

**Assessment of the Emission of Noise from the Proposed New Rumpus
Restaurant to be Located within the Former Bank Premises at
22 Carr Lane, Slaithwaite**

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1.0 Summary

Planning permission is being sought permitting the conversion of the former Lloyds Bank building at 22 Carr Lane in Slaithwaite, to form a new restaurant and takeaway food premises. The proposed restaurant would replace the existing Rumpus restaurant, currently located at 7 Church Street in Slaithwaite, providing larger facilities for an expanding business.

Further to the planning application, comments have been received from Kirklees Council requiring an evaluation of the potential emission of noise from the proposed premises, including an assessment of how such noise emission may affect the existing noise climate in the vicinity of the nearest noise sensitive premises on Lewisham Road. With respect to this requirement, Druk Limited was commissioned to undertake an assessment of the existing noise climate in the vicinity of the proposed restaurant and to assess the likely noise emissions from the business. The assessment of the emission of noise from the business will be undertaken in accordance with the procedures and guidance contained within a variety of documents including British Standard (BS) 4142: 2014 "Methods for rating and assessing industrial and commercial sound".

The noise surveys have highlighted that the existing noise climate in the vicinity of the proposed restaurant was characteristic of a sub-urban type environment that was largely dominated by road traffic on Carr Lane. During the measurement period the number of vehicles on Carr Lane remained reasonably steady, however Carr Lane was not regarded as being particularly busy. The majority of the vehicles on Carr Lane comprised private cars and taxis, although some light and heavy goods vehicles were also noted during the period. Some vehicles were noted on Lewisham Road, but these were comparatively small in number and comprised mainly private cars.

Assessments of the potential noise emission from the proposed restaurant were undertaken to investigate the potential effect that these may have on the existing noise climate of the nearest noise sensitive locations on Lewisham Road. The results of the assessment have indicated that the noise break-out from the proposed restaurant and the external seating area would not have a detrimental effect on the existing noise in the vicinity of the dwellings on Lewisham Road.

Turning to the operation of the external plant and equipment serving the proposed restaurant, it is understood that the current layout incorporates a 1200mm long attenuator in the exhaust ductwork and the provision of a robust barrier to enclose the entire installation on the flat roof to the rear of the proposed restaurant. Both of these elements will serve to reduce the transmission of noise, from the external plant and equipment, to the nearby noise sensitive receptors on Lewisham Road.

To further evaluate the potential emission of sound from the external plant and equipment, assessments have been undertaken according to the principles contained within British Standard (BS) 4142:2014. Applying these principles to the emission of noise from the air handling equipment it has been demonstrated that the calculated rating level at the two nearest noise sensitive locations would be '*unlikely to have an adverse impact*' at the reception point. With reference to the requirement contained within the Kirklees Council "*Noise Design Advice*", it can be seen that the resulting rating level would not exceed the requirement that "*it is recommended that during*

normal daytime hours (07:00 to 23:00 hours), the BS4142 rating level, measured over 1 hour, should be 5dB below the background (L_{A90})".

Based upon the results contained within the report, there is no reason why the proposed restaurant, including the suggested control and attenuation measures, cannot coexist with the existing residential dwellings on Lewisham Road, without detrimentally affecting the existing noise climate.

Report Prepared by:

A handwritten signature in black ink, appearing to read 'R. Smith'.

Robert Smith

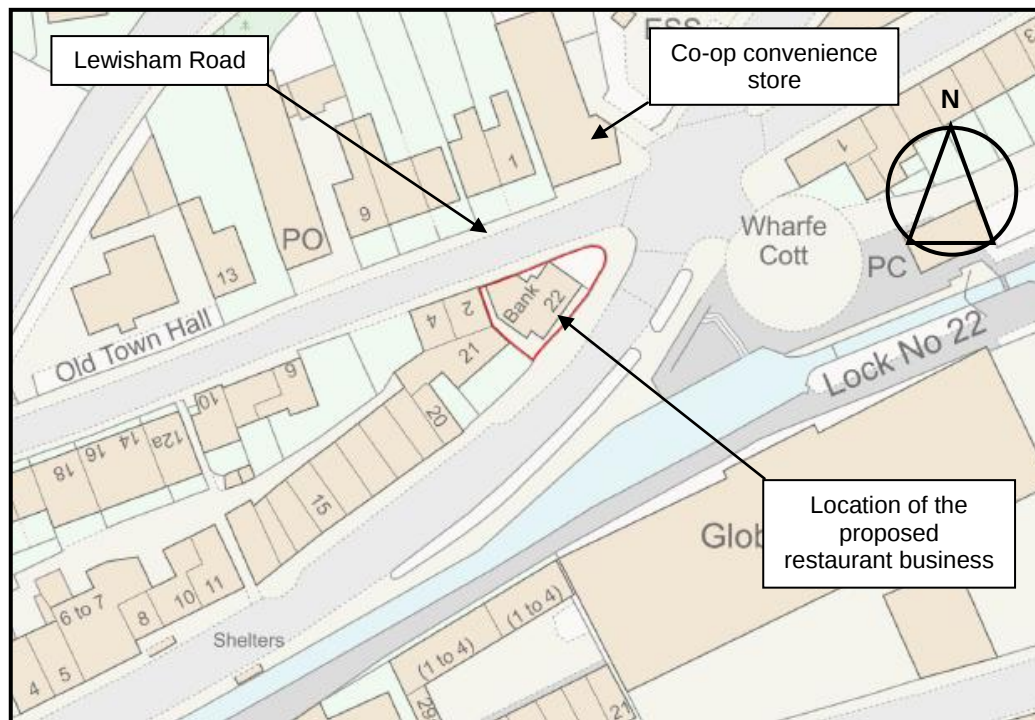
2.0 Introduction

Planning permission is being sought permitting the conversion of the former Lloyds Bank building at 22 Carr Lane in Slaithwaite to form a new restaurant and takeaway food premises. The proposed restaurant would replace the existing Rumpus restaurant, currently located at 7 Church Street in Slaithwaite, providing larger facilities for an expanding business.

Further to the planning application, comments have been received from Kirklees Council requiring an evaluation of the potential emission of noise from the proposed premises, including an assessment of how such noise emission may affect the existing noise climate in the vicinity of the nearest noise sensitive premises on Lewisham Road. With respect to this requirement, Druk Limited was commissioned to undertake an assessment of the existing noise climate in the vicinity of the proposed restaurant and takeaway food business and to assess the likely noise emissions from the business. The assessment of the emission of noise from the business will be undertaken in accordance with the procedures and guidance contained within a variety of documents including British Standard (BS) 4142: 2014 "Methods for rating and assessing industrial and commercial sound".

3.0 Site Description

The proposed restaurant and takeaway business is to be located within the former Lloyds Bank building situated at 22 Carr Lane in Slaithwaite (figure 1 and photograph 1 overleaf). Immediately to the North of the proposed restaurant premises are the existing residential properties on Lewisham Road (photograph 2 overleaf). To the South of the proposed restaurant premises is Carr Lane with the Huddersfield narrow Canal and the former Globe Worstead Works beyond (photograph 3 overleaf). To the East of the proposed restaurant premises is the junction of Carr Lane and New Street with a car parking area beyond (photograph 4 overleaf). To the West of the proposed restaurant premises are what appear to be commercial premises on both Carr Lane and Lewisham Road (photographs 5 and 6 overleaf).

Figure 1. Location of the proposed restaurant and takeaway business**Photograph 1.** Location of the proposed restaurant within the former Lloyds Bank building

Photograph 2. Existing residential properties on Lewisham Road



Photograph 3. Carr lane and the Globe Worstead Works to the South of the proposed restaurant premises



Photograph 4. New Street and car parking area to the East of the proposed restaurant premises



Photograph 5. Commercial premises to the West of the proposed restaurant on Lewisham Road



Photograph 6. Commercial premises to the West of the proposed restaurant on Carr Lane



4.0 Assessment Criteria

As planning permission is being sought, no planning conditions currently exist with reference to the proposed restaurant and takeaway premises. Despite this a consultation response issued by Kirklees Council's Environmental Health Department on the 30th November 2023, expressed concerns relating to, amongst other things, the emission of noise from the proposed restaurant and any associated external extraction plant and equipment. The relevant section of this consultation response is detailed below:

Noise - Noise Report Required Before Determining the Application (new noisy development near existing residential). We note on the plans, outside seating is proposed to the garden at the road junction. There is potential for noise from customers and entertainment to cause loss of amenity to residential properties across the road.

We also have concerns that no information has been provided in relation to any mechanical plant and equipment for example refrigeration/air conditioning plant.

With this in mind, before the application can be determined, details of a noise assessment by a suitably competent person must be submitted in writing to the Local Planning Authority. The report shall include:

- a) an assessment of all noise emissions from the proposed development*
- b) details of existing background and predicted future noise levels at the boundary of noise sensitive premises.*

- c) *a written scheme of how the occupants of the above-mentioned noise sensitive premises will be protected from noise from the proposed development with noise attenuation measures as appropriate*
- d) *a written scheme of any necessary noise attenuation measures and demonstrate how nearby residents will be protected from noise from the proposed development. This may include a noise a management plan for external areas and management of customers leaving the premises late in the evening.*

The assessment shall be appropriate for all times of day and night when the development will operate. The report should include any supporting calculations. If the levels predicted in the report are unacceptable, it may be necessary to refuse the application. Otherwise, it may be necessary to specify attenuation measures as conditions of consent. We require this information to ensure the proposed development does not cause harmful noise pollution within neighbouring noise sensitive locations, in the interest of amenity, to comply with the aims and objectives of Policies LP24 and LP52 of the Kirklees Local Plan and Chapters 12 and 15 of the National Planning Policy Framework.

