



Noise Statement

The Three Frogs, London Rd, Wokingham

Greene King

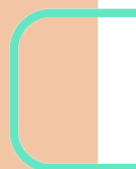
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Rev02



ScotchPartners

Building Services | Energy | Sustainability | Acoustics



Noise Statement

Introduction

A retrospective planning application has been submitted for the development of an outdoor seating area for The Three Frogs pub in London Road, Wokingham, RG40 1SW. Noise complaints have been made to the pub / local authority, and the application has received several objections from local residents. This technical note presents the findings of an external noise survey conducted on site to assess the noise impact on neighbouring residents from pub activity. This note is also an update from the first revision, issued on 7th August 2026, and addresses comments from the Environmental Health Officer at Wokingham Borough Council responsible for reviewing this application.

Criteria

There is currently no widely accepted method for assessing noise emission from patron activity. Various industry guidelines have been reviewed to assess their applicability, and a commentary is provided in this section.

BS 4142

British Standard 4142:2014+A1 2019 *Methods for rating and assessing industrial and commercial sound* is a widely used standard in assessing the impact of commercial noise on noise-sensitive neighbours. It presents a method for predicting the noise impact by comparing specific noise emission levels from a source to the existing background sound levels in the area in the absence of the source.

The standard is however only applicable for noise sources that are of industrial and/or commercial nature. The standard states:

“1.3 The determination of noise amounting to a nuisance is beyond the scope of this British Standard.

[...]

The standard is not intended to be applied to the rating and assessment of sound from:

a) ...

b) music and other entertainment;

...

f) people; [...].”

The methodology presented in BS 4142 is therefore considered not applicable to the assessment of patron noise.

BS 8233

British Standard 8233:2014 *Guidance on sound insulation and noise reduction for buildings* is another widely adopted and referred to standard in the industry, offering guidelines for various noise criteria. The following passage is considered relevant to this application:

“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. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable.”

It is therefore considered that ambient noise levels in neighbouring gardens should not exceed a guideline value of 55 dB $L_{Aeq,1hour}$ during daytime or nighttime.

BS 8233 also sets out guidance for *internal* noise levels for “rooms in residential use”. The relevant criteria are presented below:

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

Table 1 BS 8233 guideline criteria for internal ambient noise levels for “rooms in residential use”

Scotch Partners approach

Whilst ambient noise levels will be considered according to the guidelines in BS 8233 as described above, there is currently no accepted criteria available for maximum noise levels from short-term individual patron noise events (e.g. patrons shouting).

As there is no agreed upon industry guidelines for maximum noise levels from short term patron noise, a bespoke approach has been taken in this assessment.

Noise levels have been measured across three days and nights, with one of those days expected to have been exceptionally busy owing to the first England match of the FIFA World Cup 2026 scheduled for that evening. Maximum noise levels measured during this day are therefore considered to be the most representative of the highest levels of noise typically emitted from activities associated with the pub.

Typical maximum noise levels, owing to patrons, during the busiest period as defined above will then be compared to the prevailing maximum noise levels measured on the other days.

Site and operational description

The site is located on London Road, Wokingham, RG40 1SW. The surrounding area consists primarily of residential properties, with the nearest neighbours to the site being on Harmar Close. The primary sources of noise affecting the residences on Harmar Close are road traffic noise from London Road (A329), building services noise from external plant belonging to the pub, and activity noise from the pub itself.

The outdoor garden area is situated on the south-east area of the site, c. 7m away from the boundary of the nearest neighbour on Harmar Close.

Pub activity noise affecting the neighbours can include: patron noise from customers, TV noise, live music and emptying of glass bins. There is a TV and speakers in the outdoor garden, and live sports fixtures are regularly shown at the pub including the recent 2026 FIFA World Cup.

Our understanding of the pub activity during the survey period is that people were outside in the pub garden for the England game. Greene King would need to confirm this, and the general customer attendance of each day.

Windows are understood to have been closed – however this is not expected to be a factor in this assessment as noise levels were measured outdoors by the fence of the nearest neighbour.

