

Northampton – Noise Assessment

In law there is no recognised standard or level which can be applied to determining if a source of noise is a nuisance or not. Nuisance will be assessed by a number of factors, and the intrusive nature of noise can be determined having regard to such factors including (but not limited to) time of day, the frequency and/or duration of the noise, the character of the neighbourhood, the impact on a person and, the sensitivity of an individual.

There is extensive research which establishes the links between exposure to noise and effects on health (e.g. hearing damage, health effects, stress, loss of sleep). There is no single authoritative standard which seeks to set acceptable limits for community noise, but perhaps the most commonly quoted source of guidance for environmental noise derives from the World Health Organisation's guidelines for community noise.

It is recommended that for a continuous noise source the equivalent sound pressure level should not exceed 30 dB(A) indoors, if negative effects on sleep are to be avoided. If the noise is not continuous, LA_{MAX} are used to indicate the probability of noise induced awakenings. Effects have been observed at individual LA_{MAX} exposures of 45 dB(A) or less. Consequently, it is important to limit the number of noise events with a LA_{MAX} exceeding 45 dB(A).

These WHO guideline figures have been used to make a basic comparison between levels of street noise and the impact (measured or likely) on existing or proposed residential properties within Northampton town centre.

Street noise and antisocial behaviour is a perceived problem associated with the British late night drinking culture, arising from boisterous behaviour associated with drunkenness. This can have unintended consequences on residents of the town centre of Northampton whose expectation of quiet enjoyment of their home can be diminished, leading to poor sleeping conditions or an acceptance that this is just the way things are.

The purpose of this document is to present noise survey evidence gathered from 3 different surveys across different locations of the town centre where there is a mix of late night drinking venues and residential accommodation in close proximity. The survey evidence has been taken from a mix of Borough led investigations and reports prepared by private consultants as part of planning/licensing applications. Therefore the level of detail does vary from survey to survey. By coincidence all surveys were conducted in late September 2012.

Noise directly arising from licensed premises, e.g. music, is considered to be outside the scope of this document. It is considered that regardless of whether an EMRO is implemented to curb the sale of alcohol, the EMRO would not seek to restrict opening hours beyond that already granted through the licensing/planning regime. Therefore venues could still effectively trade until their terminal hour but not sell alcohol. Loud music would continue to be addressed through the statutory nuisance regime or licence review process, whereas noise from the street cannot.