With reference to the potential emission of noise from the proposed restaurant, it is anticipated that the most significant sources of noise would be: the break-out of noise from the internal spaces, the emission of noise from the small external seating area to the East of the proposed restaurant and the emission of noise from the external roof mounted extraction plant and equipment associated with the preparation of food. With reference to the emission of noise from the proposed restaurant, associated external extraction equipment and the externals eating area, reference will be made to the Kirklees Council "Noise Design Advice" publication issued in May 2007. In addition reference will be made to the assessment principles contained within British Standard (BS) 4142:2014 "Methods for Rating and Assessing Industrial and Commercial Sound".

4.1 Kirklees Council "Noise Design Advice"

This document was produced in May 2007 and provides guidance to developers as to how acceptable noise levels can be achieved, so protecting the existing noise environment in the vicinity of the proposed development. The guidance document covers a range of scenarios ranging from the assessment of commercial, industrial, entertainment, residential noise etc., and the criteria that would be considered acceptable when evaluating what effect such development may have on the existing noise environment.

Of the many scenarios covered in the guidance document, it is thought that section 1 is the most directly applicable to the proposed restaurant. With this in mind the relevant section is reproduced below:

- 1.1 *This advice aims to protect the present and future occupiers of residential properties from your new industrial or commercial noise.*

Developers should carry out an assessment in accordance with BS4142 to determine the rating level of the new development. It is recommended that during normal daytime hours (0700 to 2300 hours), the BS4142 rating level, measured over 1 hour, should be 5dB below the background (L_{A90}). During

the night-time period (2300 to 0700 hours), the BS4142 rating level, measured over 5 minutes should be 5dB below the background (L_{A90}).

4.2 BS 4142:2014 "Methods for Rating and Assessing Industrial and Commercial Sound"

British Standard (BS) 4142:2014 was published at the end of October 2014 and replaced the earlier 1997 version of the standard. The current version of BS4142 is similar to the earlier version inasmuch as it provides a method for the determination of rating levels with respect to the emission of noise from industrial and commercial facilities, as well as an evaluation of the ambient, background and residual sound levels. However the current version contains a number of additional features and extensions of scope with the aim of making it a more flexible procedure. The extension of scope means that the Standard now encompasses methods for the assessment of sound that is industrial or commercial in nature, including:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment;
- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises: and;
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial sites.

Notwithstanding the extension of the scope of the Standard, the Standard also makes it clear that a number of situations would be outside the scope of the assessment procedure. Here, the Standard describes the following as being beyond its scope:

- Recreational activities, including all forms of motorsport;
- Music and other entertainment;
- Shooting grounds;
- Construction and demolition;
- Domestic animals;
- People;
- Public address systems for speech, and;
- Other sources falling within the scopes of other standards or guidance.

It is also stated that *"the determination of noise amounting to a nuisance is beyond the scope of this British Standard"*.

Regarding the assessment procedure, the current version of the Standard, as with the earlier Standard, also provides a method for 'correcting' the specific sound to take account of any acoustic features that are audible at the assessment position. Unlike the earlier version the current version of the standard provides a sliding scale of corrections of up to +6dB in the case of tonal components and up to +9dB for impulses. A further +3dB correction is also available for situations where:

- The emission of sound has characteristics that are neither tonal or impulsive; and/or
- The emission of sound is intermittent or has discernible on/off characteristics.

The determination of the presence of tonal or impulsive features can be assessed using either subjective or reference determination methods.

Once the various parameters, relating to the ambient, background, residual and rating sound levels, have been established, the standard describes a method for comparing data in order to evaluate what impact the specific noise may have on an existing noise climate. As with the earlier version of the standard the current version of the standard continues to apply the difference between the rating and background sound levels as the basis for assessment. However, unlike the earlier version the assessment is now more contextual rather than the more categorical nature of the earlier version of the standard. With reference to the context, the current version of the standard states the following with respect to the assessment of impact:

- a) Typically, the greater this difference, the greater the magnitude of impact.
- b) A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.
- d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

4.3 Perceived Change

The level of change in an existing noise climate that may be brought about by the introduction of another noise source, will cause a variety of responses within the individuals experiencing the change. These responses are frequently regarded as being subjective, based on a variety of perceptions and based on the context within which the change is framed. With the subjectivity of potential responses to changes in noise levels in mind, guidelines have been formulated to try and quantify the effects of any changes in noise on the perception of the overall level. Quoting from the Guidelines for Noise Impact Assessment (draft 10/04/02) by the Institute of Environmental Management and Assessment and the Institute of Acoustics, table 1 below shows the effects of changes in noise.

Table 1. Perceived change in noise levels and subjective effects

Change in level (no other changes in character)	Subjective effect	Likely impact
0dB	No change in level	None
Up to 3dB	Imperceptible	Slight
+3 to +5dB	Perceptible	Moderate
+5 to +10dB	Up to a doubling	Substantial
+10dB or more	At least a doubling	Severe

Note, however, that 'Subjective Effects' assume that the nature of the noise is unchanged. Also, many acousticians feel that the wording under the 'Likely Impact' column can be unhelpful.

5.0 **Assessment Procedure**

As per the requirements contained within BS 4142:2014, the assessments detailed in the subsequent sections of this report will be undertaken with respect to the location of the nearest sensitive receptors. With respect to the locations of the nearest noise sensitive receptors these have been identified as the existing residential dwellings on Lewisham Road, with numbers 3 and 5 Lewisham Road being regarded as the closest of the residential dwellings to the proposed restaurant.

In order to evaluate the existing local noise climate in the vicinity of the proposed restaurant, noise surveys to evaluate the current noise climate in the vicinity of the identified noise sensitive receptors were conducted. In the noise sensitive locations measurements of the existing background (L_{A90}) and residual (L_{Aeq}) sound levels were made obtained. With reference to the time periods over which the existing noise climates were made, these were undertaken at times during which the proposed restaurant would be expected to be trading. With respect to the trading hours of the proposed restaurant, the existing Rumpus restaurant at 7 Church Street in Slaithwaite operates between the following hours:

- Tuesday to Thursday - 16:00 - 21:00 hours
- Friday and Saturday - 12:00 - 21:00 hours
- Sunday - 12:00 - 20:00 hours.

It is anticipated that the proposed restaurant would operate very similar hours and as such the measurements of the existing noise climate would be undertaken during these normal trading hours. Measurements were made during the mid-afternoon (14:00 - 16:00 hours) and mid to late evening (20:00 - 22:00 hours) periods. These periods were selected as they arguably represent the quietest parts of a 'normal' weekday and weekend periods, with the late evening measurement periods being made at a time which is typically quiet and would correspond with the latest opening times of the proposed restaurant. Consequently comparisons made with levels obtained from these periods may be regarded as stringent criteria with reference to the subsequent assessments.

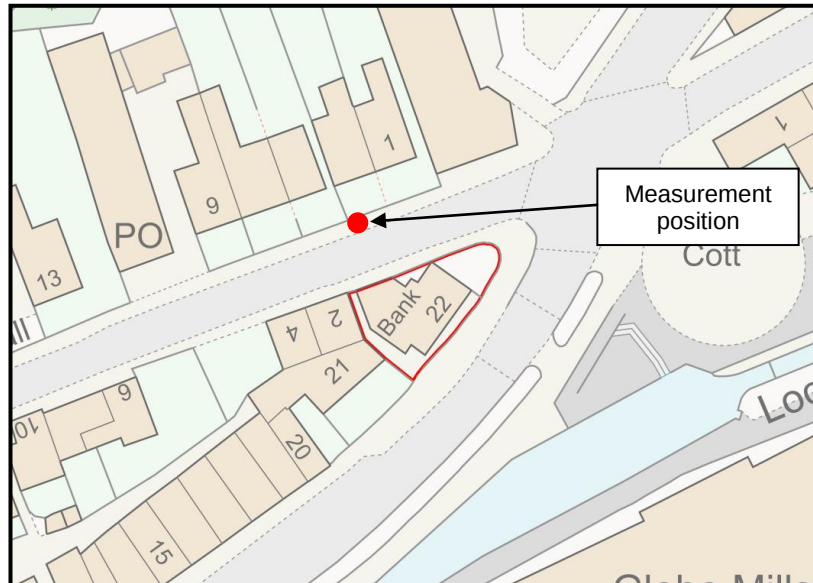
5.1 **Survey Times and Personnel**

Noise surveys to evaluate the background and residual sound levels were made between: 20:00 - 22:00 hours on Saturday 16th December 2023, 20:00 - 22:00 hours on Sunday 17th December 2023, 14:00 - 16:00 hours on Friday 5th January 2024 and 20:00 - 22:00 hours on Tuesday 9th January 2024. At no time during the measurement periods was any noise from the former Lloyds Bank building audible in the measurement locations.

The background and residual sound levels were obtained from one position to the West of number 3 Lewisham Road. The measurements were made on Lewisham Road itself in a position that was just on the edge of the pavement outside number 3 Lewisham

Road. This position was selected as it represented a compromise between getting as close to the nearest noise sensitive receptor positions as possible whilst remaining on land that was accessible to Druk Limited and was not in private ownership. The measurement positions are detailed on figure 2 below.

Figure 2. Approximate location of the background and residual noise measurement position



5.2 Weather

During the course of the background and residual sound level measurement surveys, the following weather conditions prevailed:

Saturday 16th December 2023

All surfaces were dry, the sky was clear, the temperature was approximately 8°C, the barometric pressure was approximately 1014mbar and the wind speed was approximately 2.8m/s.

Sunday 17th December 2023

All surfaces were dry, the sky was clear, the temperature was approximately 10°C, the barometric pressure was approximately 1008mbar and the wind speed was approximately 1.8m/s.

Friday 5th January 2024

All surfaces were dry, cloud cover was 100%, the temperature was approximately 8°C, the barometric pressure was approximately 1011mbar and the wind speed was approximately 0.6m/s.

