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Ref: P5504/R01/PJK 15 April 2025

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| To: | Ralph Taylor | of: | Paul Butler Associates |
| Cc: | As per email distribution list | of: | |

**Irish Bar, 700 Wilmslow Road, Didsbury**

**Noise Impact Assessment for Planning Purposes**

# 1.0 INTRODUCTION

1.1 Acoustic and Engineering Consultants Limited (AEC) has been instructed by Kennedy Hospitality Ltd to assess the potential impact of noise breaking-out from the proposed Irish Bar (referred to as 'Venue' throughout the rest of this report) located at 700 Wilmslow Road, Didsbury, on nearby residential properties.

1.2 The report presents an assessment of the proposals and considers the following elements:

- Noise break-out from inside the venue, including from amplified music
- Noise from external seating areas
- Noise emitted from external building services plant

1.3 Acoustic terminology is used throughout this report and is discussed in brief in Appendix A at the back of this report.

# 2.0 SITE DESCRIPTION & DEVELOPMENT LAYOUT

## Site Description

2.1 The proposed development scheme includes the refurbishment of a former restaurant into a public house. The site is a three storey property, with apartments on the first and second floors.

2.2 The site is located on a busy junction of Barlow Moor Road and Wilmslow Road within Didsbury village centre, as shown on Figure 2.1. There are a number of pubs and restaurant in the local area. These venues also include the playing of amplified music and some have outdoor seating areas.

2.3 It is understood that the venue already has planning for the playing of live music and will have the following opening hours:

- Sunday to Thursday – 1100 to 0000h
- Friday and Saturday – 1000 to 0100h

2.4 As part of the scheme, the existing pergola at the front of the property will be removed and replaced with an external seating area.

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**Figure 2.1 – Site Location**

**Imagery @2025 Google, Imagery @2025 Infoterra Ltd & Bluesky, Maxar Technologies, The Geoinformation Group, Map Data @2025**

2.5 The apartments on the first and second floor were developed in 2009 and as part of the planning conditions placed on the development, a scheme was to be submitted to Manchester City Council outlining how noise ingress from external sources was to be controlled to a suitable level. The exact details of the glazing and ventilation strategy to meet the internal noise levels is not available on the planning portal.

2.6 The drawings for the apartments show that there are no bedrooms which would have windows on the Wilmslow Road elevation.

2.7 However, based on the noise levels measured on-site, and the planning guidance used in 2009, it is expected that the window will be fitted with at least standard double glazing (with a sound insulation performance of 29dB$R_w$) and acoustic trickle ventilators.

## Proposed Development Layout

2.8 Within the Venue a dedicated stage area will be provided, as shown on Figure 3.1, and the windows adjacent to this will be blocked off. Based on AEC's observations of the type of music played within Kennedys existing Irish Bar in Altrincham, the live music consists of a solo singer with a guitar or a duo including a guitarist. It is understood that there will be no playing of drums.