1. Fish Street

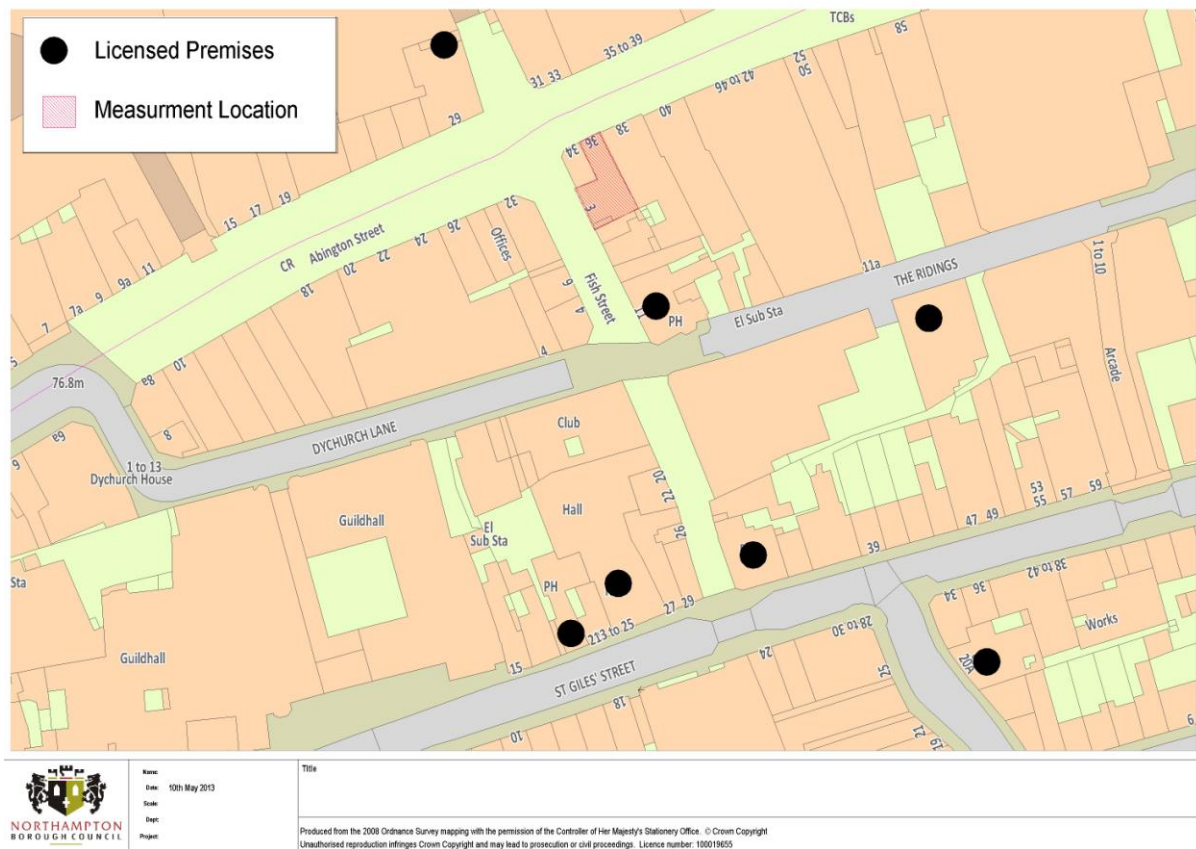


Figure 1: Location Plan of 3 Fish Street and surrounding licensed premises

This assessment was conducted by a private acoustic consultant to support a planning application seeking to change the use of the upper floors of the premises from commercial to residential. A noise survey was undertaken to assess the likely internal noise climate within the proposed units of accommodation.

External measurements were obtained over a Saturday (22nd – 23rd September 2012) night between the hours 22.40 – 04.00 from the 2nd floor window of 3 Fish Street.

The consultant noted that the principal contributors to the ambient noise climate during this period were the night time revellers that tended to walk along Fish Street and tended to congregate at the junction of Fish Street and Abington Street and, the emission of loud amplified music from the Fish Public House.

With reference to the night time revellers it was noted that they were quite boisterous from the start of the measurement period, with frequent bouts of shouting and singing being recorded. The generally boisterous behaviour appeared to increase until around 01.00 hours and this period was coincident with an increased number of inebriated people walking along Fish Street, often singing and shouting as they went. Overall the revellers contribution to the ambient noise climate tended to reduce from about 01.30 hours onwards, although intermittent noisy events did continue to occur throughout the measurement period.

The consultant reported that the maximum measured L_{Aeq} levels occurred at 01.00 and this coincided with two large groups of very vocal revellers who had congregated at the junction of Fish Street and Abington Street. The highest measured L_{AMAX} value occurred at 02.00 and was again a consequence of one inebriated individual shouting very loudly.

In terms of this development an adequate scheme of noise insulation may be provided to address the matter of street noise such that suitable conditions might be achievable. However, in the case of existing residential development within the town centre there is no scope to apply this retrospectively.

Measurement data obtained by the consultant notes high ambient levels continuing until approximately 02.30 hours, where the measured levels were largely found to be in excess of 60 dB(A) as an average level and 75 dB(A) as an L_{AMAX} . It has been assumed that over this period the higher measured levels have continued to be influenced by street noise.

During the winter, the windows on most residential properties will normally remain closed to maintain a comfortable internal temperature. However, in the spring/summer windows will be used for cooling/comfort and ventilation. An open window will allow sound to pass more easily through the building envelope. As a rule of thumb a partially open window will typically provide attenuation ranging from 10 – 15 dB(A), and between 27 – 33 dB(A) for a closed window.

By subtracting the values for a partially open window from those measured by the acoustic consultant (e.g. $60 - 15 = 45$ (L_{Aeq}); $75 - 15 = 60$ (L_{AMAX})) it can be seen that the WHO guideline limits for restful sleep would not be met as a result of street noise.