Tuesday 9th January 2024

All surfaces were dry, the sky was partially overcast, the temperature was approximately 1°C, the barometric pressure was approximately 1018mbar and the wind speed was less than 0.3m/s.

5.3 Equipment

All the measurements detailed within this report were obtained using the equipment detailed in table 2 below.

All the equipment used is calibrated by a UKAS accredited calibration laboratory and the calibration certificates are available on request.

The sound level meter was field calibrated before and after the noise measurements, during which time no significant deviation in the calibrated level was observed.

Table 2. Equipment used during the existing noise climate measurements

Equipment description	Manufacturer	Model number	Serial number
Sound level meter	NTI Audio	XL2-TA	A2A-10232-E
Microphone pre-amplifier	NTI Audio	MA220	5537
Microphone	NTI Audio	M2230	8636
Acoustic calibrator	Norsonic AS	Nor 1251	31522

5.4 Measurement of Background and Residual Sound Levels

With reference to the measurements of the background and residual sound levels, BS 4142:2014 does not specify a particular time period over which measurements should be made. Despite this, at subclause 8.1.3 the following is stated "*Ensure the measurement time interval is sufficient to obtain a representative value of the background sound level for the period of interest.*" It is suggested that the measurement duration should be not normally be less than 15 minutes in total. With this in mind, the adopted measurement duration for all of the surveys was 2 hours, comprising 24 consecutive 5 minute measurements in each location.

In the measurement position the sound level meter was tripod mounted such that the microphone was approximately 1.3 metres above ground level and positioned such that it was at least 2 metres from any large and potentially reflecting surfaces and the fast time weighting was engaged.

6.0 Noise Survey Results

A qualitative description of the existing noise climate throughout the various measurement periods is contained in the following paragraphs.

6.1 Qualitative Assessment, Saturday 16th December 2023

In essence, the existing noise climate in both measurement positions was regarded as being characteristic of a sub-urban type environment that was largely dominated by road traffic on Carr Lane. During the measurement period the number of vehicles on Carr Lane remained reasonably steady, however Carr Lane was not regarded as being particularly busy. The majority of the vehicles on Carr Lane comprised private cars and

taxis, although light and some heavy goods vehicles were also noted during the period. Some vehicles were noted on Lewisham Road, but these were comparatively small in number.

Additional noise sources noted during the period included the sound of small groups of people congregating outside the Co-Op store, cars pulling up outside the Co-Op store, people talking as they walked along Carr Lane including a number of dog walkers and towards the end of the period regular raised voices could be heard. With respect to the raised voices, these appeared to emanate from the South West and it was thought that they may have arisen from patrons congregating outside The Commercial and The Shoulder of Mutton public houses.

6.2 Qualitative Assessment, Sunday 17th December 2023

The noise climate at this time was similar to that noted on the Saturday evening, although the number of vehicles using Carr Lane was noticeably reduced. Despite this a slight increase in the number of vehicles using Lewisham Road, including stopping outside the Co-Op store was noticed. Again, the majority of the vehicles comprised private cars and taxis.

Additional contributory noise sources included the sound of pedestrians talking as they walked along Lewisham Road and some noise from the surrounding houses

6.3 Qualitative Assessment, Friday 5th January 2024

Again, the principal contributor to the noise climate at this time was road traffic on Carr Lane and Lewisham Road, which remained relatively well used throughout the period. Private cars were again the dominant class of vehicle but vans and motorcycles were also well represented during this period. Overall the volume of traffic during this period was higher than was the case at any of the other measurement periods.

Additional contributory noise sources included the sound of pedestrians talking as they walked along Lewisham Road and occasional groups of people talking outside the Co-Op store.

6.4 Qualitative Assessment, Tuesday 9th January 2024

Overall, the existing noise climate during this period was very similar to that which was experienced on the evening of Sunday 17th December.

6.5 Basic Results

By virtue of the significant amounts of measured noise data collected from the existing noise climate surveys, tables 3 - 6 and graphs 1 - 4 overleaf contain summaries of the noise data from the measurement position. Full measured noise data are presented in tabular form in Appendix 1.

Table 3. Measured noise level summary, Saturday 16th December 2023, 20:00 - 22:00 hours

	$L_{Aeq, 5 \text{ mins}}$	$L_{Amax, 5 \text{ mins}}$	$L_{A10, 5 \text{ mins}}$	$L_{A90, 5 \text{ mins}}$
Standard deviation	1.82	4.11	2.05	0.91
Mean (log)	52	68	53	45
Modal value	52	62	54	44

Table 4. Measured noise level summary, Sunday 17th December 2023, 20:00 - 22:00 hours

	$L_{Aeq, 5 \text{ mins}}$	$L_{Amax, 5 \text{ mins}}$	$L_{A10, 5 \text{ mins}}$	$L_{A90, 5 \text{ mins}}$
Standard deviation	1.88	4.07	2.32	0.56
Mean (log)	48	65	50	40
Modal value	47	59	50	40

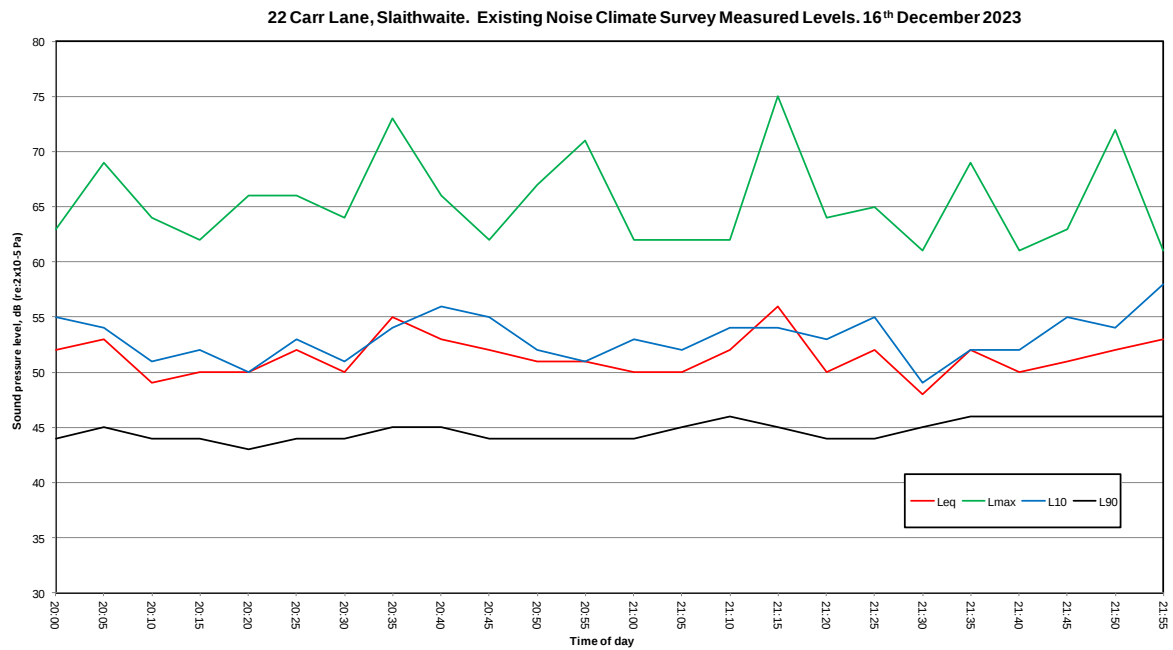
Table 5. Measured noise level summary, Friday 5th January 2024, 14:00 - 16:00 hours

	$L_{Aeq, 5 \text{ mins}}$	$L_{Amax, 5 \text{ mins}}$	$L_{A10, 5 \text{ mins}}$	$L_{A90, 5 \text{ mins}}$
Standard deviation	1.68	3.28	2.10	1.53
Mean (log)	57	74	59	48
Modal value	57	73	59	47

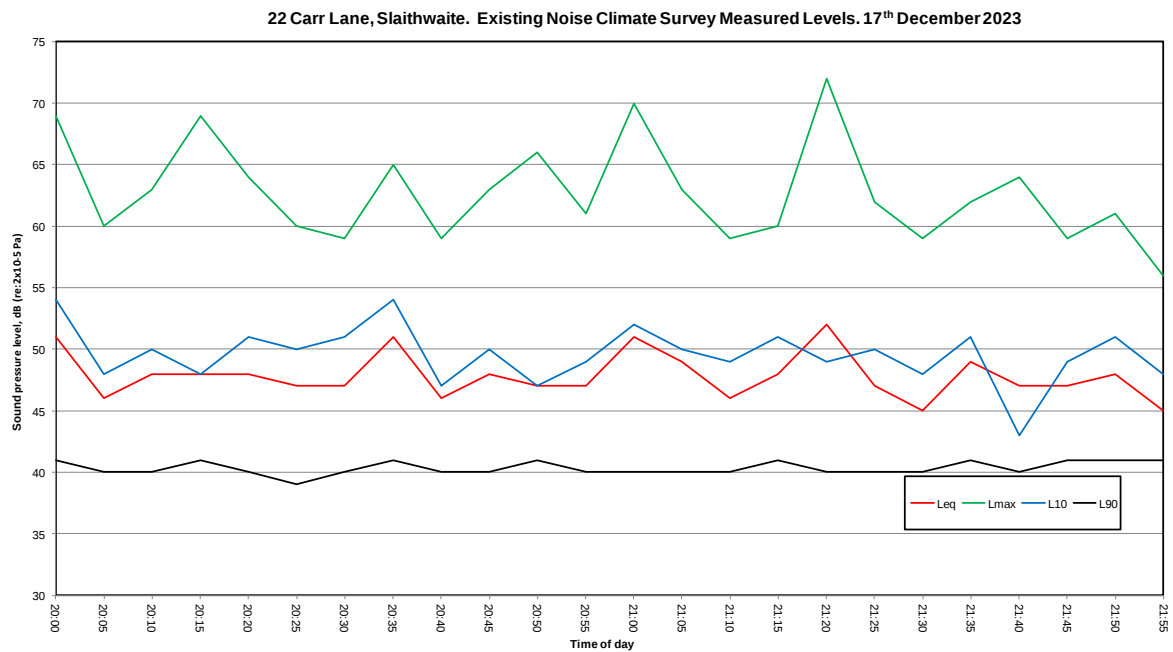
Table 6. Measured noise level summary, Tuesday 9th January 2024, 20:00 - 22:00 hours