External noise survey – measurement methodology

Continuous unattended noise level measurements were conducted at ground level in the car park of the site. The microphone was extended around 2.5m above local ground, and placed in what is considered representative of free-field conditions.

The microphone was placed less than a metre from the boundary fence to the Harmar Close residences. Measurements taken at this location are therefore considered representative of the background sound levels at the nearest neighbours.

Statistical and spectral data were recorded in 15-minute samples between 17:00 on Tuesday the 16th June and 14:00 on Friday the 19th June 2026. The “fast” (125ms) time constant was used.

A satellite image showing the site, measurement location, and residential properties surrounding the site are shown in the figure overleaf.



Figure 1 Satellite image showing site, measurement location and neighbouring properties

The following equipment was used to carry out the measurements:

Equipment	Manufacturer/model	Serial no.
Class 1 Sound level meter	Norsonic 139	1392774
Environmental microphone	Norsonic 1218	12182559
Portable sound calibrator	Norsonic 1251	34926

Table 2 Equipment used for noise survey

The calibration of the sound level meter and associated microphone were checked prior to and on completion of the survey in accordance with recommended practice. No significant drift in calibration occurred during the survey. The accuracy of the calibrator can be traced to National Physical Laboratory Standards.

Weather conditions throughout the survey were mostly dry with little wind. The measurement data are not considered to have been adversely affected by the weather in the context of this assessment.

External noise survey – results & commentary

A graph showing the noise level history during the survey period is presented below:

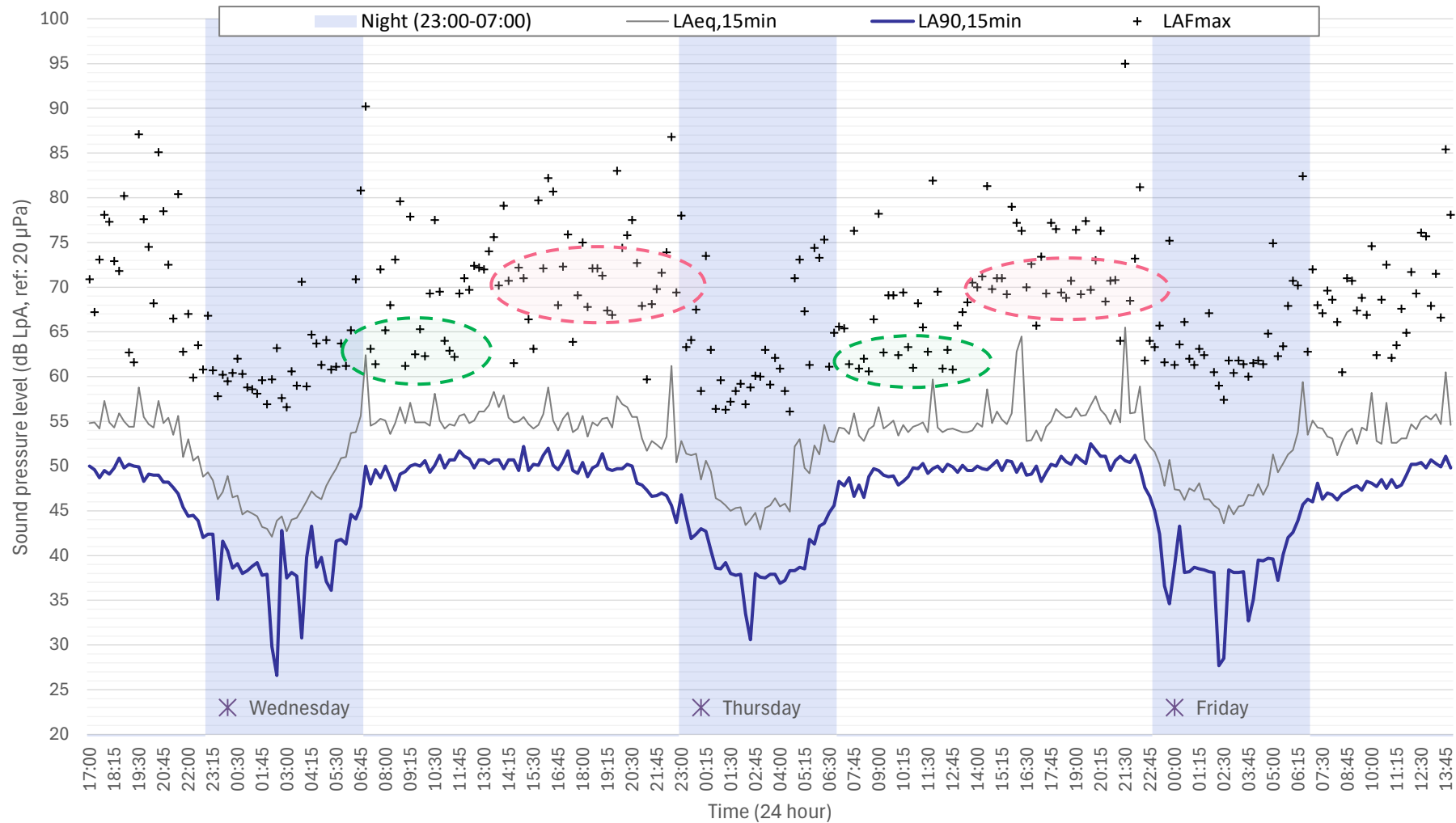


Figure 2 Noise level history during survey period

No data measured during the survey period has been omitted, and all measurement data is graphed above. The full set of measurement data, along with short-term audio recordings for L_{AFmax} measurements of over 70 dB, and an interactive browser-viewable graph showing the identified noise sources of the L_{AFmax} measurements, are available in the following link:

https://www.dropbox.com/scl/fo/s30j4y0ytilt0dkgub122/AOE2AtKtV_-DUDfkQdf29LU?rlkey=92g9lqc4a95o04ahxc3vrhhfi&st=7rnm9wlu&dl=0

These specific set of days for the noise survey were chosen to include the first England match of the FIFA World Cup 2026, with it expected to be exceptionally busy at the pub during this fixture (which was on Wednesday 17th June at 21:00). Measured data during this period is therefore considered to be a good representative of a particularly busy night.

The full, raw measurement data can be provided on request also, which will require the install of proprietary software to view, which we can also provide.

Ambient noise levels

During the daytime (07:00 – 23:00), ambient and background noise levels remain at an average of around 55 dB L_{Aeq} and 50 dB L_{A90} respectively, across all four days. The constant flat levels during the day and the sudden drop off at nighttime is commonly seen in noise climates dominated by building services noise. It is considered that the ambient and background sound levels here are dominated by noise from plant belonging to the pub (understood to be the kitchen extract). This is also supported by the fact that the spectra of the ambient and background sound levels are dominated by low frequency noise (particularly at 63 Hz).¹

Whilst there are a few notable spikes in ambient sound levels, dB L_{Aeq} , these are temporary spikes in level caused by more short-term (but loud and prolonged enough) events often from multiple sources simultaneously that are not from pub activity. These can be seen by looking at the L_{AFmax} measurement of the same measurement time as the L_{Aeq} spike.²

It should be noted that the survey microphone was extended slightly above the fence of the neighbour, so it is expected that neighbours sat in the garden would experience ambient noise levels of up to 5-10 dB less due to the screening offered by the fence. With daytime ambient noise levels measured above the fence being 55-60 dB L_{Aeq} , actual average daytime ambient noise levels experienced by neighbours sat in the garden is therefore expected to be below 55 dB L_{Aeq} (not including infrequent anomalous events), due to the 5-10 dB reduction offered by the fence. This would meet the guideline criteria of 55 dB $L_{Aeq,1hour}$, based on BS 8233, for daytime ambient noise levels in “*traditional external areas that are used for amenity space, such as gardens*”.

¹ See noise survey data spreadsheet (in dropbox link) with colour formatted sound level spectral data in octave bands.