2. Abington Street

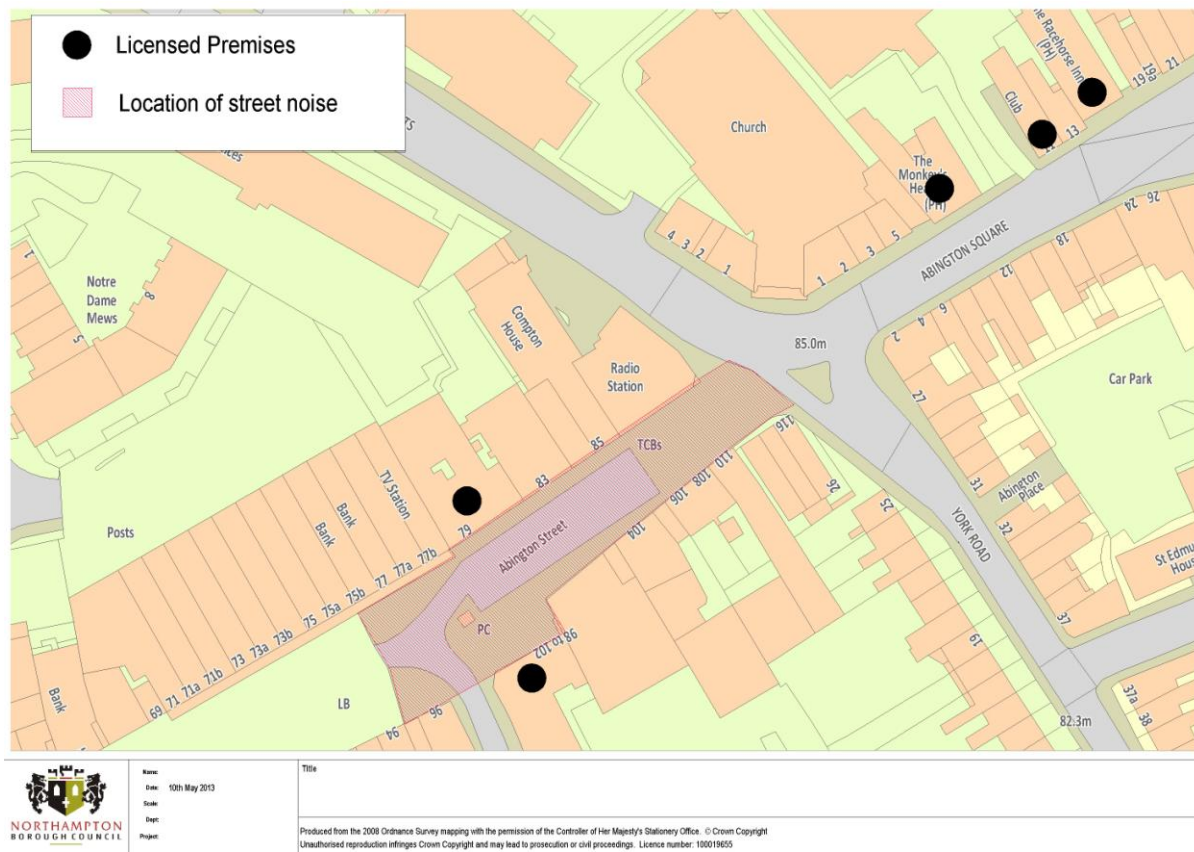


Figure 2: Location Plan for Abington Street and surrounding licensed premises

This assessment was conducted by Regulatory Services at Northampton Borough Council in response to complaints made of loud music arising from a bar located in the vicinity of Abington Street/Abington Square. Measurements were obtained from the complainant's bedroom over 3 consecutive nights between 19th – 22nd September 2012 as part of the complaint investigation. From analysis of the survey evidence it was noted that street noise was an apparent feature of the local environment when the music noise subsided.

Consistent with the observations made by the independent consultant working on 3 Fish Street, there is evidence of drunken and boisterous behaviour arising from night time revellers.

- Wednesday 19th September 2012

It would seem that a Wednesday night in Northampton is Student night. The survey noted that when musical entertainment finished around 02.00 hours, this led to some noticeable incidents of street noise, characterised by events of raised voices (shouting), singing, laughter etc. The trace presented at Figure 3 notes a number of examples of noisy events of street noise, i.e. night time revellers. These events are coded as street noise (SN). It can be noted that these events continued well beyond the apparent closure of the problem bar suggesting that street noise arises from visitors passing through the town centre.

