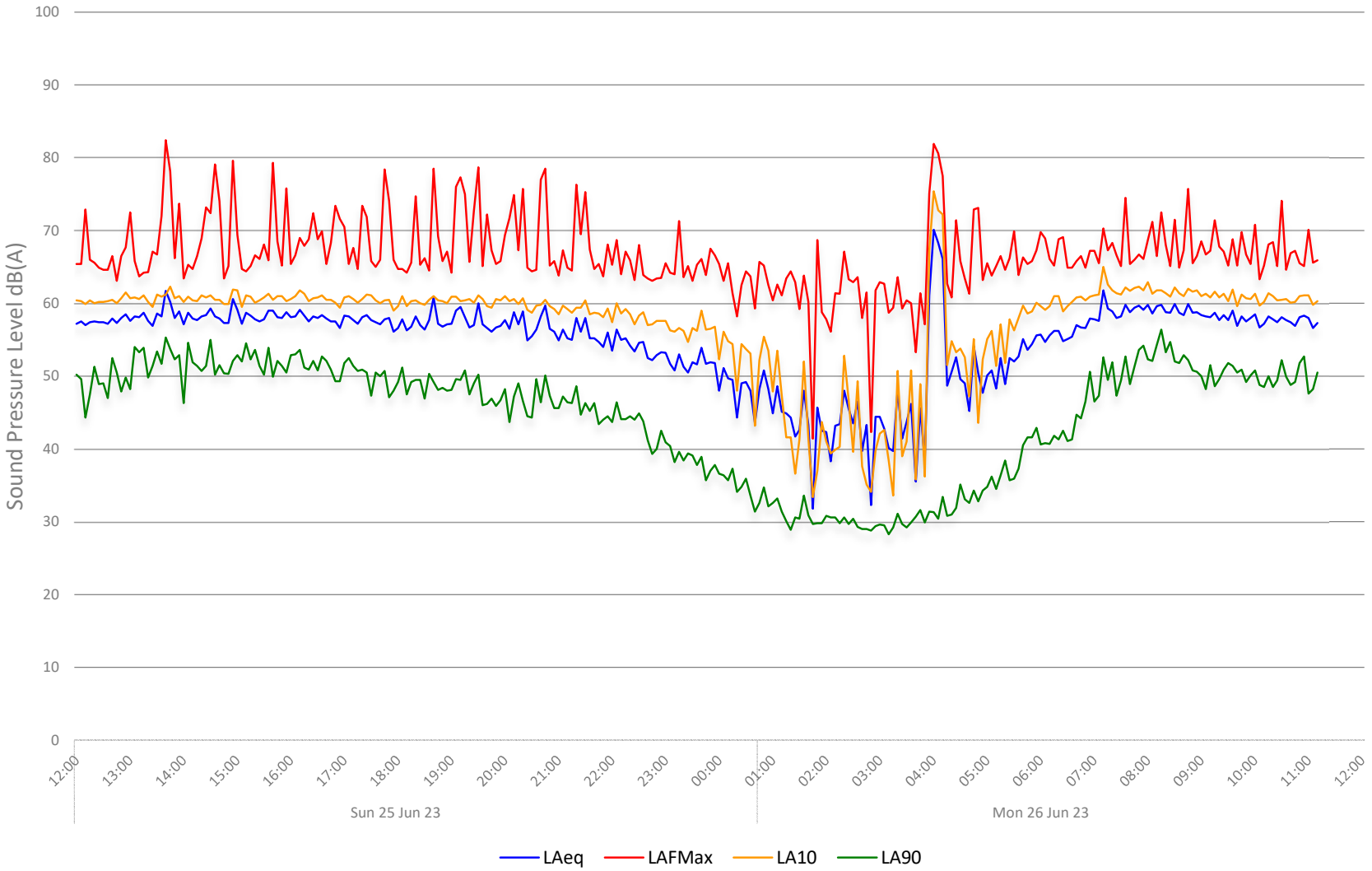
Figure VA4643/TH4



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 5