² See noise survey data spreadsheet and the interactive HTML graph of the noise level history - L_{AFmax} data markers are labelled with the identified noise sources and the filename of the corresponding audio recording.

All of the above can be found in the dropbox link.

Maximum noise levels

Based on automatically triggered audio recordings during the survey, maximum noise levels owing to short-term noise events are considered to be from: vehicles in the car park (engines, doors slamming), loud vehicle passbys on London Rd (motorbikes and sports cars), aircraft (low-flying helicopters), emergency vehicle sirens, car alarms, animals (dogs, cats, birds), lawnmowers, dropping of glass into glass bin, and pub customers shouting or speaking in raised voices. Note that audio recordings were only triggered for measurements over 70 dB L_{AFmax} .

The range in maximum noise levels across all four days remain consistent, with most occurrences being between 60–80 dB L_{AFmax} during daytime and 55–70 dB L_{AFmax} during nighttime. Particularly, the lower bound of the maximum noise level measurements can be seen to increase from around 60–65 dB L_{AFmax} in the morning (cluster circled green in Figure 2) to around 70 dB L_{AFmax} in the afternoon-evening (cluster circled red in Figure 2). In fact, most measurements appear to be within these clusters. This naturally correlates with the pub expecting to become busier from morning to afternoon-evening.

Between each day, the noise levels do not appear to change much according to the measured data. As in, the noise level data do not show any material differences in pattern or range between each day of the survey, despite the expectation of the busier day, Wednesday, to show higher average and maximum noise levels.

It is considered based on the data that the England game on Wednesday did not exhibit materially higher noise levels compared to other evenings.

This therefore suggests that it is not necessarily an issue with the overall noise *levels* but the *intelligibility/perceptibility* of discrete individual events of outdoor pub patrons being noisy, as shown by the several neighbours' comments referring specifically to foul/inoffensive language often being heard. These discrete events can be considered to be lower in dB level, but are more noticeable due to their character.

It should also be noted that many of the maximum noise level audio files recorded are from patrons in the car park speaking in raised voices or shouting, which would occur with or without the outdoor pub garden.

With the disturbance to neighbours being driven more by the character and intelligibility of individual events, it would be more effective to mitigate noise impact via management and operational control on the pub's side instead of a noise *level*/reduction approach (such as with the use of proprietary acoustic fences). However, raised fences have been installed for further screening to the nearest neighbours. That, along with a noise management plan to be followed by the pub, together forms the noise mitigation measures that are being undertaken.

Regarding the EHO's comment on correlating measured data with resident experience: "The assessment also fails to correlate the measured data with resident experience. No resident diary information, complaint records, contemporaneous feedback or analysis of disturbance events has been provided." – this can be provided if given.

Noise control policy

Following a meeting between the pub operator Greene King and neighbouring residents, a Noise Control Policy was proposed for the premises. The measures proposed in this policy is considered to be sufficient to mitigate any further adverse noise impact on neighbouring properties owing to the pub's activities.

Agreed Operational Controls

Several actions have already been agreed with Property and Operations teams to reduce disturbance and improve neighbour confidence:

- External garden/outside space to close at 10:00pm every night.
- Strong management presence required in the external areas to manage noise and disruptive behaviour with multiple perimeter checks/walk-arounds (particularly in evenings)
- Maintain a perimeter walk-around logbook
- Monthly community drop-in meetings

Documentation and Evidence

The team agreed that:

- Perimeter walk checks must be recorded.
- Any incidents, complaints or actions taken must be documented.
- Records need to be available for review during visits or licence-related discussions.

Community and Licence Compliance

- The team discussed the importance of positioning all actions positively, focusing on community responsibility and good neighbour relationships.
- Staff should avoid blaming neighbours when explaining operational restrictions to customers.
- The agreed message is that actions are being taken to run a safe, welcoming and responsible pub.

Anti-Social Behaviour Concerns

- Glasses, bottles and litter must not reach neighbouring areas and remain within pub premises
- Activity in the alleyway adjacent to the pub to be monitored by staff
- Immediate action is to be taken where inappropriate behaviour is observed.