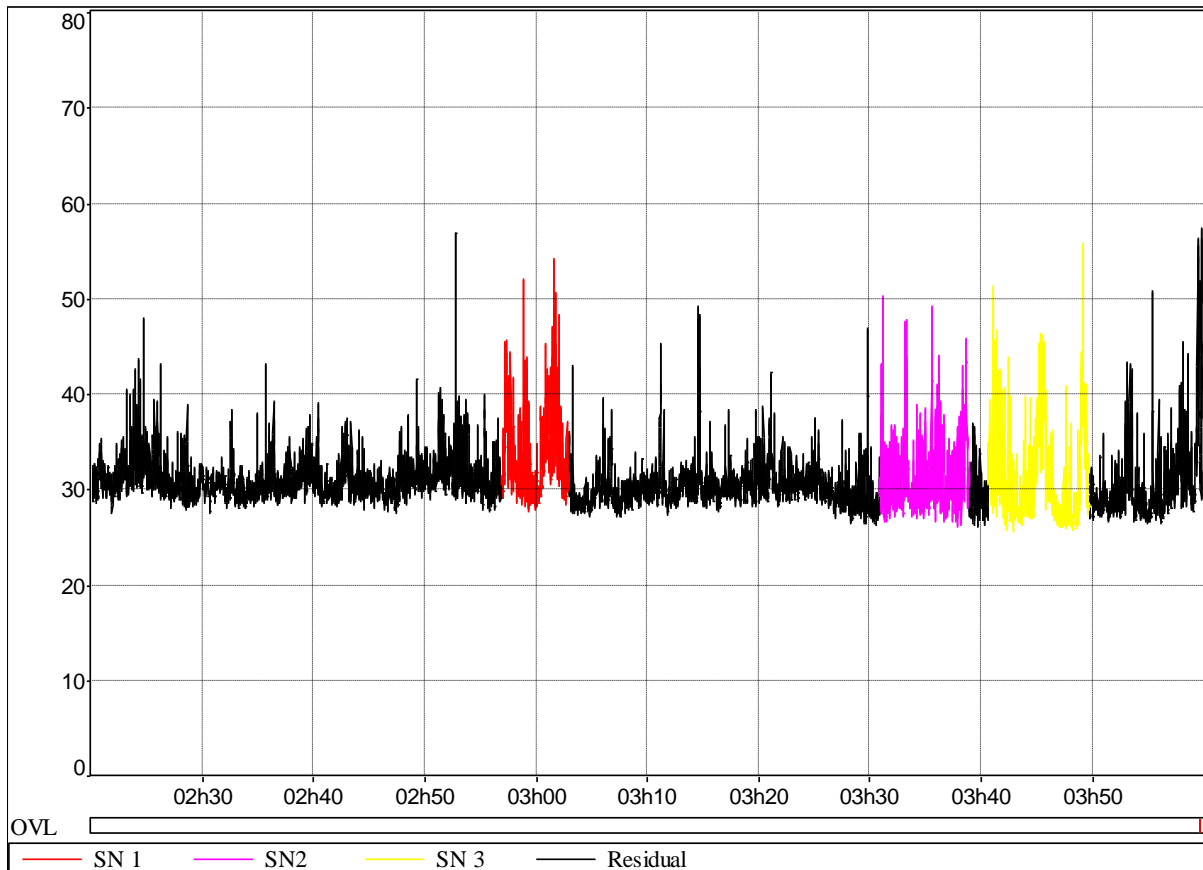


Figure 3: Wednesday 19th September 2012, 02.20 – 04.00

Presented at figure 4 are the results of the coded events of street noise. As measurements were obtained from a bedroom these levels can be directly compared with the WHO guideline values, where it can be noted that street noise exceeds both the recommended L_{Aeq} and $L_{A_{MAX}}$ values for restful sleep.

File	180912 MoMos_120918_220000.CMG		
Location	Ch. 1		
Data type	Leq		
Weighting	A		
Start	18/09/12 22:00:00:000		
End	19/09/12 04:00:00:000		
	Leq specific	Lmax	Duration cumulated
Source	dB	dB	h:m:s:ms
SN 1	37.4	58.0	00:05:58:500
SN 2	33.8	54.1	00:08:00:000
SN 3	36.2	57.0	00:09:04:500

Figure 4: Calculated levels for Street Noise

- Thursday 20th September 2012

Street noise can be clearly noted on the recording but this is more pronounced just after 23.00 hours, subsiding around 01.20. This is assumed to be as a result of lower footfall to the town centre compared with busier nights.

The traces presented in Figures 5 and 6 denote incidents that have been coded as Street noise. These have not been directly linked to any one licensed premises in particular.