Position 2

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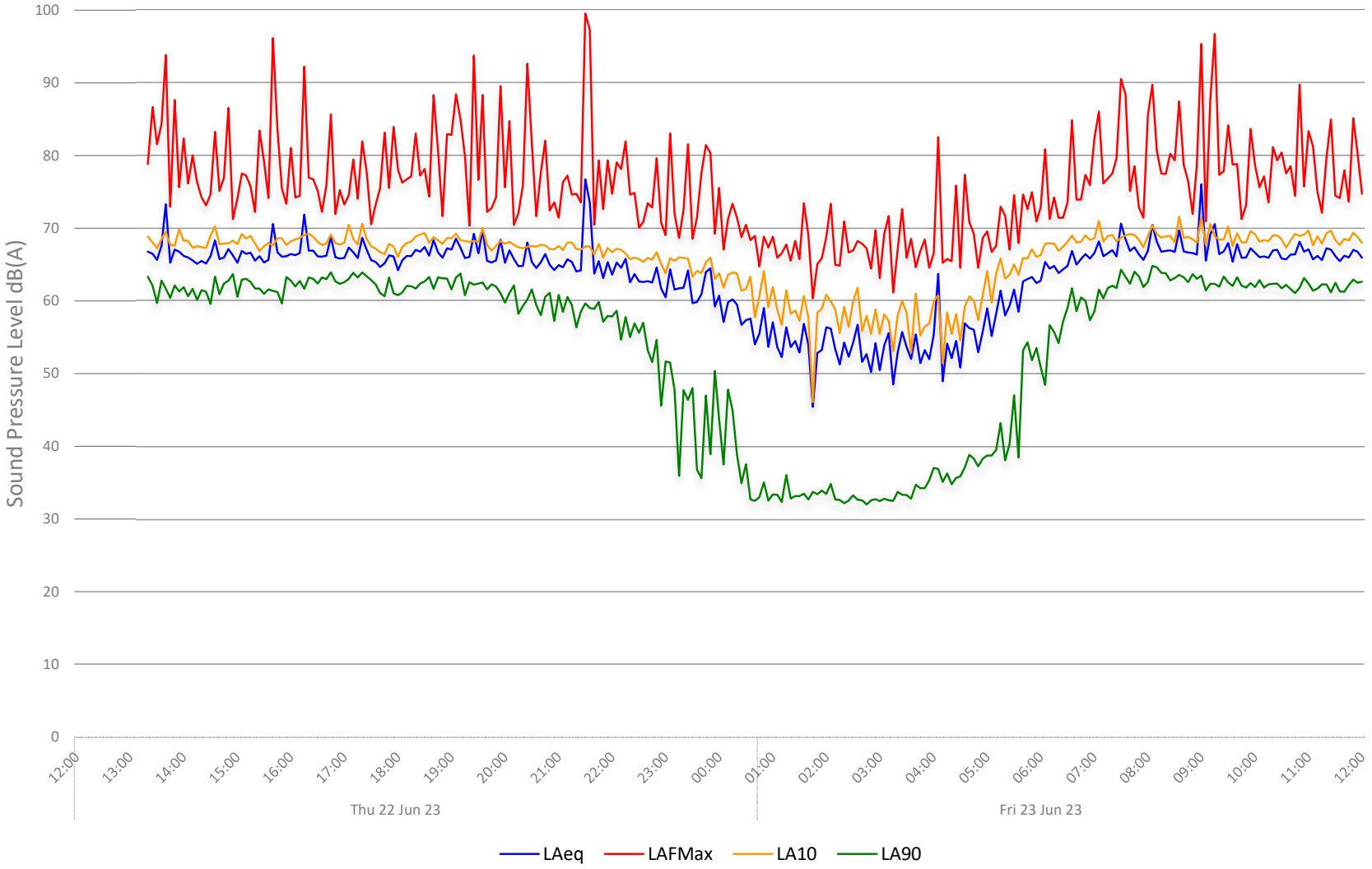
Figure VA4643/TH5