	$L_{Aeq, 5 \text{ mins}}$	$L_{Amax, 5 \text{ mins}}$	$L_{A10, 5 \text{ mins}}$	$L_{A90, 5 \text{ mins}}$
Standard deviation	2.36	5.33	2.10	0.83
Mean (log)	50	70	52	41
Modal value	47	62	51	41

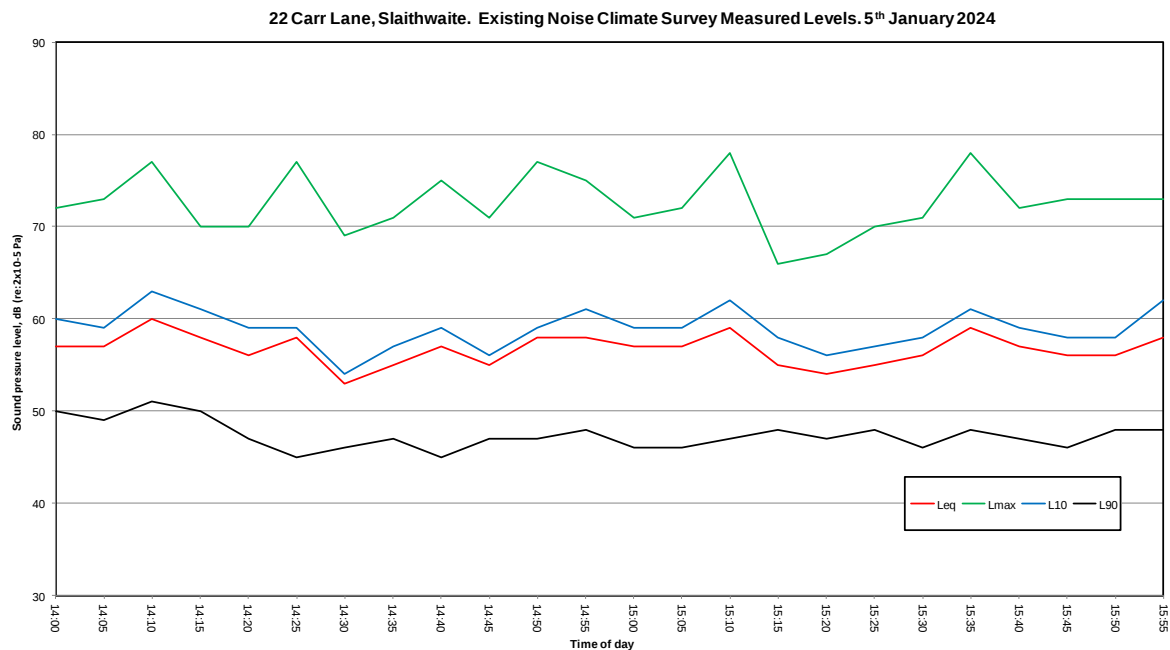
Graph 1. Existing noise climate measured levels, Saturday 16th December 2023, 20:00 - 22:00 hours



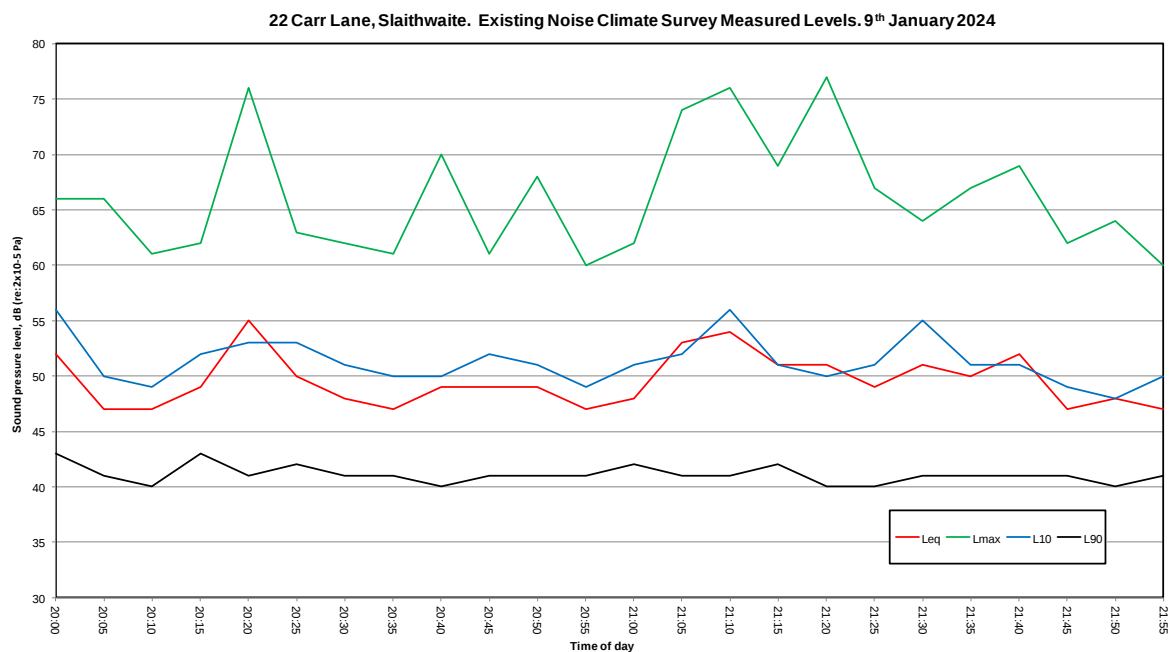
Graph 2. Existing noise climate measured levels, Sunday 17th December 2023, 20:00 - 22:00 hours



Graph 3. Existing noise climate measured levels, Friday 5th January 2024, 14:00 - 16:00 hours



Graph 4. Existing noise climate measured levels, Tuesday 9th January 2024, 20:00 - 22:00 hours



The sound levels presented in the above tables and graphs indicate that the existing noise climate was relatively steady throughout the measurement positions, although the daytime levels were noticeably higher than the evening levels, which was a function of the increased volume of traffic on Carr Lane at this time.

7.0 Assessment of the Potential Sound Emission from the Proposed Restaurant

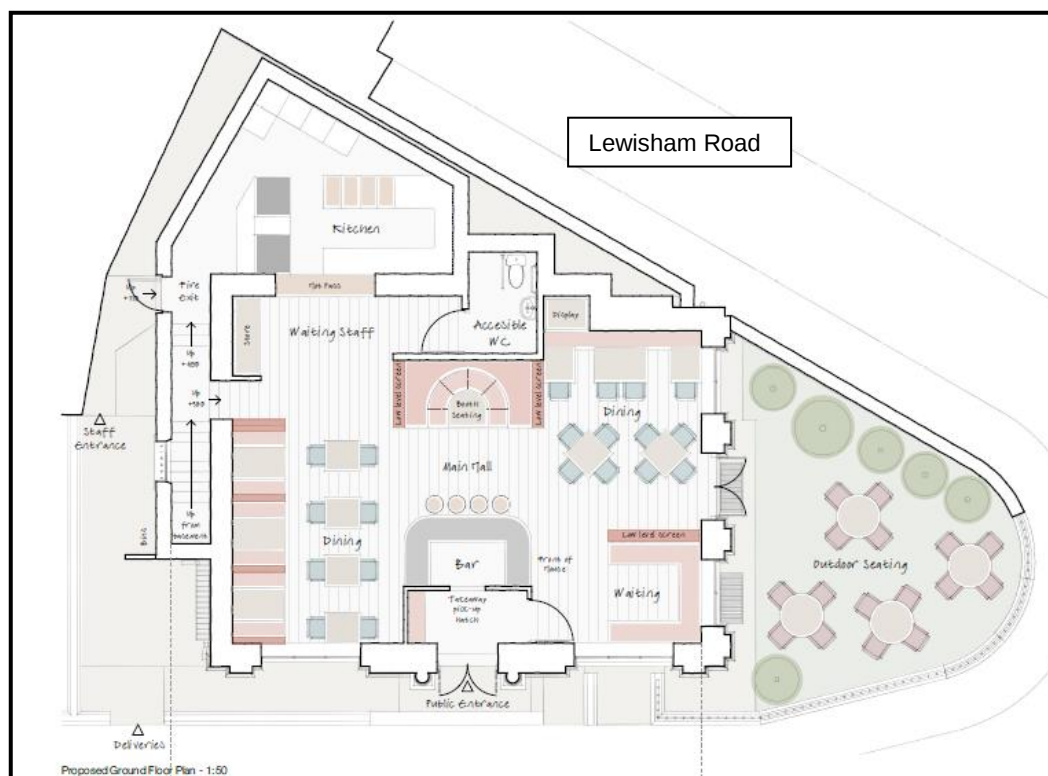
With reference to the proposed restaurant, it is likely that the principal potential noise sources that could affect the existing noise climate of the nearby noise sensitive premises, would be: the break-out of noise from the internal spaces, the emission of noise from the small external seating area to the East of the proposed restaurant and the emission of noise from the external roof mounted extraction plant and equipment associated with the preparation of food.