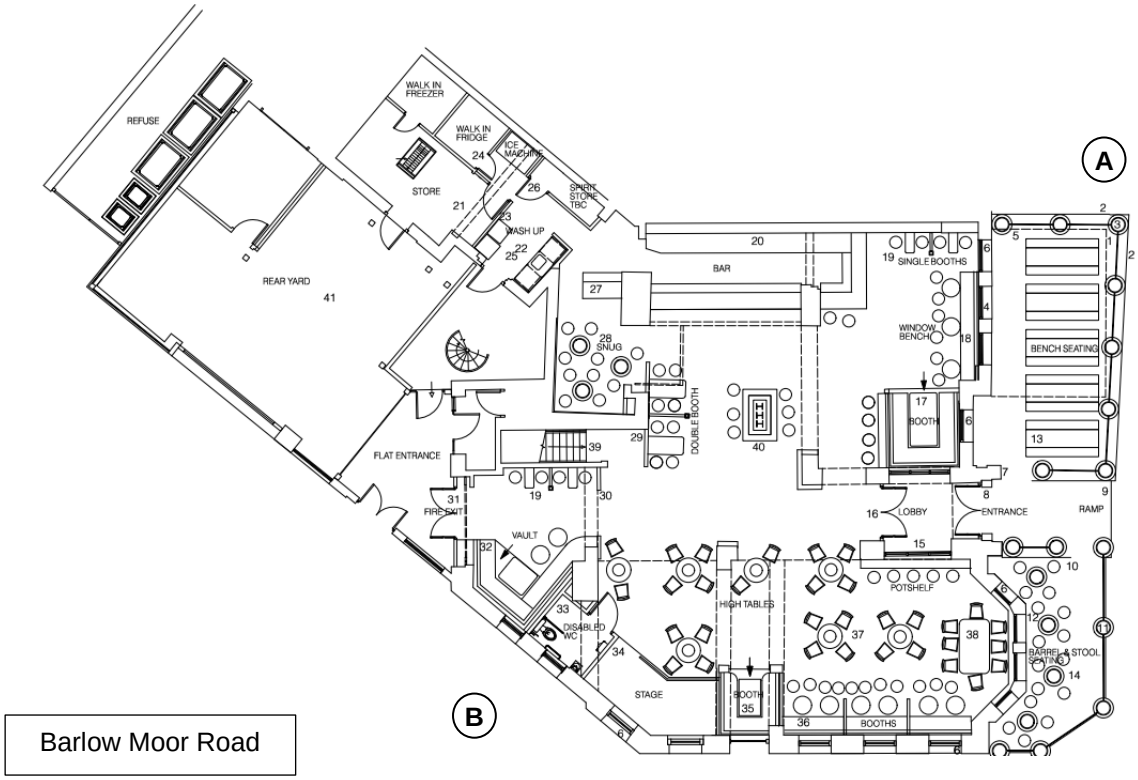
2.9 The sound system will be provided by the Venue who will have control over the volume.

2.10 The external seating, which is located on the Wilmslow Road elevation, will be split into two areas, a barrel and stool area with 16 seats and a bench seating area with 30 seats.

# 3.0 NOISE CLIMATE

3.1 A baseline noise survey was undertaken at two locations, representative of the Wilmslow Road and Barlow Moor Road elevations respectively. The measurement locations are identified on Figure 3.1, below. Measurements were taken between 2230 and 0000h on Sunday 06 April 2025.

**Figure 2.1 – Site Layout and Measurement Locations**




3.2 Noise measurements were undertaken in general accordance with BS7445-1: 2003 '*Description and measurement of environmental noise. Guide to quantities and procedures*'.

3.3 The average ambient and background noise levels, measured at each location, are presented in Table 3.1 below. Full details of the noise survey are presented in Table B.1 of Appendix B with the measured noise data presented in Table B.2.

**Table 3.1 – Measured Free-field Noise Levels**

| Location | Average Noise Levels, dB(A) | |
|---|---|---|
| | Ambient, $L_{eq,T}$ | Background $L_{90,T}$ |
| A – Wilmslow Road | 62 | 45 |
| B – Barlow Moor Road | 62 | 43 |

3.4 The noise climate at Location A prior to 2300h was a combination of music noise breaking out of a venue on Wilmslow Road and road traffic. After 2300h the dominant noise source was road traffic on Wilmslow Road.

3.5 In relation to Location B, the noise climate during all measurements was a combination of road traffic on Barlow Moor Road and patrons associated with The Nelson public house.

# 4.0 BASIS OF ASSESSMENT

4.1 Noise emitted from entertainment venues is partially covered by Manchester City Council's document '*Planning & Noise – Technical Guidance'* (PNTG) issued in October 2022.

4.2 In terms of residential developments which are structurally connected to an entertainment, PNTG states the following

**'Music noise levels in the 63Hz and 125Hz octave centre frequency bands (Leq) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (Leq,5min), respectively'.**

4.3 The above includes noise transfer through a separating structure (a floor in this development) and noise breaking out of the external envelope of the venue and breaking-in via the external envelope of the apartments.