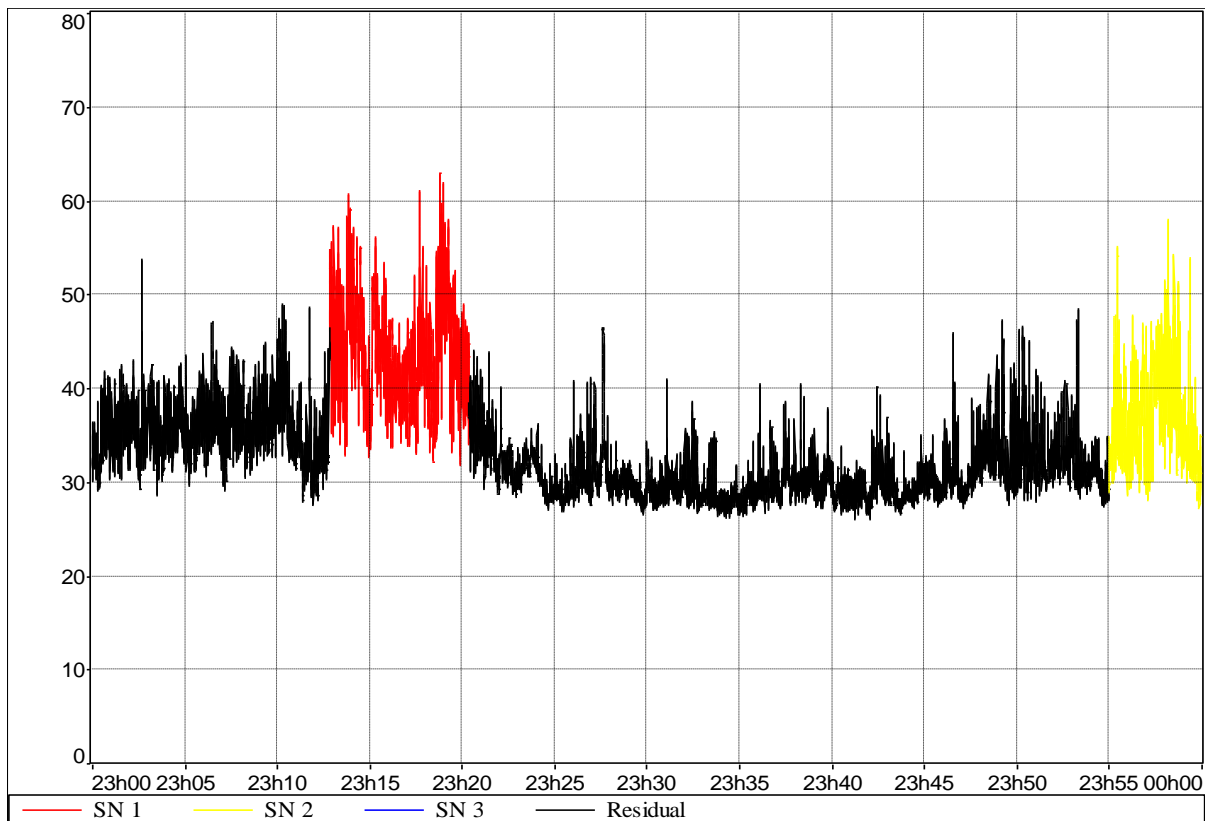


Figure 5: Thursday 20th September 2012, 23.00 – 00.00

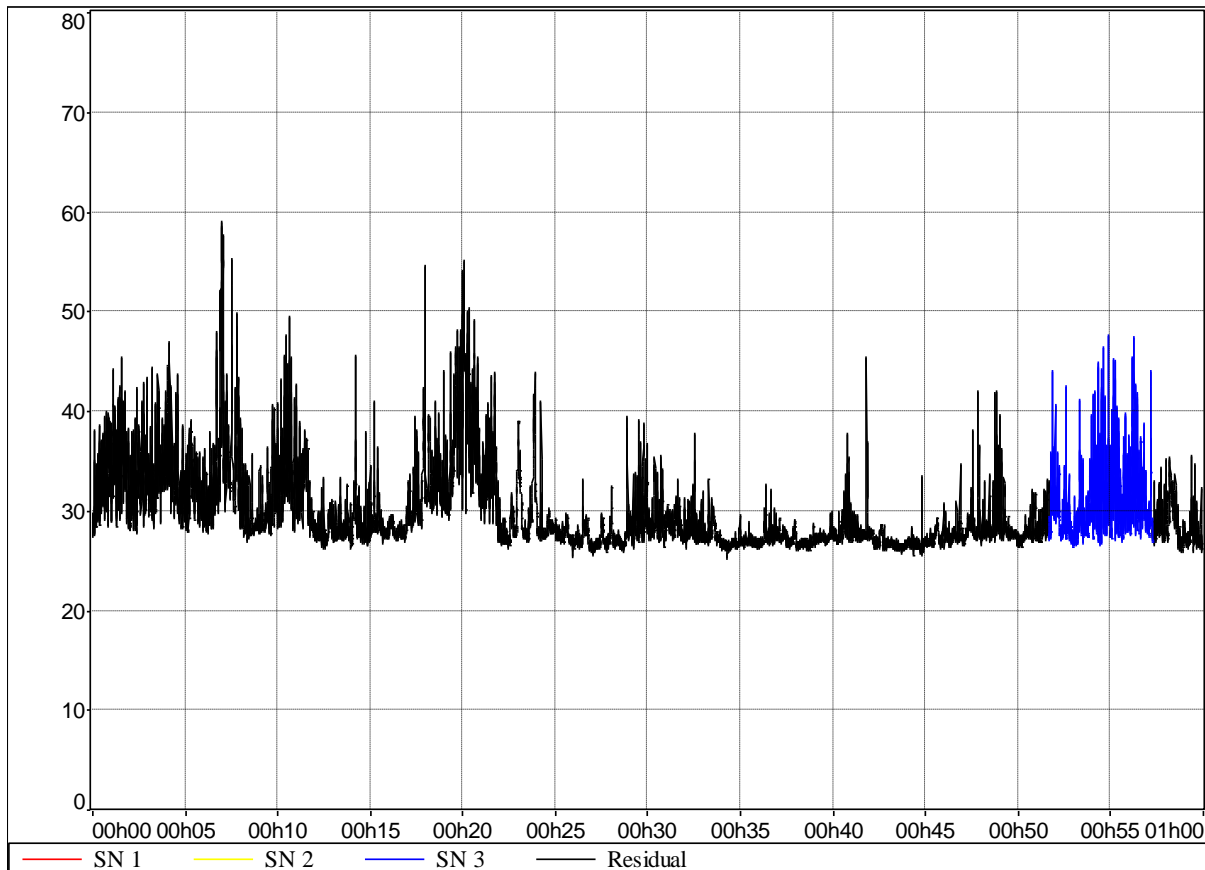


Figure 6: Thursday 20th September 2012, 00.00 – 01.00

Presented at Figure 7 are the calculated levels for each event coded as street noise. By directly comparing these with the WHO guideline values, street noise exceeds both the recommended L_{Aeq} and $L_{A_{MAX}}$ values for restful sleep.

File	180912 MoMos_120919_220000.CMG		
Location	Ch. 1		
Data type	Leq		
Weighting	A		
Start	19/09/12 22:00:00:000		
End	20/09/12 04:00:00:000		
	Leq specific dB	Lmax dB	Duration cumulated h:m:s:ms
SN 1	48.0	64.1	00:07:35:200
SN 2	40.7	59.7	00:05:00:600
SN 3	33.6	51.3	00:05:34:500

Figure 7: Calculated levels for Street Noise

- Friday 21st September 2012

As a result of loud music on the recording, street noise has been analysed after 02.00 when this ends. Presented at Figure 8 is the audio trace for the period after the music finished. On this trace there can be seen a clear crescendo of noise which gradually falls off in volume reaching a 'background' level at approximately 02.55 hours. A slope has been added to Figure 8, to note the gradual decreasing levels.

Based upon the time that music ends, and the commencement of street noise it is considered likely that street noise is the result of crowd dispersal from the source premises in question which gradually decreases as people vacate the area. This event has been coded as one single, sustained event.