7.1 Assessment of Potential Break-out Noise from Within the Proposed Restaurant

An evaluation of the potential emission of sound from the from the proposed restaurant will be undertaken with respect to the likely internal noise levels that would prevail during a normal but busy trading period. The level of noise break-out from the restaurant will depend on a number of contributory elements, but the principal contributory elements will be the level of sound insulation that is provided by the existing building structure and the level of noise generated by the clientele.

With this in mind an assessment of the venue was conducted to establish the likely sound insulation that may be provided by the main structural and façade elements. The original building is believed to date from the mid to late nineteenth century and is of the robust type of construction that was typical of commercial buildings from the time. The proposed internal layout of the restaurant is detailed in figure 3 below and the main building envelope structural details described below have been assumed for the purposes of the subsequent calculations.

Figure 3. Internal layout of the proposed restaurant



External walls

The external walls of the existing building are of solid stone construction in the region of 450mm thick, which represents a very robust construction. Laboratory test values for a similar but slightly less robust construction indicate that this construction should provide an overall sound insulation of around R_w 62dB, with the octave band sound insulation values being as detailed in table 7 below.

Table 7. External Solid Wall, ca. 450mm thick, Octave Band Sound Insulation Values

OBCF, Hz*	125	250	500	1k	2k	4k	Overall, R_w dB
Sound Insulation, dB	50	56	63	68	72	71	67

* Octave Band Centre Frequency

Glazing

The existing glazing comprises single pane glazing, typically 6mm thick, contained within wooden frames. Laboratory test data obtained from Pilkington indicates that glazing of this type should provide a sound insulation value of around 31dB R_w with typical octave band sound insulation performance values being as detailed in table 8 below.

Table 8. Glazing, octave band sound insulation values

OBCF, Hz*	125	250	500	1k	2k	4k	Overall, R_w dB
Existing 6mm glazing	18	23	30	35	27	32	31 (-3)

* Octave Band Centre Frequency

Roof/ceiling Structure

The existing roof structure is believed to be of substantial timber construction with an ornate lath and plaster ceiling below (photograph 7 overleaf). Although sound insulation data for this exact roof/ceiling construction was unavailable, published sound insulation data for a similar roof/ceiling structure suggests the structure would provide a sound insulation value around 50dB. The octave band sound insulation values for the roof/ceiling structure are detailed in table 9 below.

Table 9. Octave band sound insulation values, roof/ceiling structure

OBCF, Hz*	125	250	500	1k	2k	4k	Overall, R_w dB
Roof/ceiling construction	30	39	43	58	56	55	50

* Octave Band Centre Frequency

Photograph 7. Existing ornate lath and plaster ceiling



7.2 Potential Sound Transmission - Indoors to Outdoors

In order to assess the potential break-out and transmission of noise from the internal space of the proposed restaurant, a noise modelling exercise has been undertaken to predict the likely noise levels at the noise sensitive locations, namely: 3 and 5 Lewisham Road. The modelling of the noise source propagation was undertaken using Cadna A software, produced by Datakustik. The Cadna A modelling software which calculates noise propagation based on the processes of *ISO 9613: Acoustics – Attenuation of sound during propagation outdoors*.

In general terms, the internally generated noise spreads out to the internal surfaces of the walls and the roof. It then passes through the various elements to become external sources. From here, the various noise elements spread out to the noise sensitive locations. With reference to the propagation calculations, the software permits the effect of reflections and screening effects (from the intervening structures, buildings etc.), which would occur in what is a relatively complex propagation environment, to be taken into account.

In essence the noise emission and propagation calculations follow the following basic pattern. The calculations start with the internal noise level, which in this case are based on measurements made within the existing restaurant at 7 Church Street in Slaithwaite. The measurements of the likely noise levels were obtained between 19:30 - 19:40 hours on Thursday 21st December 2023, when the existing restaurant was very busy with lively pre-Christmas parties. The measurements were spatial average measurements within the venue and the measured sound levels, which will be utilised in the noise modelling procedure, are presented in table 10 overleaf.

Table 10. Measured internal restaurant levels, Rumpus, 7 Church Street, 21st December 2023

OBCF, Hz*	63	125	250	500	1k	2k	4k	8k	Overall, dB(A)
Busy Restaurant, L_{Aeq} , 10 minutes	65	70	70	78	72	68	61	51	78

For the purposes of the model it has been assumed that the noise levels presented in table 10 below would prevail at the internal surfaces of the proposed restaurant and these levels would be assumed to be evenly spread over all internal surfaces.

The next stage in the process is to factor in the sound insulating properties of the building elements. The sound insulation of the various elements of the former Lloyds Bank building are detailed in section 7.1 above. Finally, a correction of -6 dB is applied to account for the transition from the internal (reverberant) to external (free field) environments. The result is an equivalent sound power level emitted from the various building elements to the outside world, used as external sources as described below.

The Cadna A modelling software, as with all other similar software, is reliant on all the inputs and assumptions. With reference to the assumptions made in the modelling process, the following key inputs and assumptions were applied during the propagation modelling:

- The ground is mainly reflective, with a coefficient of 0.25 assumed.
- Calculations are based on two orders of reflections.
- The site building and the surrounding buildings are assumed to be mainly reflective (0.5 dB loss on reflection assumed).
- The just-outside levels of the various building elements are entered into the CadnaA model as area sources.
- The software then calculates the noise at nearby noise-sensitive properties. The predicted façade noise levels are calculated for all floors and the software automatically displays the noisiest floor level.

Employing all the previously stages and stated assumptions, it is possible to provide an indication of the likely noise break-out noise levels from the proposed restaurant to the nearest noise sensitive dwellings on Lewisham Road. Two scenarios will be investigated with reference to potential break-out of noise from the interior of the proposed restaurant, namely: the doors on the North Eastern elevation of the building will be maintained in an open position and the doors on the North Eastern elevation will be maintained in the closed position. Figures 4 and 5 overleaf detail the results of the calculations relating to the two scenarios.

Figure 4. Internal noise break-out from the proposed restaurant, doors open

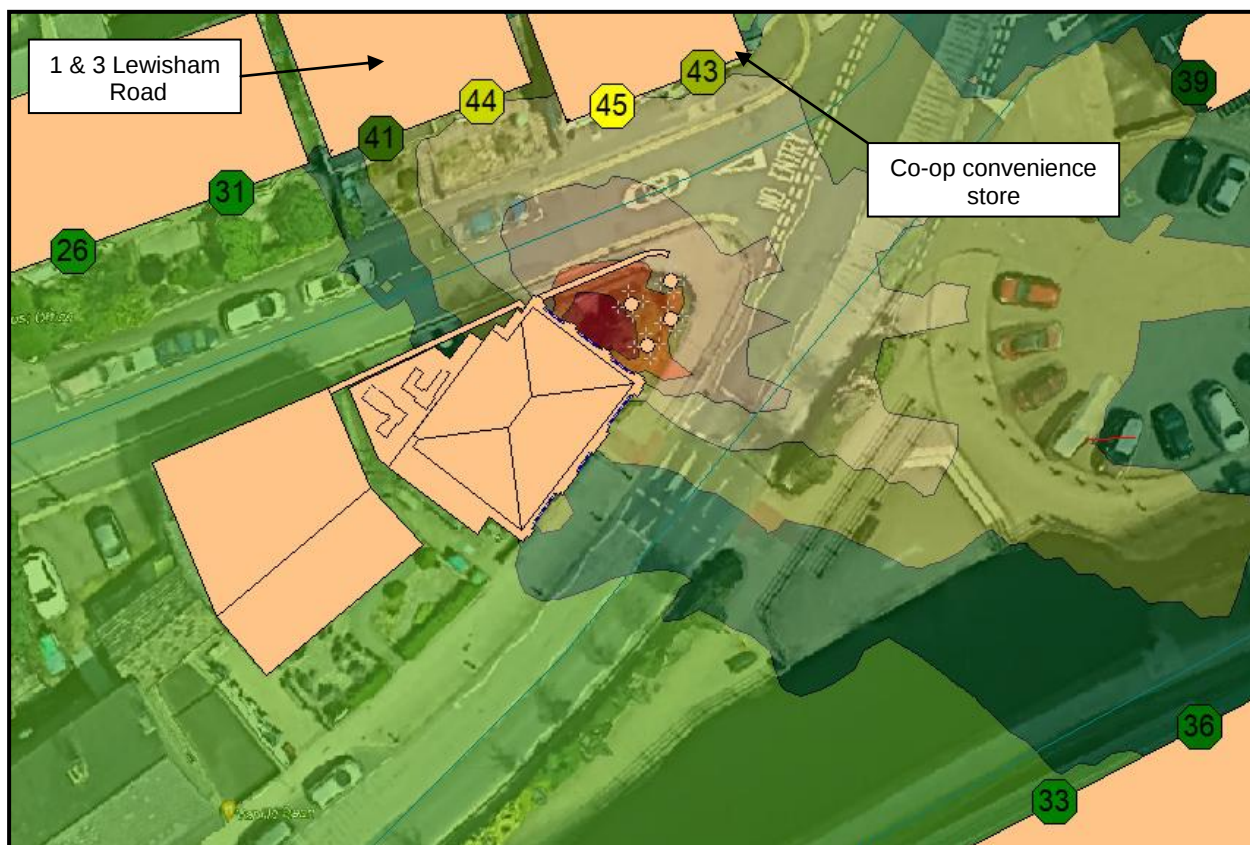


Figure 5. Internal noise break-out from the proposed restaurant, doors closed



As can be seen from figures 4 and 5 above, the resulting noise levels at the noise sensitive locations on Lewisham Road are considerably lower with the doors closed than with the doors open.