4.4 In relation to octave centre frequency bands 250Hz to 4kHz, it is suggested that ambient noise levels are controlled to not exceed NR25 in bedrooms and NR30 in living rooms.

4.5 There is no guidance in relation to controlling noise breakout from patrons in external seating areas. Therefore, the assessment of these spaces will be based on AEC's experience.

4.6 It is understood that the apartments located on the second floor were recently refurbished and would therefore, need to comply with the internal noise criteria stated in World Health Organisation 1999 document '*Guidelines for Community Noise*'. As such, ensuring the patron noise levels ($L_{Aeq,1hr}$) do not typically exceed the existing baseline ambient noise levels affecting these apartments, is considered a proportionate criterion to minimise any adverse impacts on these residents.

4.7 In terms of context, it should also be noted that the surrounding noise climate already includes pedestrian/patron noise from other premises and that the development site previously had, and operated, external areas for patrons.

4.8 In relation to noise from any external building services plant. PNTG states that noise from this source should be controlled to no greater than 5dB ($L_{Aeq}$) below the typical background ($L_{A90}$) level external to the nearest noise sensitive receptors.

# 5.0 ASSESSMENT OF PROPOSED DEVELOPMENT

**Noise Transfer to the Apartments Above**

5.1 AEC attended Kennedy's existing Irish Bar in Altrincham on Friday 11 April 2025 during a life music event. The ambient noise level measured during the performance of a solo singer/guitarist, is presented in Table 5.1, below.

5.2 In order to determine the airborne sound insulation performance of the existing floor, an airborne sound insulation test was undertaken by AEC at 700 Wilmslow Road. The level difference ($D_w$) of the floor is presented in Table 5.1, below.

5.3 The determined ambient noise level within the first floor apartments, based on the anticipated noise level in the Venue and the measured sound insulation performance of the floor is presented in the following Table 5.1, along with the proposed noise level limit for the bedroom, which is the most onerous requirement.

**Table 5.1 – Noise Transfer Via the Separating Floor**

| Description | Octave Band Centre Frequency (Hz) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k |
| Measured $dBL_{Aeq,T}$ | 82 | 88 | 89 | 95 | 89 | 85 | 81 |
| Measured Level Difference, $D_w$ | 41 | 49 | 55 | 65 | 65 | 65 | 68 |
| Resultant Level in Bedroom | 41 | 39 | 33 | 30 | 24 | 20 | 13 |
| Criteria | 47 | 41 | 35 | 29 | 25 | 22 | 20 |
| Difference | -6 | -2 | -2 | 1 | -1 | -2 | -7 |

5.4 The above indicates that the design aim would be achieved in all octave band centre frequencies with the exception of the 500Hz, which is marginal. However, it is recommended that once the sound system is installed within the Venue, on-site testing undertaken to set an appropriate limit and this limit is not altered.

5.5 In order to reduce the potential for any structure borne noise transfer, all speakers must be resiliently fixed to the walls and no speakers should be directly fixed to the ceiling.

**Noise Breaking-out to the Apartments Above**

5.6 The weakest elements of the external envelope of the Venue would be the doors and the glazing. It is understood that the doors will be lobbied and this should control noise break out via this route.

5.7 Based on on-site observations, it would appear that the glazing to the Venue is standard double glazing, with a sound insulation performance of $29dBR_w$.

5.8 Calculations based on the anticipated noise level within the Venue (presented in Table 5.1), the sound insulation performance of the glazing to the Venue and the first floor apartment, distance attenuation and angle of view, indicate that the required internal noise level limit would be achieved within the apartments.

5.9 It should be noted that the calculation of the internal noise level within the apartment is based on the windows to both the Venue and the apartment being closed and alternative means of ventilation being provided. Due to external noise levels outside the apartment, this is considered a reasonable assumption as noise levels due to existing sources would exceed the requirements of WHO if windows were open.