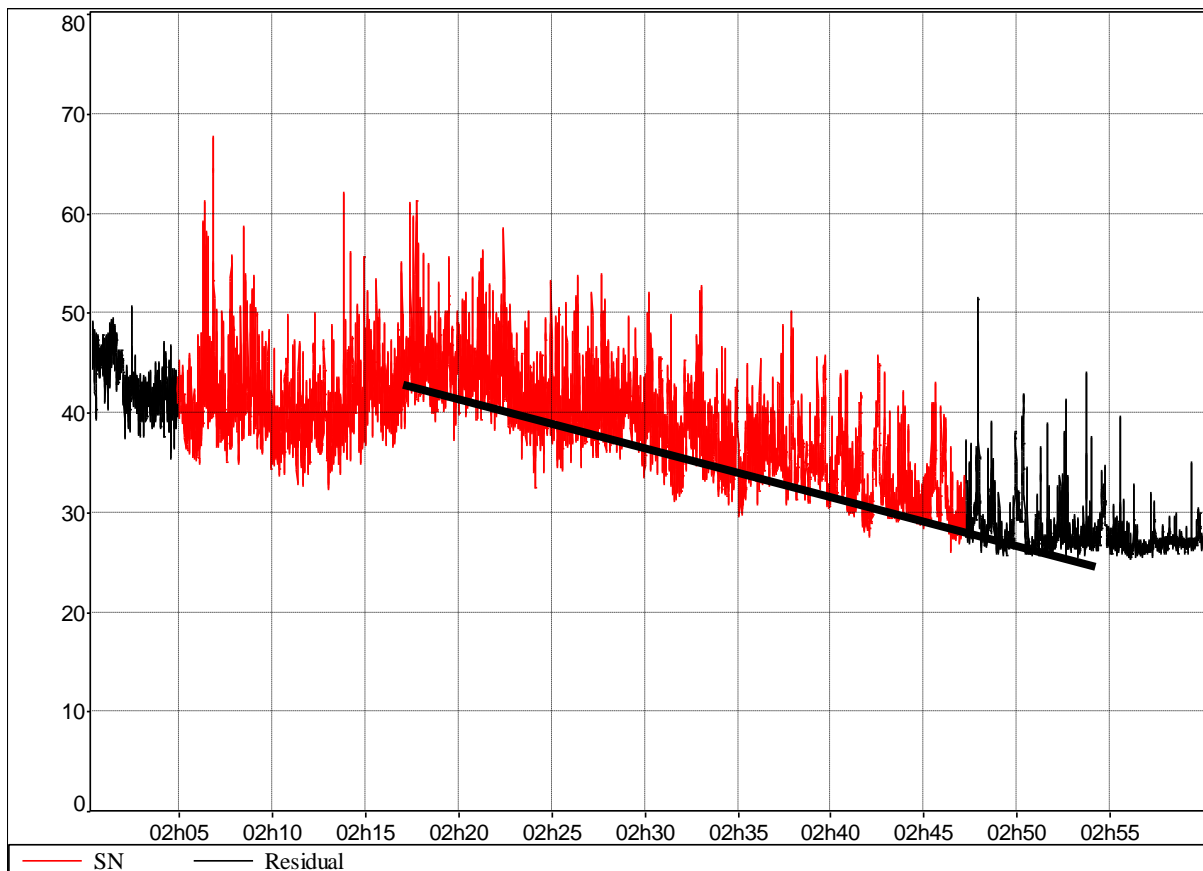


Figure 8: Friday 21st September 2012, 02.00 – 03.00

The levels calculated for street noise are presented at Figure 9. Comparing this with the WHO guideline values, street noise exceeds both the recommended L_{Aeq} and LA_{MAX} values for restful sleep.

File	180912 MoMos_120920_220000.CMG		
Location	Ch. 1		
Data type	Leq		
Weighting	A		
Start	20/09/12 22:00:00:000		
End	21/09/12 04:00:00:000		
	Leq specific dB	Lmax dB	Duration cumulated h:m:s:ms
Source	42.9	68.0	00:42:17:100