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 6

Position 2

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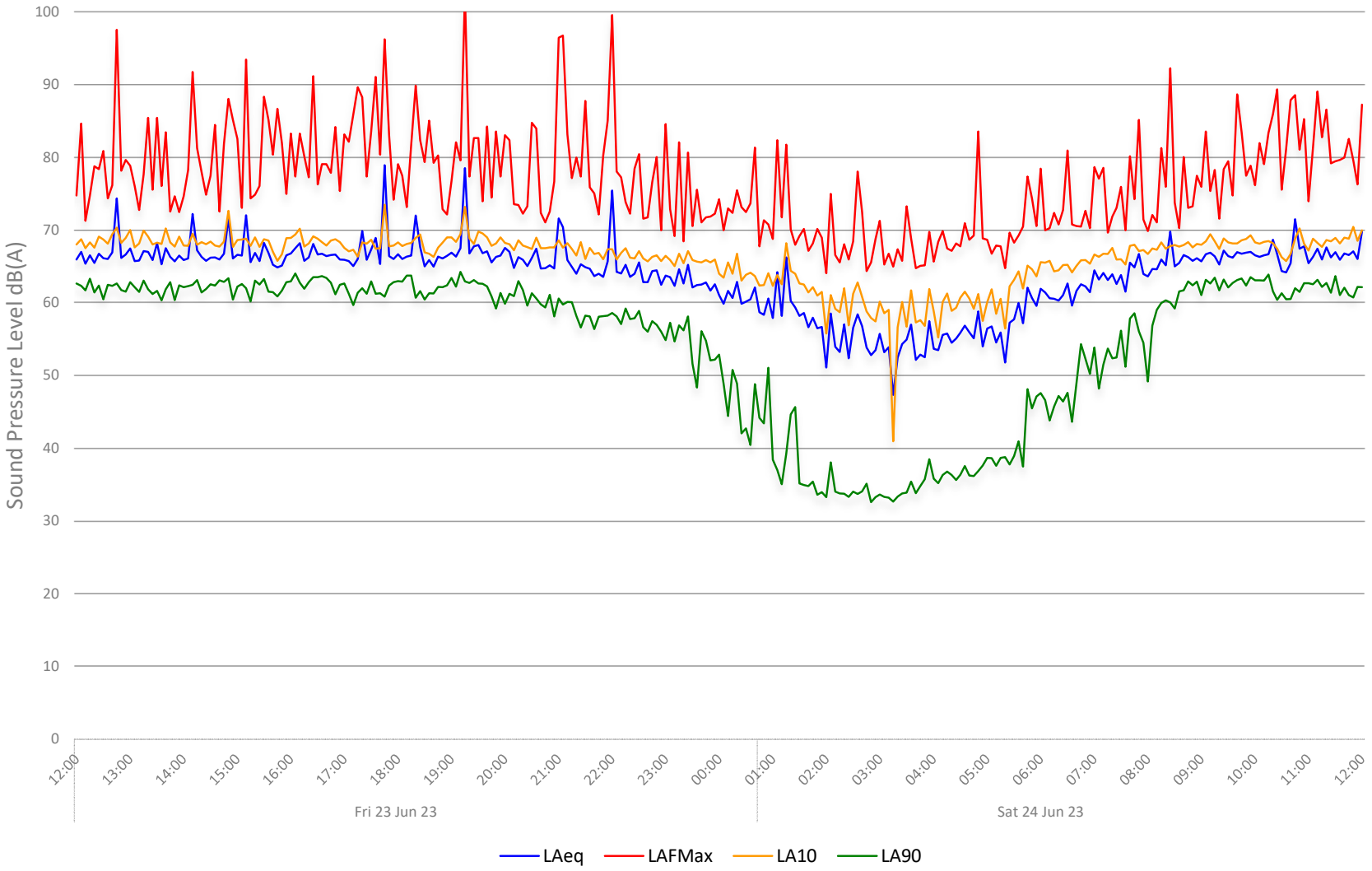
Figure VA4643/TH6