**Noise From External Seating Area**

5.10 Noise levels in the external seating areas have been determined using the calculation method presented in the J.H. Rindel, C.I Christensen, A.C. Grade research paper: '*Dynamic sound source for simulating the Lombard effect in room acoustic modelling software*' (Proceedings of Inter-Noise 2012, New York, USA, (2012)).

5.11 As the seating areas are associated with a bar, it has been deemed appropriate to use a noise level representative of '*raised'* speech conversation levels. The sound power level of a person speaking in a *raised* voice is equal to roughly $76dBL_{wA}$ (ref. ANSI 3.5).

5.12 The calculation methodology is based on the assumed figure of 46 patrons in the seating area. In order to do this, the first step is to calculate the number of speaking persons (NS) at any one time, where N is the total number of persons (46) and G is the assumed group size (6).

*Number of speaking persons (NS) = N/G*

5.13 In this scenario, this equates to roughly 8-10 people speaking at once (46/6). Considering the number of people speaking and the sound power level of raised conversation (76dB$L_{wA}$) the resultant sound power level would be around 83dB$L_{wA}$.

5.14 The equation shown below is then used to convert the sound power to a sound pressure level, where r is the distance to the nearest noise sensitive receiver.

*Sound pressure level, $L_p = L_{wA} – 20log(r) – 8$*
*$L_{wA} = 86dB$*
*$r = 5m$*

5.15 Using this methodology, the calculated external ambient noise level with the seating area full is expected to be around to 63dB$L_{Aeq,T}$ outside the nearest noise sensitive receptor above the seating area.

5.16 This is around 2dB above the existing ambient noise climate on a Sunday night. Due to the bars in the area, it is expected that ambient noise levels would be higher on other nights when the seating area is expected to be full, and therefore, AEC's suggested design aim would be expected to be met achieved.

**Noise From External Plant**

5.17 At this stage AEC is not aware if there is any external plant to be installed on-site. However, based on Manchester City Council's and the background noise levels measured on-site of 43dB$L_{A90,T}$, noise from any plant would need to be controlled to not exceed 38dB$L_{Aeq,T}$ external to nearest noise sensitive receptors on Barlow Moor Road.

5.18 This will need to be developed once the location and specification of any plant has been confirmed.

## APPENDIX A – Acoustic Terminology in Brief

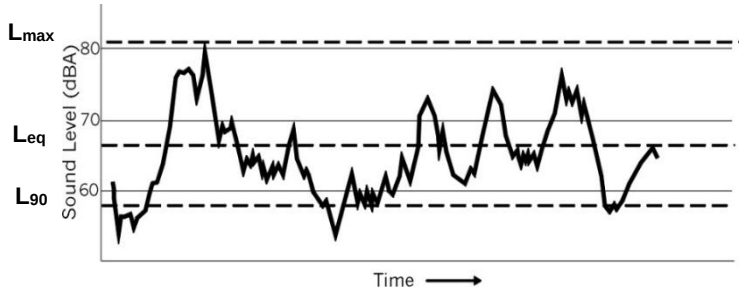
### General

Sound is produced by mechanical vibration of a surface, which sets up rapid pressure fluctuations in the surrounding air. The rate at which the pressure fluctuations occur determines the pitch or *frequency* of the sound. The frequency is expressed in Hertz *(Hz)*, that is, cycles per second. The human ear is sensitive to sounds from about 20 Hertz to 20,000 Hertz. Although sound can be of one discreet frequency - a 'pure tone' - most noise is made up of many different frequencies.