Improved Communication

- Neighbours now have direct contact details for key stakeholders.
- Concerns should be escalated promptly.
- No issues are to be hidden and communication with neighbours must be open and transparent.

Noise mitigation measures

The outdoor pub garden had a hit and miss fence dividing it from the car park (and hence the neighbours). The height of this fence has since then been extended (non-painted part in Figure 3 below shows fence extension, with blue section being the existing height).

In addition, it is recommended to put a solid backing to this fence bordering the pub garden. This will provide additional acoustic screening of up to 5-10 dB and is sufficient and effective without the need of an “acoustic” fence.



Figure 3 Extended fence around pub garden (view from outside pub garden patio)



Figure 4 Extended fence around pub garden - now having been fully painted blue as of 10th September 2026



Figure 5 View from inside the pub garden with extended fence

New fencing has also been installed adjacent to the neighbour's garden (at 236 London Rd) with the previous fence replaced by a now higher fence.



Figure 6 Photo of previous fence adjacent to neighbour, and survey measurement location

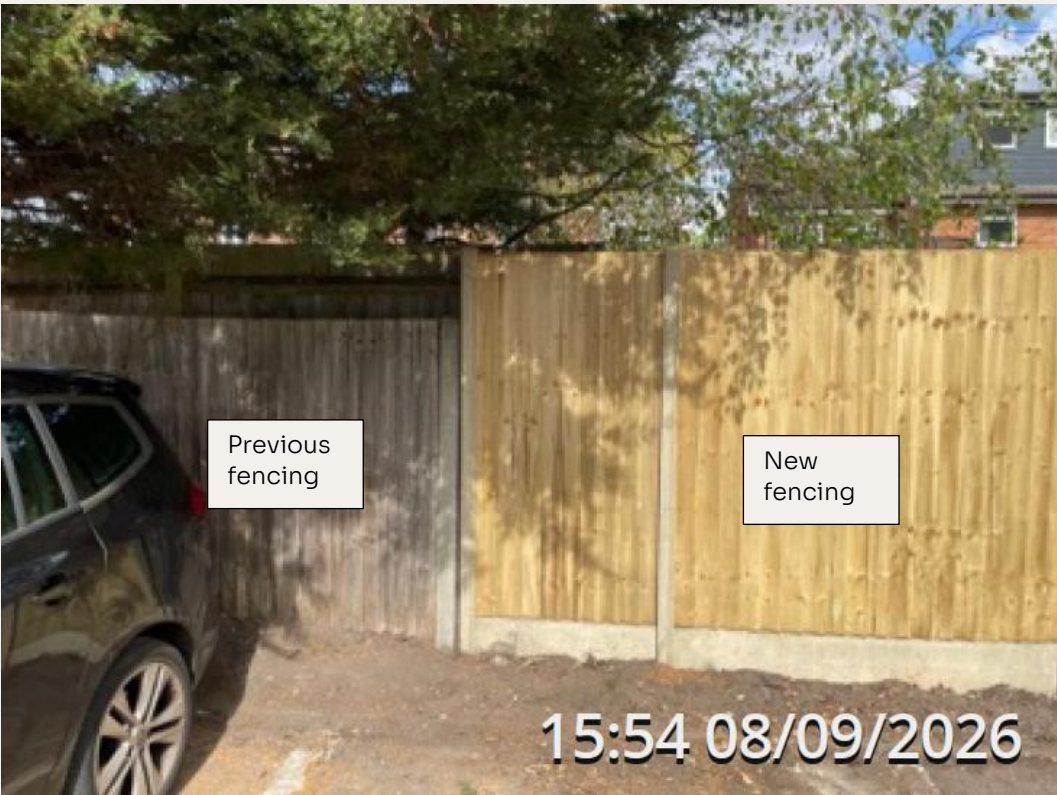


Figure 7 Photo of previous fencing next to new (higher) fencing



Figure 8 Photos of new extended height fencing bordering the neighbour

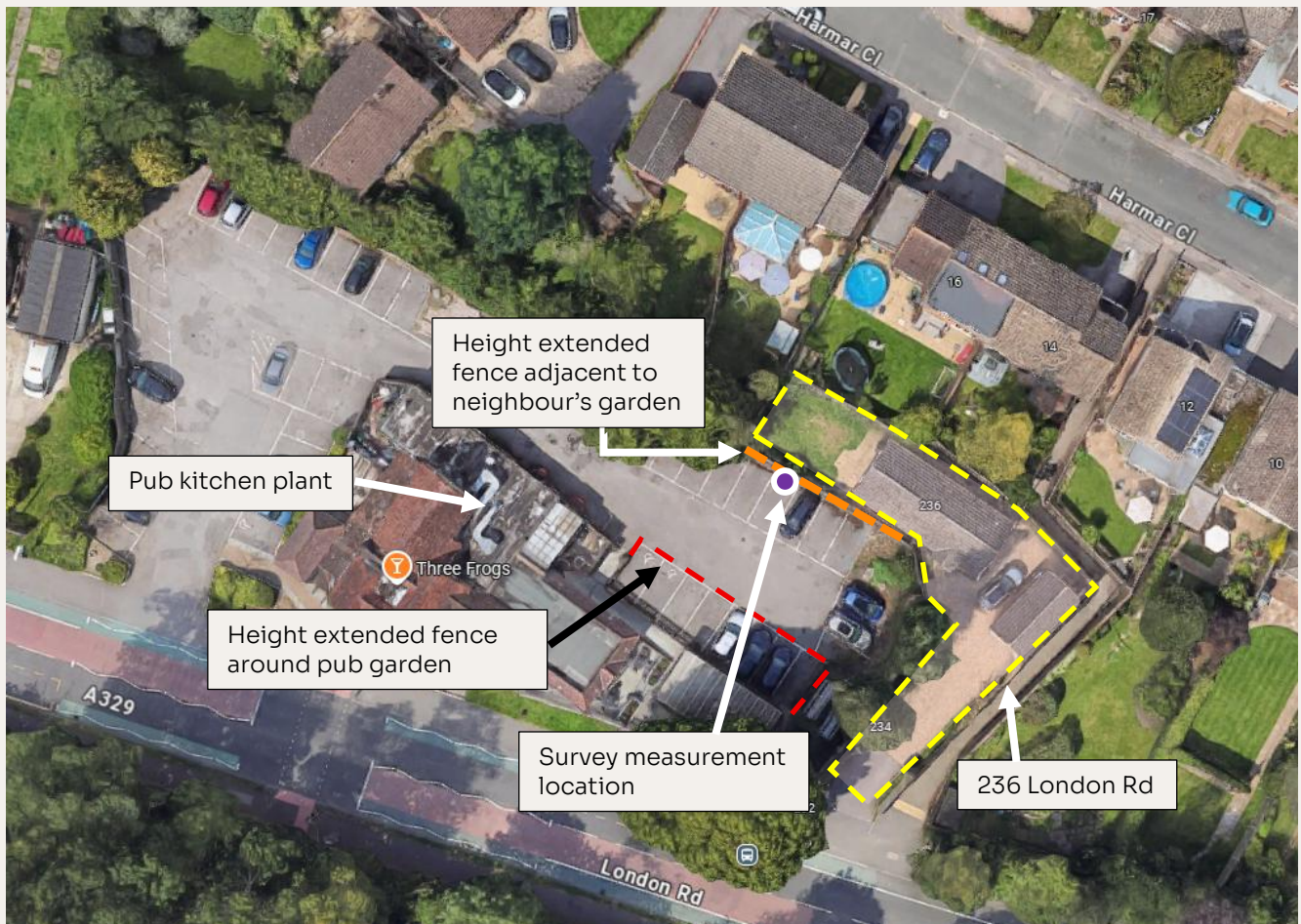


Figure 9 Satellite image showing locations of fencing in relation to neighbours

The raised fences reduce line-of-sight to the windows of 236 London Rd, further reducing the noise intrusion into the internal spaces of the nearest residence. Regarding internal spaces of other nearby neighbours, the distances to the windows are greater.