The calculated noise break-out levels will be compared with the lowest measured L_{A90} noise levels from both the daytime and evening measurements periods. The lowest measured daytime L_{A90} noise level of 45dB L_{Aeq} occurred between 14:25 - 14:30 hours on the afternoon of Friday 5th January 2024 and the lowest measured evening L_{A90} noise level of 39dB L_{A90} occurred between 20:25 - 20:30 hours on the evening of Sunday 17th December 2023. The comparisons are summarised in table 11 below.

Table 11. Proposed restaurant break-out noise levels to 1 Lewisham Road

Calculated restaurant break-out noise level, dB		Lowest measured L_{A90} level, afternoon	Lowest measured L_{A90} level, evening
Doors open	44	45	39
Doors closed	22	45	39

Table 11 reveals that even with the doors open, the calculated maximum break-out noise levels from the proposed restaurant would not exceed the lowest measured afternoon L_{A90} levels from the existing noise climate surveys, but would exceed by 5dB the lowest L_{A90} level from later on the Sunday evening. Turning to the situation where the doors on the North Eastern elevation are maintained in the closed position, the calculated maximum break-out noise levels from the proposed restaurant would be comfortably below the lowest measured L_{A90} levels for both the afternoon and evening periods.

As a consequence it is suggested that every effort should be made to ensure that the doors on the North Eastern elevation of the existing building are maintained in the closed position during the evening period. This being the case, it can be seen that the potential noise break-out from the restaurant should not have a prejudicial effect on the existing noise climate on Lewisham Road.

7.3 Potential Sound Transmission - Outdoor Seating Area

The proposal includes for a small outdoor seating area to the North East of the existing building. The scheme drawings, reproduced as figure 6 overleaf, indicate that this area would comprise four tables each with four chairs.

For the purposes of the calculations to assess the likely level of noise transmission to the noise sensitive locations on Lewisham Road, it has been assumed that the potential noise emission from the external seating area will be more akin to an external dining area than a beer garden type environment. It is also the case that as the external seating area serves a restaurant, the potential for conversation will be partially moderated by the fact that food will be consumed and as such it is thought very unlikely that the all the diners sitting outside will be able to talk at the same time.

In order to assess the potential noise transmission from the external seating area, the following assumptions have been made.

- The ground is mainly reflective, with a coefficient of 0.25 assumed.
- Calculations are based on two orders of reflections.
- The site building and the surrounding buildings are assumed to be mainly reflective (0.5 dB loss on reflection assumed).
- A maximum of 16 diners would be expected to be in the outside seating area at any one time.
- The individual diners are represented by the tallow crosses on figure 6 below.
- Conversation between the diners will be based on four people per table talking intermittently between eating and as such it has been assumed that this would be the equivalent to one person per table talking constantly. (This assumption has provided and 'accurate' representation of the situation in previous assessments).

Figure 6. Location of the external seating area



In this case the calculated noise transmission from the proposed external seating area will be compared with the lowest measured L_{Aeq} noise levels from both the daytime and evening measurements periods. In this case the L_{Aeq} levels have been selected as it is suggested that this parameter better reflects what is likely to be a more transient and variable noise source level.

The lowest measured daytime L_{Aeq} noise level of 53dB L_{Aeq} occurred between 14:30 - 14:35 hours on the afternoon of Friday 5th January 2024 and the lowest measured evening L_{Aeq} noise level of 45dB L_{Aeq} occurred between 21:30 - 21:35 hours on the evening of Sunday 17th December 2023. The comparison of the calculated noise level from the external seating area at 1 Lewisham Road and the lowest measured L_{Aeq} levels from the noise surveys are summarised in table 12 overleaf.

Table 12. Proposed external dining area noise transmission levels to 1 Lewisham Road

Calculated external dining area noise transmission level, dB	Lowest measured L_{Aeq} level, afternoon	Lowest measured L_{Aeq} level, evening
37	53	45

Table 12 reveals that the calculated maximum noise transmission level from the outside dining area would not exceed the lowest measured afternoon or evening L_{Aeq} levels from the existing noise climate surveys. It is also the case that the calculated maximum noise transmission from the outdoor dining area would also not exceed the lowest measured L_{A90} levels detailed in table 12 above. As a consequence it is suggested that the potential noise transmission from the outdoor dining area should not have a prejudicial effect on the existing noise climate on Lewisham Road.

8.0 Potential Sound Emission from the External Air Handling Equipment

Since issuing the original version of this report in February of this year, further refinements have been made to the extraction equipment that will serve both the griddle and fryer areas. As before, the ductwork serving both systems will pass through the ceiling of the proposed restaurant on to the rear flat roof area of the proposed restaurant, with the extraction equipment discharging vertically and the supply air also being drawn in vertically. It is understood that these items will be the only external plant or equipment associated with the proposed restaurant.

As the external plant has not been installed or commissioned, it was not possible to make direct measurements of the noise emission from either of the systems. Consequently, the likely noise emission from the extraction and supply fans will be calculated from information provided by the designers and suppliers.

Schematic diagrams of the proposed installation (revision I), issued by HMA Ventilation Ltd of County Durham, are reproduced in figures 7 and 8 overleaf. The schematic highlights that the extraction and supply equipment will be of the Helios box type fan units. The two units will be of slightly different design and airflow volumes, with the in-duct sound power levels (L_w) for the two systems being as detailed in table 13 below.

Table 13. Kitchens extraction and supply system fans, in-duct sound power levels (manufacturer supplied data)

OBCF, Hz*	125	250	500	1k	2k	4k	8K	Overall in-duct, L_{wA} dB
Supply: (Helios ALB EC 80/50 WW)	81	82	80	81	79	76	73	86
Extract: (GBD EC 560 (cent))	62	71	76	77	72	67	59	81

Figure 7. Location of the supplementary roof mounted supply and extraction equipment (revision I)

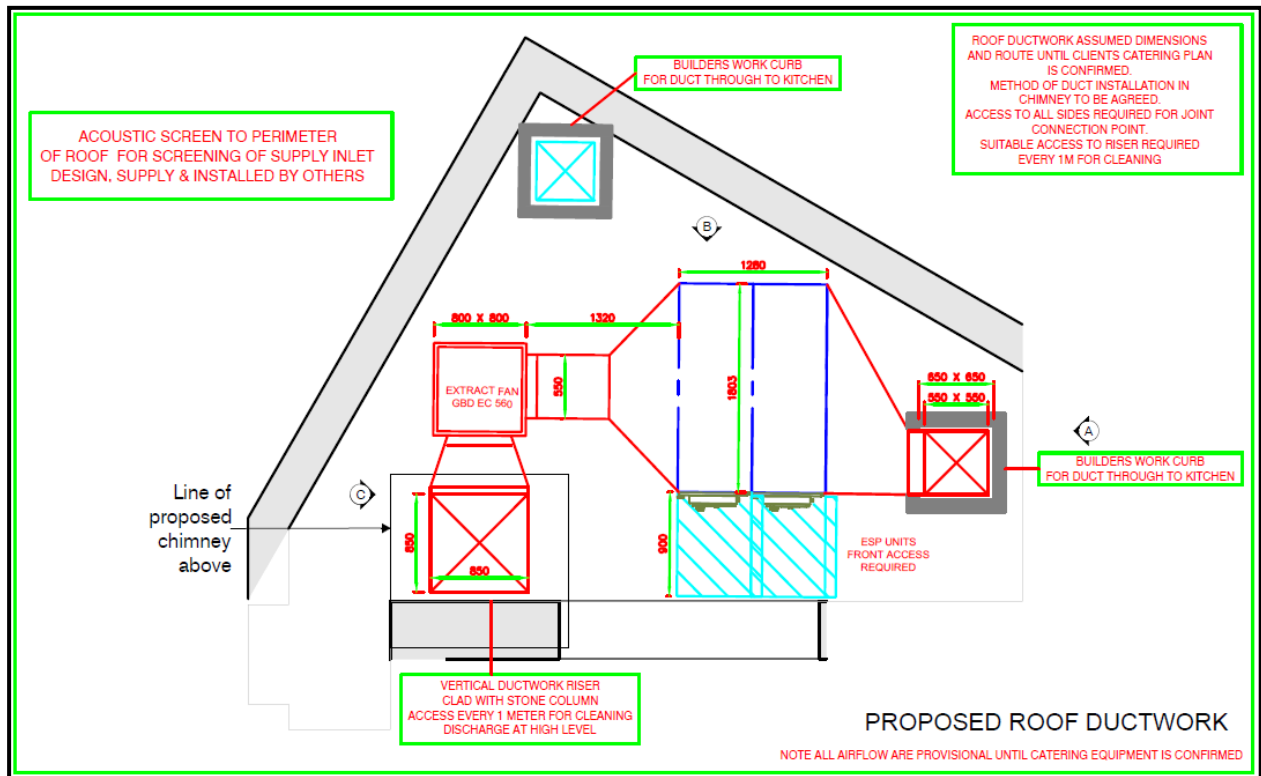
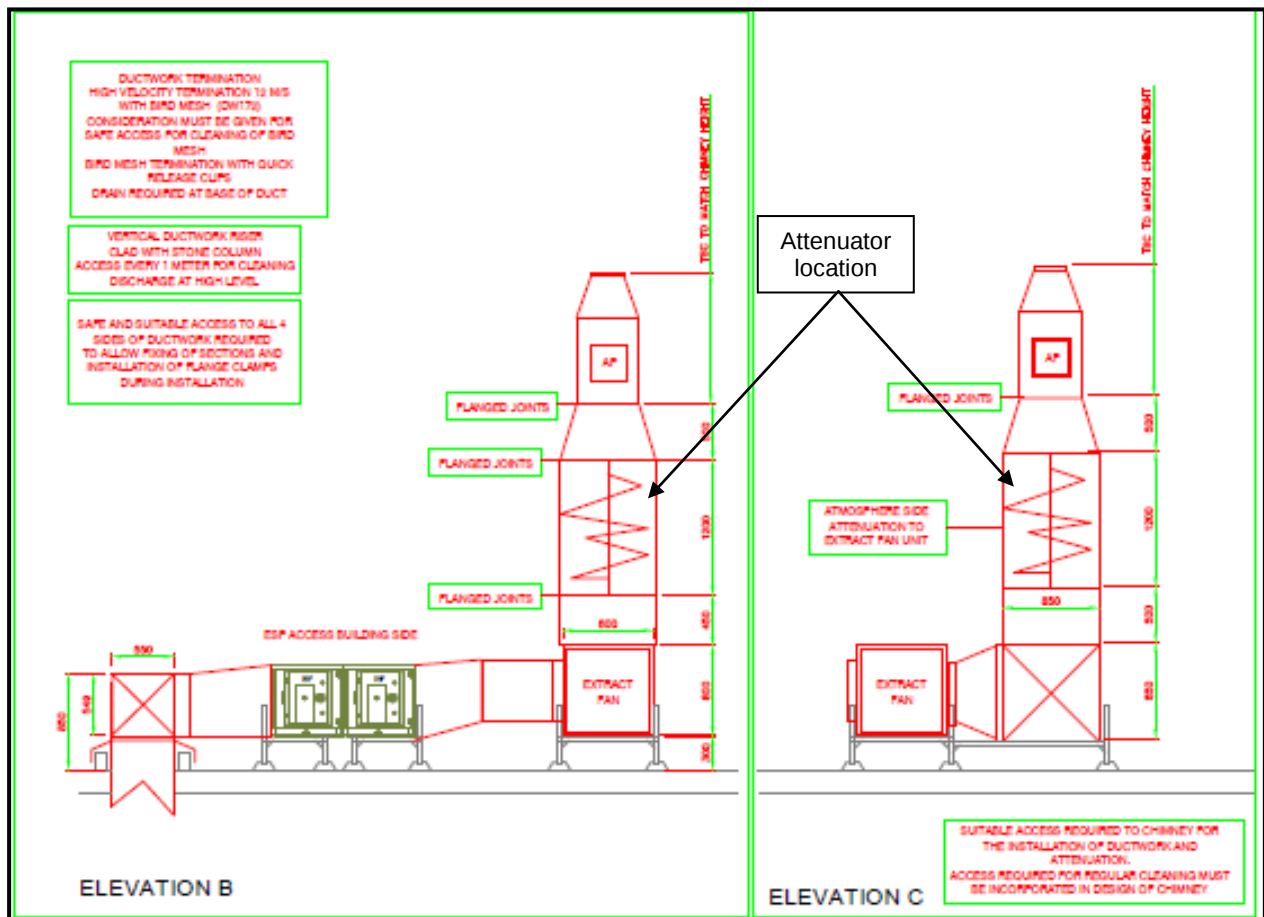