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 7

Position 2

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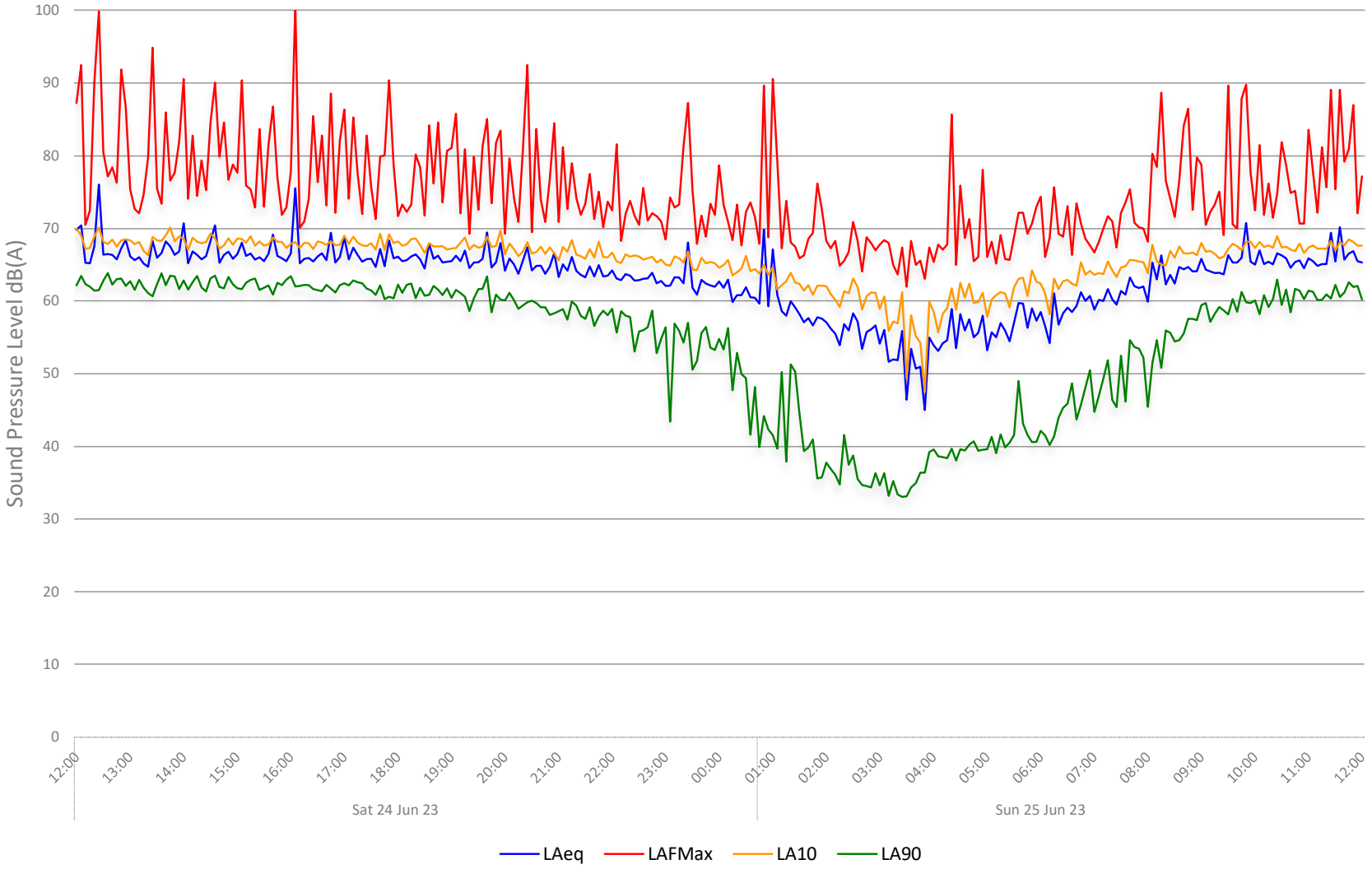
Figure VA4643/TH7



Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Environmental Noise Time History: 8

Position 2

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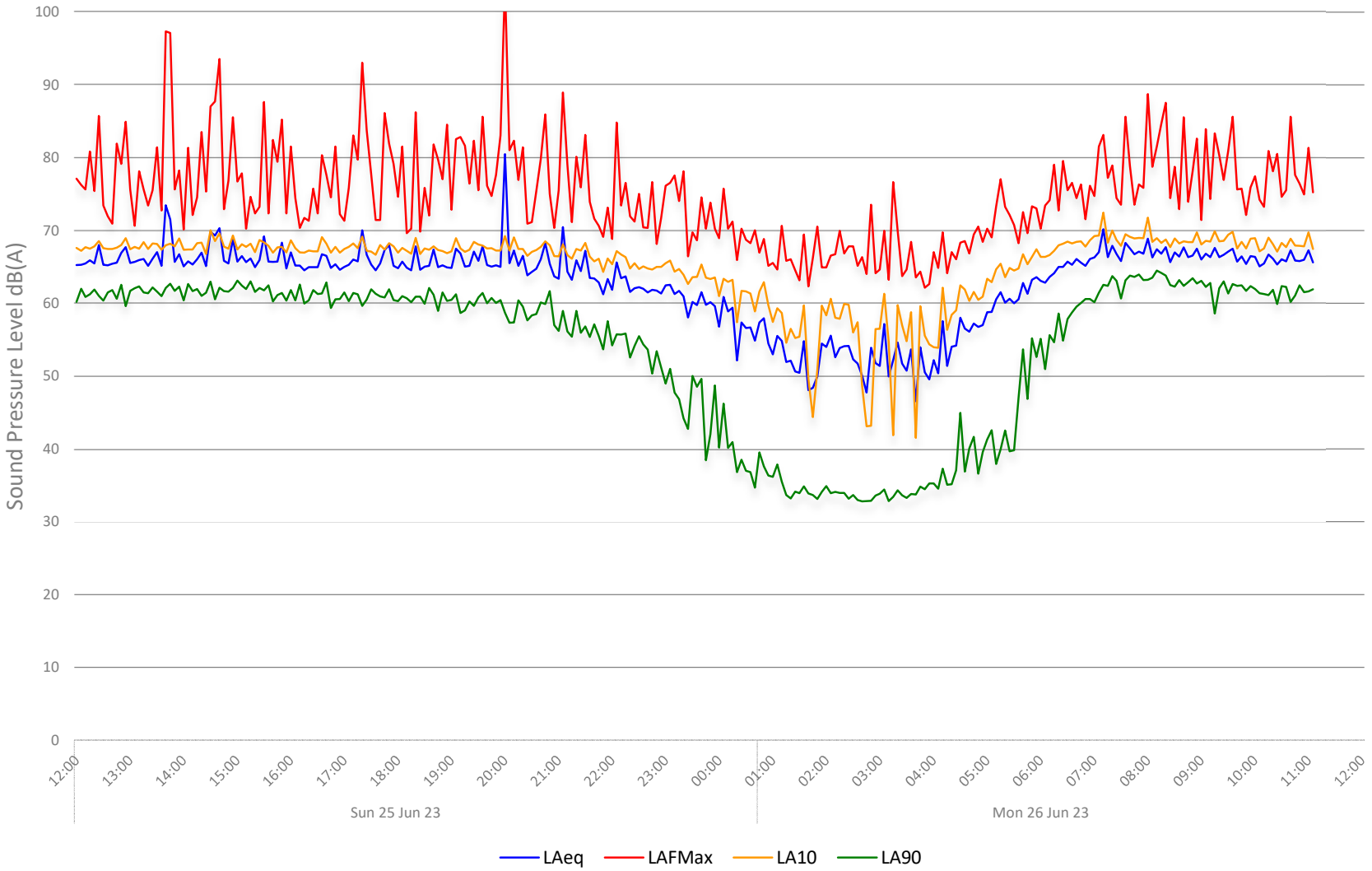
Figure VA4643/TH8