The nearest window (1m in front of window) other than 236 London Rd is c. 17m away from the measurement location (which corresponds to approximately 25 dB distance attenuation). With a predicted (based on the survey) 55 dB L_{Aeq} just outside the fence, subtracting 25 dB distance attenuation results in a sound pressure level of 30 dB at 1m in front of the window, assuming point source propagation. This is already below the BS 8233 criteria of 35 dB L_{Aeq} for *internal* ambient noise level in bedrooms during daytime.

Conclusion

It is considered that the conclusions based on the noise survey along with the proposed Noise Control Policy for the pub to adopt and the noise mitigation measures being taken will satisfy the Council and reduce noise disturbance to neighbours.

Appendix – Terminology

This appendix provides an explanation of some of the terms used in this report.

A-weighting L_A or L_{pA} , L_{WA}	Within its operating limits a precision measurement microphone measures all frequencies the same so the output it produces does not reflect what we would actually hear. The A-weighting is an electronic filter that matches the response of a sound level meter to that of the human ear. When A-weighted the Sound Pressure Level L_p becomes L_{pA} (or L_A) and the Sound Power Level L_W becomes L_{WA} .
L_p	<i>The instantaneous sound pressure level (L_p)</i>
L_{pA} (or L_A)	<i>The A-weighted instantaneous sound pressure level (L_{pA} or L_A). This is the root mean square size of the pressure fluctuations in the air. This level can fluctuate wildly even for seemingly steady sounds. To make sound level meters easier to read the values on the display are smoothed or damped out. This is effectively done by taking a rolling average of the previous 0.125s (FAST time constant) or the previous 1s (SLOW time constant).</i>
L_{AF} , L_{AS}	The letters F or S are added to the subscripts in the notation to indicate when the FAST or SLOW time constant has been used. These are often omitted but it is good practice to include them.
L_{max}	<i>The maximum instantaneous sound pressure level (L_{max}),</i>
L_{Amax}	<i>The A-weighted maximum instantaneous sound pressure level (L_{Amax})</i>
L_{AFmax}	<i>The A-weighted maximum instantaneous sound pressure level with a FAST time constant (L_{AFmax}).</i>
$L_{N,T}$	<i>The percentage exceedance sound pressure level ($L_{N,T}$),</i>
$L_{AN,T}$ $L_{AFN,T}$ N = %age value, 0-100 T = measurement time eg. L_{A90} , L_{A10} , $L_{AF90, 5 min}$	<i>The A-weighted percentage exceedance sound pressure level ($L_{AN,T}$), the A-weighted percentage exceedance sound pressure level with a FAST time constant ($L_{AFN,T}$). This is the sound pressure level exceeded for $N\%$ of time period T. e.g. If an A-weighted level of x dB is exceeded for a total of 6 minutes within one hour, the level will have been above x dB for 10% of the measurement period. This is written as $L_{A10,1hr} = x$ dB. L_{A0} (the level exceeded for 0 % of the time) is equivalent to the L_{Amax} and L_{A100} (the level exceeded for 100 % of the time) is equivalent to the L_{Amin}. It is good practice to include the letter which identifies the time constant used as this can make a significant difference to the value.</i>
$L_{eq,T}$	<i>The equivalent continuous sound pressure level over period T ($L_{eq,T}$),</i>
$L_{Aeq,T}$ T = measurement time eg. $L_{Aeq,5min}$	<i>The A-weighted equivalent continuous sound pressure level over period T ($L_{Aeq,T}$). This is effectively the average sound pressure level over a given period. As the decibel is a logarithmic quantity the L_{eq} is not a simple arithmetic mean value. The L_{eq} is calculated from the raw sound pressure data. It is not appropriate to include a reference to the FAST and SLOW time constants in the notation.</i>