Figure 8. Location of the attenuator within the vertical exhaust flue (revision I)



As can be seen from the published data, summarised in table 13 above, the noise emission from both the supply and extraction fans is relatively broadband in character.

The current version of the proposed installation detailed in figures 7 and 8 above, incorporates a 1200mm long attenuator of the Allaway Acoustics SP/SL type incorporating a Melonex liner, which will be inserted into the vertical element of the extraction flue. The published sound attenuation values for the selected attenuator are as detailed in table 14 below.

Table 14. Allaway Acoustics model SP/SL attenuator performance (1200mm long)

OBCF, Hz*	63	125	250	500	1k	2k	4k	8K
Attenuation performnce, dB	4	10	17	30	39	29	25	16

In addition to the extraction ductwork, the supply cowl is located on the deck of the rear flat roof section, and extends to a maximum height of 700mm above the flat roof section. This element will also emit sound energy that has the potential to disturb the nearby residents on Lewisham Road. In order to minimise the transmission of sound energy from the supply intake, it is proposed to construct a barrier around the rear flat roof plant area to break the transmission line to the nearby houses.

The extent of this barrier is detailed on figure 8 overleaf and to be effective the barrier must be imperforate, be fabricated from material that has a mass of at least 10 - 15kg/m² and be at least 1.2 metres in height. In this case a robust close boarded timber fence would have the desired effect, providing it is imperforate.

8.1 Assessment of the Resulting Sound Levels

The potential sound levels that may prevail at the noise sensitive locations on Lewisham Road, resulting from the operation of the external air handling equipment associated with the proposed restaurant, will be assessed with reference to the separation distances between the noise source and the reception points. The closest of the potential reception points to the takeaway food premises would be numbers 3 and 5 Lewisham Road. The approximate separation distances between the roof mounted supply and extraction equipment and these noise sensitive locations would be around 14 metres at the closest point. As these premises are the closest to the proposed restaurant, they may be regarded as the worst case acoustically with reference to the potential noise emission from the external plant and equipment.

As direct measurements of the operation of the supply and extraction air handling equipment could not be made, calculations will be undertaken using the in-duct sound power levels provided by the suppliers as detailed in table 13 above. The in-duct sound power level is then corrected according to the following principles:

- Straight duct losses. As sound passes along the duct, it loses a small amount of energy. The degree of loss depends on the duct profile, be this circular or rectangular, its cross-sectional dimensions and its length.
- Losses due to bends. Bends cause a small loss and this depends again on the duct profile and cross-sectional dimensions, as well as the type of bend be they radiused or mitred.

- Losses due to branches. In this case a proportion of the available sound energy will be split between branches and take-offs, related to the relative cross-sectional areas of each branch.
- Other losses, such as attenuators, plenums, filters, etc.
- End reflection. As the sound waves pass along a smooth regular duct shape, it hits a sudden change as it leaves the duct and enters an open space. This causes some of the energy, mainly low frequency, to reflect back up the system and is an effective loss to the sound entering the open area, in this case the room or the outside world. The amount of reflection is mainly related to the cross-sectional shape and dimensions of the termination.
- Losses due to the inclusion of any attenuators into the duct work.

By applying these 'corrections' combined with the reduction in the extraction flue resulting from the incorporation of the attenuator and the beneficial effects of the barrier surrounding the flat roof area, the likely sound pressure levels resulting from the operation of the supply and extract air handling equipment at the two nearest noise sensitive premises can be calculated. For the purposes of the calculations it has been assumed that both the supply and extract openings/terminations will represent point noise sources and that both systems will be operating simultaneously. As simultaneous operation may not always be the case, the following calculations may be regarded as a worst case acoustically. The calculated resulting sound pressure levels at both 3 and 5 Lewisham Road are summarised in table 15 and figure 8 overleaf.

Table 15. Calculated noise levels arising from the operation of the air handling equipment

Reception points	Calculated total air handling equipment noise, dB
3 and 5 Lewisham Road	35

Figure 8. Calculated resulting sound levels resulting from the operation of the extraction and supply equipment, including the beneficial effects of the attenuator and barrier



8.2 BS 4142:2014 Assessment

The calculated resulting sound levels relating to the simultaneous operation of the operation of the supply and extraction air handling units serving the proposed restaurant will be assessed with reference to the principles contained within BS 4142:2014.

As previously stated one feature of BS 4142:2014 relates to the selection of the background noise level and as such the Standard at section 8.1 states "*..the objective is not simply to ascertain a lowest measured background sound level*" and at section 8.1.4 states "*..there is no "single" background sound level as this is a fluctuating parameter. However, the background sound level used for the assessment should be representative of the period being assessed*".

Although BS 4142:2014 states that the objective is "*not simply to ascertain a lowest measured background sound level*", the use of the lowest background sound level does provide a degree of comfort that the resulting assessments represent a worse case. Despite this, it is thought that in this case that the use of the lowest measured background sound level would misrepresent the actual noise climate. As a consequence an alternative measure, the modal value with respect to the background sound levels during the afternoon and evening periods will be adopted. In this case it is suggested that the modal L_{A90} value would be more representative indication of the noise climate over both periods.

To emphasise this point the lowest measured L_{A90} sound level of 45dB during was measured over one, five minute on Friday 5th January 2024, representing around 4% of the total measurement period. Whereas the modal value of 47dB occurred over seven, five minute periods, representing around 29% of the total measurement period. Turning to the evening period, the lowest measured L_{A90} sound level of 39dB was again measured over one, five minute on Sunday 17th December 2023, representing around 4% of the total measurement period. However the modal value of 40dB was measured over 14, five minute periods representing around 58% of the total measurement period.

In order to define the overall rating level reference must be paid to the character correction categories detailed within BS 4142:2014. As stated within section 4.1 above, these corrections may be applied where:

- The emission of sound has characteristics that are neither tonal or impulsive; and/or
- The emission of sound is intermittent or has discernible on/off characteristics.

It must however be remembered that the character corrections are to be applied where they are discernible at the reception point. As the external plant and equipment has not yet been installed a pragmatic view should be applied as to whether the particular character features would be discernible at the reception point and what effect this may have on the recipients. Despite this, the fact that the calculated sound levels resulting from the operation of the external plant, detailed in table 15 above, are below the existing lowest background and ambient levels measured during the various surveys, could suggest that the character corrections would not be applicable in this case. However, the applicability of the various character corrections will be discussed in the following paragraphs.

Starting with tonality, in many cases the emission of noise from correctly installed and maintained supply and extraction fans is not tonal in nature and it is anticipated that this would be the case at the reception point. Indeed the sound emission detailed in table 13 above would tend to support this contention. As a consequence no character correction will be applied with reference to the tonality of the resulting sound at the reception point.

Impulsivity in this context may be regarded as a feature where the sound in question may be regarded as a '*sudden sound*' as perceived at the reception point. This feature relates to the onset of the sound only and not the '*quality*' of the sound in general. In this case it is suggested that the operation of the air handling equipment would be, by its nature, steady and would lack any '*sudden sound*' components. As a result no character correction will be applied with reference to the impulsivity of the resulting sound at the reception point.