APPENDIX A

1.1 Acoustic Terminology

The human impact of sounds is dependent upon many complex interrelated factors such as 'loudness', its frequency (or pitch) and variation in level. In order to have some objective measure of the annoyance, scales have been derived to allow for these subjective factors.

Sound	Vibrations propagating through a medium (air, water, etc.) that are detectable by the auditory system.
Noise	Sound that is unwanted by or disturbing to the perceiver.
Frequency	The rate per second of vibration constituting a wave, measured in Hertz (Hz), where 1Hz = 1 vibration cycle per second. The human hearing can generally detect sound having frequencies in the range 20Hz to 20kHz. Frequency corresponds to the perception of 'pitch', with low frequencies producing low 'notes' and higher frequencies producing high 'notes'.
dB(A):	Human hearing is more susceptible to mid-frequency sounds than those at high and low frequencies. To take account of this in measurements and predictions, the 'A' weighting scale is used so that the level of sound corresponds roughly to the level as it is typically discerned by humans. The measured or calculated 'A' weighted sound level is designated as dB(A) or L_A.
L_{eq} :	A notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 8 hour, 1 hour, etc). The concept of L_{eq} (equivalent continuous sound level) has primarily been used in assessing noise from industry, although its use is becoming more widespread in defining many other types of sounds, such as from amplified music and environmental sources such as aircraft and construction. Because L_{eq} is effectively a summation of a number of events, it does not in itself limit the magnitude of any individual event, and this is frequently used in conjunction with an absolute sound limit.
L_{10} & L_{90} :	Statistical L_n indices are used to describe the level and the degree of fluctuation of non-steady sound. The term refers to the level exceeded for n% of the time. Hence, L_{10} is the level exceeded for 10% of the time and as such can be regarded as a typical maximum level. Similarly, L_{90} is the typical minimum level and is often used to describe background noise. It is common practice to use the L_{10} index to describe noise from traffic as, being a high average, it takes into account the increased annoyance that results from the non-steady nature of traffic flow.
L_{max} :	The maximum sound pressure level recorded over a given period. L_{max} is sometimes used in assessing environmental noise, where occasional loud events occur which might not be adequately represented by a time-averaged L_{eq} value.

1.2 Octave Band Frequencies

In order to determine the way in which the energy of sound is distributed across the frequency range, the International Standards Organisation has agreed on "preferred" bands of frequency for sound measurement and analysis. The widest and most commonly used band for frequency measurement and analysis is the Octave Band. In these bands, the upper frequency limit is twice the lower frequency limit, with the band being described by its "centre frequency" which is the average (geometric mean) of the upper and lower limits, e.g. 250 Hz octave band extends from 176 Hz to 353 Hz. The most commonly used octave bands are:

Octave Band Centre Frequency Hz	63	125	250	500	1000	2000	4000	8000

APPENDIX A

1.3 Human Perception of Broadband Noise

Because of the logarithmic nature of the decibel scale, it should be borne in mind that sound levels in dB(A) do not have a simple linear relationship. For example, 100dB(A) sound level is not twice as loud as 50dB(A). It has been found experimentally that changes in the average level of fluctuating sound, such as from traffic, need to be of the order of 3dB before becoming definitely perceptible to the human ear. Data from other experiments have indicated that a change in sound level of 10dB is perceived by the average listener as a doubling or halving of loudness. Using this information, a guide to the subjective interpretation of changes in environmental sound level can be given.