Figure 9: Calculated levels for Street Noise

3. Bridge Street

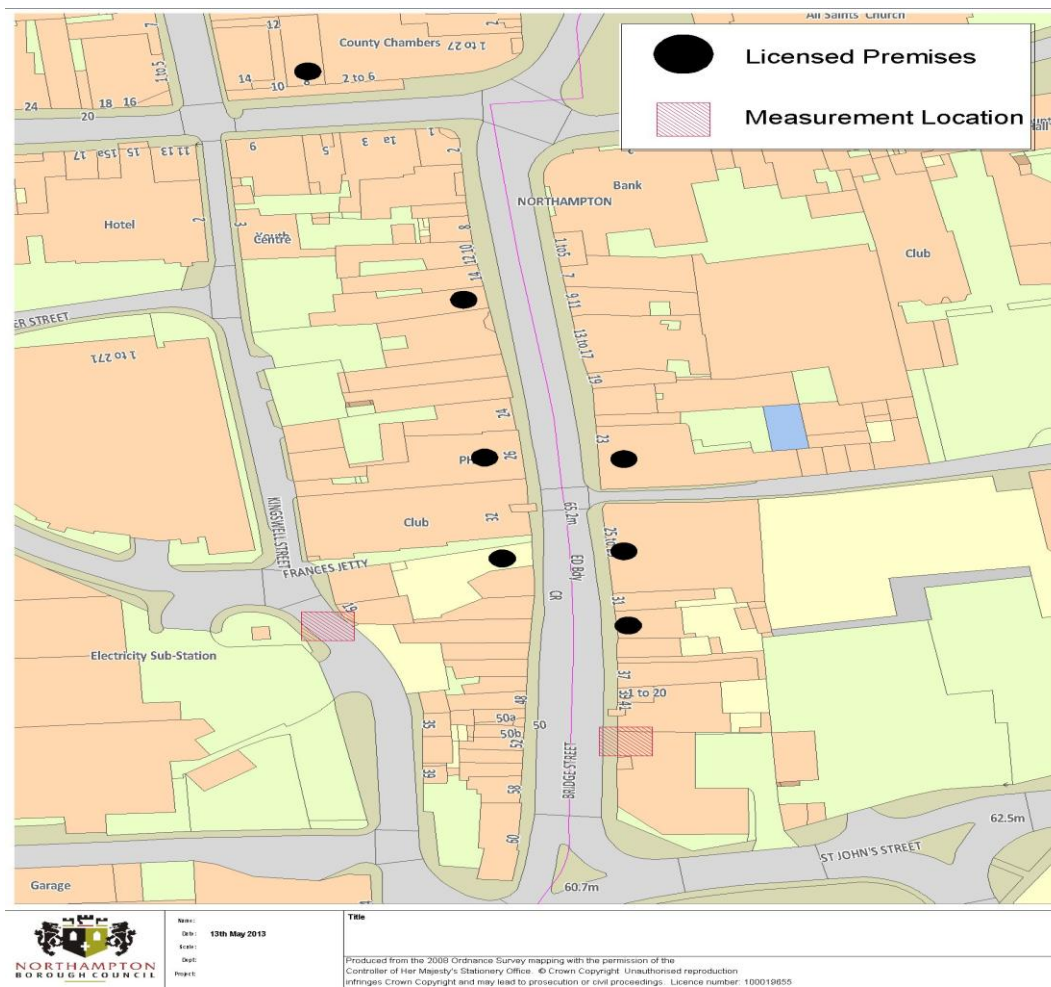


Figure 10: Location Plan for Bridge Street and surrounding licensed premises

This assessment was conducted by a private acoustic consultant to support an application seeking to change the use of the vacant Thai Restaurant at 60 Bridge Street to a bar. A noise survey was undertaken to assess the likely impact of the proposed bar, which included a baseline survey.

Baseline noise measurements were undertaken on Thursday 20th September 2012 between 00.30 – 03.00 hours. Measurements consisted of a number of 5 minute measurements collected from a number of locations near the application site. Those monitoring positions of interest for this report are the measurements conducted from Kingswell Street (overlooked by the Pinnacle) and Bridge Street (overlooked by Clarendon House).

The consultant noted that at Kingswell Street the noise environment was affected by noisy pedestrians using the cut through into Woolmonger Street, plant noise from the rear of buildings on Bridge Street, activity in the service yard and activity from a local taxi-cab company (car doors and vehicle movements).

On Bridge Street it was noted that music break-out from bars, clubs and food take-away venues, and conversation, shouting and singing from people were the predominant sources of noise. The consultant also noted that activity on Bridge Street continued throughout the survey period.

The average measured values for the two locations is summarised in Table 1 below. It is evidenced that the night time noise environment is high. It should also be borne in mind that the survey was conducted on a Thursday night/Friday morning, when Bridge Street would be assumed as operating at a lower capacity than the weekend.

Location	L_{Aeq,5MIN}	L_{AMAX}
Kingswell Street	60	72
Bridge Street	64	78

Table 1: Average measured values

As measurements were made externally, the same method for predicting internal bedroom levels as for the Fish Street assessment has been applied. By subtracting a value of 15 dB(A) for a partially open window from those measured by the acoustic consultant with the WHO guideline values, street noise exceeds both the recommended L_{Aeq} and LA_{MAX} values for restful sleep.