Turning to the possibility that the emission of noise from the air handling equipment may be intermittent in nature, it is anticipated that that the units would be operational for the entire duration of food preparation activity in the restaurant kitchen and as such would not have discernible 'on' and 'off' characteristics. As a result no character correction will be applied with reference to the intermittency of the resulting sound at the reception point will be applied.

Finally, the question as to whether the resulting sound at the reception points may possess "*characteristics*" that "*are readily distinctive against the residual acoustic environment*". The previous calculated sound emission levels from the external plant and equipment have been demonstrated to be below the existing lowest background and ambient levels at the reception point. As a result it is suggested that it is unlikely that that emission of sound from the external plant and equipment would be "*readily distinctive against the residual acoustic environment*". As a consequence no character correction for this element will be applied.

Assessments according with the scheme contained within BS 4142:2014 will be undertaken for the nearest noise sensitive receptors at 3 and 5 Lewisham Road, with reference to the emission of sound from the external plant and equipment serving the proposed restaurant. The results of the BS 4142:2014 assessments for both the afternoon and evening noise climates are summarised in tables 16 and 17 below and overleaf.

Table 16. BS4142: 2014 assessment, external plant and equipment sound levels, with reference to 3 and 5 Lewisham Road, afternoon period comparison

	<i>L_p</i> , dB
Calculated specific sound level at noise sensitive location, <i>L_{Aeq}</i>	35
Modal background sound level, <i>L_{A90}</i> , over the period	47
Acoustic feature corrections	0
Rating level	35
Excess of rating over background level	- 12
Assessment result: indicates that the specific sound source would be unlikely to have an adverse impact, depending on context	
Uncertainty of measurement:	see comments below

Table 17. BS4142: 2014 assessment, external plant and equipment sound levels, with reference to 3 and 5 Lewisham Road, evening period comparison

	L_p , dB
Calculated specific sound level at noise sensitive location, L_{Aeq}	35
Modal background sound level, L_{A90} , over the period	40
Acoustic feature corrections	0
Rating level	35
Excess of rating over background level	-5
Assessment result: indicates that the specific sound source would be unlikely to have an adverse impact, depending on context	
Uncertainty of measurement:	see comments below

With reference to the daytime comparison presented within table 16 above, it can be seen that in both the afternoon and evening period comparisons, the BS 4142:2014 assessment indicates that the external plant sound emission would be '*unlikely to have an adverse impact*' at the reception point. Turning to the requirement contained within the Kirklees Council "*Noise Design Advice*", it can be seen that the resulting rating level would not exceed the requirement that "*it is recommended that during normal daytime hours (07:00 to 23:00 hours), the BS4142 rating level, ... should be 5dB below the background (L_{A90})*".

The requirement to consider the "*context*" of the situation in conjunction with the overall rating levels is an essential part of the BS 4142:2014 assessment procedure. Consequently, the assessment outcome must be considered in the light of the '*context*' of the calculated noise emission from the air handling plant.

The introduction of the external air handling units serving the proposed restaurant would represent a new source of slightly different character, according to the qualitative assessments above, to that which currently exists in that part of Slaithwaite. Despite this, the fact that the above assessments suggest that the specific sound levels would be below the existing background and ambient sound levels at the nearest sensitive receptors, would suggest that it is unlikely that the emission of noise from the air handling equipment would lead to a deterioration in the existing noise climate at the nearest of the houses on Lewisham Road.

8.3 Discussion of Uncertainty

The assessment procedure contained within BS 4142:2014 requires the assessor to "*Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty*".

Starting with the measurements of the background and residual sound levels, these measurements were made at times that typically represent the quietest parts of the day and the week, particularly with reference to the measurements made on the Sunday. This being the case it is suggested that the measured background and residual sound

levels were regarded as being representative of the noise climate in the immediate vicinity of the takeaway food premises.

Although BS 4142:2014 does not state what would be a representative background sound level, it also does not suggest that it should be lowest measured level, and in this respect practice varies widely. Despite this the approach adopted in this assessment was to utilise the lowest measured value with respect to the background sound levels. The use of the lowest measured background sound levels would ensure that the subsequent assessments were worst case assessments.

Varying meteorological conditions are unlikely to have a significant impact on the assessments as, in general the conditions during the noise measurements accorded with those stated in BS 4142:2014 and so this element may be regarded as being having a minimal effect on the obtained results.

9.0 **Conclusion**

The noise surveys have highlighted that the existing noise climate in the vicinity of the proposed restaurant was characteristic of a sub-urban type environment that was largely dominated by road traffic on Carr Lane. During the measurement period Carr Lane was well used but not regarded as being busy, although the number of vehicles on Carr Lane remained reasonably steady. The majority of the vehicles on Carr Lane comprised private cars and taxis, although light and some heavy goods vehicles were also noted during the period. Some vehicles were noted on Lewisham Road, but these were comparatively small in number.

Assessments of the potential noise emission from the proposed restaurant were undertaken to investigate the potential effect that these may have on the existing noise climate of the nearest noise sensitive locations on Lewisham Road. The results of the assessment have indicated that the noise break-out from the proposed restaurant and the external seating area would not have a detrimental effect on the existing noise in the vicinity of the dwellings on Lewisham Road.

Turning to the operation of the external plant and equipment serving the proposed restaurant, assessments of the potential noise emission have been undertaken according to the principles contained within British Standard (BS) 4142:2014. Applying these principles to the emission of noise from the air handling equipment it has been demonstrated that the calculated rating level at the two nearest noise sensitive locations would be *'unlikely to have an adverse impact'* at the reception point. With reference to the requirement contained within the Kirklees Council *"Noise Design Advice"*, it can be seen that the resulting rating level would not exceed the requirement that *"it is recommended that during normal daytime hours (07:00 to 23:00 hours), the BS4142 rating level, measured over 1 hour, should be 5dB below the background (L_{A90})"*.

Consequently, the above assessments highlight that there is no reason why the proposed restaurant, including the suggested control and attenuation measures, cannot coexist with the existing residential dwellings on Lewisham Road without detrimentally affecting the existing noise climate.

Appendix 1. Existing Noise Climate Survey ResultsSaturday 16th December 2023

Time	L_{Aeq} 5 mins	L_{Amax} , 5 mins	L_{A10} , 5 mins	L_{A90} , 5 mins
20:00	52	63	55	44
20:05	53	69	54	45
20:10	49	64	51	44
20:15	50	62	52	44
20:20	50	66	50	43
20:25	52	66	53	44
20:30	50	64	51	44
20:35	55	73	54	45
20:40	53	66	56	45
20:45	52	62	55	44
20:50	51	67	52	44
20:55	51	71	51	44
21:00	50	62	53	44
21:05	50	62	52	45
21:10	52	62	54	46
21:15	56	75	54	45
21:20	50	64	53	44
21:25	52	65	55	44
21:30	48	61	49	45
21:35	52	69	52	46
21:40	50	61	52	46
21:45	51	63	55	46
21:50	52	72	54	46
21:55	53	61	58	46

Sunday 17th December 2023

Time	L_{Aeq} 5 mins	L_{Amax} , 5 mins	L_{A10} , 5 mins	L_{A90} , 5 mins
20:00	51	69	54	41
20:05	46	60	48	40
20:10	48	63	50	40
20:15	48	69	48	41
20:20	48	64	51	40
20:25	47	60	50	39
20:30	47	59	51	40
20:35	51	65	54	41
20:40	46	59	47	40
20:45	48	63	50	40
20:50	47	66	47	41
20:55	47	61	49	40
21:00	51	70	52	40
21:05	49	63	50	40
21:10	46	59	49	40
21:15	48	60	51	41
21:20	52	72	49	40
21:25	47	62	50	40
21:30	45	59	48	40
21:35	49	62	51	41
21:40	47	64	43	40
21:45	47	59	49	41
21:50	48	61	51	41
21:55	45	56	48	41

Friday 5th January 2024

Time	L_{Aeq} 5 mins	L_{Amax} , 5 mins	L_{A10} , 5 mins	L_{A90} , 5 mins
14:00	57	72	60	50
14:05	57	73	59	49
14:10	60	77	63	51
14:15	58	70	61	50
14:20	56	70	59	47
14:25	58	77	59	45
14:30	53	69	54	46
14:35	55	71	57	47
14:40	57	75	59	45
14:45	55	71	56	47
14:50	58	77	59	47
14:55	58	75	61	48
15:00	57	71	59	46
15:05	57	72	59	46
15:10	59	78	62	47
15:15	55	66	58	48
15:20	54	67	56	47
15:25	55	70	57	48
15:30	56	71	58	46
15:35	59	78	61	48
15:40	57	72	59	47
15:45	56	73	58	46
15:50	56	73	58	48
15:55	58	73	62	48

Tuesday 9th January 2024

Time	L_{Aeq} 5 mins	L_{Amax} , 5 mins	L_{A10} , 5 mins	L_{A90} , 5 mins
20:00	52	66	56	43
20:05	47	66	50	41
20:10	47	61	49	40
20:15	49	62	52	43
20:20	55	76	53	41
20:25	50	63	53	42
20:30	48	62	51	41
20:35	47	61	50	41
20:40	49	70	50	40
20:45	49	61	52	41
20:50	49	68	51	41
20:55	47	60	49	41
21:00	48	62	51	42
21:05	53	74	52	41
21:10	54	76	56	41
21:15	51	69	51	42
21:20	51	77	50	40
21:25	49	67	51	40
21:30	51	64	55	41
21:35	50	67	51	41
21:40	52	69	51	41
21:45	47	62	49	41
21:50	48	64	48	40
21:55	47	60	50	41