Change in Sound Level dB	Subjective Impression	Human Response
0 to 2	Imperceptible change in loudness	Marginal
3 to 5	Perceptible change in loudness	Noticeable
6 to 10	Up to a doubling or halving of loudness	Significant
11 to 15	More than a doubling or halving of loudness	Substantial
16 to 20	Up to a quadrupling or quartering of loudness	Substantial
21 or more	More than a quadrupling or quartering of loudness	Very Substantial

APPENDIX B

VA4643 - Tudor Lodge Hotel, 50 Field End Road, Eastcote, Pinner

Noise Impact Assessment

External Dining Area - West		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dB(A)
50 customers, quiet ambient music	Lp @ 1m	61	63	68	70	69	65	58	49	**72**
Distance Loss	To 30m	-30	-30	-30	-30	-30	-30	-30	-30	
Line of sight screening		-5	-5	-5	-5	-5	-5	-5	-5	
Level at receiver (1st floor)		**26**	**28**	**34**	**35**	**34**	**30**	**24**	**15**	**38**
Loss for a partially open window		-15	-15	-15	-15	-15	-15	-15	-15	
Internal noise level		**11**	**13**	**19**	**20**	**19**	**15**	**9**	**0**	**23**

External Dining Area - West		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dB(A)
50 customers, quiet ambient music	Lp @ 1m	61	63	68	70	69	65	58	49	**72**
Distance Loss	To 25m	-28	-28	-28	-28	-28	-28	-28	-28	
Screening Loss		-5	-6	-7	-8	-10	-12	-15	-18	
Level at receiver (rear garden)		**27**	**29**	**33**	**33**	**31**	**24**	**15**	**3**	**35**

External Dining Area - West		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dB(A)
Loud Raised Voice (ANSI 3.5: 1997)	Lp @ 1m	52	58	64	70	71	66	60	49	**74**
Distance Loss	To 30m	-30	-30	-30	-30	-30	-30	-30	-30	
Line of sight screening		-5	-5	-5	-5	-5	-5	-5	-5	
Level at receiver (1st floor)		**17**	**23**	**29**	**36**	**36**	**31**	**25**	**14**	**39**
Loss for a partially open window		-15	-15	-15	-15	-15	-15	-15	-15	
Internal noise level		**2**	**8**	**14**	**21**	**21**	**16**	**10**	**-1**	**24**

External Dining Area - West		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dB(A)
50 customers, quiet ambient music	Lp @ 1m	52	58	64	70	71	66	60	49	**74**
Distance Loss	To 25m	-28	-28	-28	-28	-28	-28	-28	-28	
Screening Loss		-5	-6	-7	-8	-10	-12	-15	-18	
Level at receiver (rear garden)		**19**	**24**	**29**	**34**	**33**	**26**	**17**	**3**	**36**

External Area - North		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dB(A)
50 customers, quiet ambient music	Lp @ 1m	61	63	68	70	69	65	58	49	**72**
Distance Loss	To 40m	-32	-32	-32	-32	-32	-32	-32	-32	
Line of sight screening		-5	-5	-5	-5	-5	-5	-5	-5	
Level at receiver		**29**	**31**	**36**	**37**	**37**	**32**	**26**	**17**	**40**
Loss for a partially open window		-15	-15	-15	-15	-15	-15	-15	-15	
Internal noise level		**14**	**16**	**21**	**22**	**22**	**17**	**11**	**2**	**25**

Appendix C

Sample Noise Complaint Log Sheet

Date	Time	Staff Name	No. of Staff & Customers	Complainant			Details			Response Details[1]
				Name	Address	Phone/email	Description[1]	Duration	Solution?	

[1] Attach noted and email correspondence as appropriate