The human ear is more sensitive to some frequencies than others, and modern instruments can measure sound in the same subjective way. This is the basis of the A-weighted sound pressure level *dBA,* normally used to assess the effect of noise on people. The dBA weighting emphasizes or reduces the importance of certain frequencies within the audible range

### Sound / Noise Units

The figure below shows an example of sound level varying with time. Because of this variation over time the same period of noise can be described by several different levels. The most common of these are described below.




| Commonly Used Descriptors for Sound / Noise | |
|---|---|
| $L_{Amax,F/S}$ | The maximum (A-weighted) sound level measured during a given time. 'Fast' or 'Slow' meter response should be cited. |
| $L_{Aeq,T}$ | The equivalent continuous (A-weighted) sound level. It may be thought of as the "average" sound level over a given time, T. It is used for assessing noise from various sources: industrial and commercial premises, construction sites, railways and other intermittent noises. **It can be considered as the "ambient" noise level.** |
| $L_{A90,T}$ | The (A-weighted) sound level exceeded for 90% of a measurement period. **It is the value often used to describe the "background" noise.** |
| **Free-field Level** | This refers to the sound level measured outside, away from reflecting surfaces. |
| **Façade Level** | This refers to the sound level measured outside, at 1m from a hard reflecting surface, typically 3dB greater than the free-field level. |
| $R_w$ | Single number rating used to describe the laboratory airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz. |
| $R'_w$ | Apparent sound reduction index - Single number rating used to describe the sound reduction index of an on-site construction over a range of frequencies, typically 100-3150Hz. |
| $D_w$ | Single number rating used to describe the on-site airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz. |
| $C_{tr}$ | A road traffic spectrum adaptation term which is used to describe the low frequency sound insulation performance of building elements. |

# APPENDIX B – Noise Survey Details

**Table B.1 – Environmental Noise Measurement Procedure**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Date & Time of Survey:** | 2230 to 0000 on Sunday 06 April 2025. | | | | | |
| **Personnel:** | Paul Knowles (AEC). | | | | | |
| **Equipment Used:** | B&K 2260 Real Time Analyser (AEC Kit 2). | | | | | |
| **Calibration:** | The sound level analyser, which conforms to BS EN 61672-1: 2013 *'Electroacoustics – Sound level meters - Part 1 Specifications'* for Class 1 Type Z meters, was in calibration and check calibrated before and after the measurement periods using a Brüel & Kjær type 4231 (94dB) calibrator. There was no significant drift of calibration. Calibration certificates are available on request. | | | | | |
| **Weather Conditions:** | **Date** | **Period** | **Wet/Dry** | **Temp**°C | **Wind Speed & Direction** | **Cloud Cover** |
| | 06.04.25 | Evening/ Night | Dry | 06°C | Westerly and 6mps | 0% |
| **Measurement Locations:** | Measurements were undertaken at two locations around the development site. Identified as A to B on Figure 3.1 above and described below.<br><br>A – 2m from nearest carriageway of Wilmslow Road.<br>B – 2m from nearest carriageway of Barlow Moor Road. | | | | | |
| **Measurement Details:** | 15-minute measurements were undertaken in terms of $L_{eq}$, $L_{90,}$ and $L_{max}$. | | | | | |
| **Façade / Free-Field:** | A – free-field.<br>B - free-field. | | | | | |
| | Full results for the attended measurements are given in Table B.2. | | | | | |
| **Measured Data:** | Full 1/3rd octave band centre frequency data was obtained for all measurements and are available on request. | | | | | |

**TABLE B.2 – Measured Noise Levels (Evening/Night-time)**

| Location | Period, h | Noise Level, dB | | | Comments |
|---|---|---|---|---|---|
| | | $L_{Aeq}$ | $L_{A90}$ | $L_{Amax, F}$ | |
| A | 2231-2246 | 61.0 | 51.4 | 75.8 | Noise climate due to road traffic on Wilmslow Road and music noise from venue in area. |
| | 2302-2317 | 62.6 | 49.5 | 79.3 | Noise climate due to road traffic on Wilmslow Road. |
| | 2348-0003 | 61.0 | 45.5 | 77.0 | |
| B | 2246-2301 | 62.6 | 44.5 | 80.1 | Noise climate due to road traffic on Barlow Moor Road and patron noise from The Nelson. |
| | 2317-2332 | 63.0 | 45.4 | 83.9 | |
| | 2332-2347 | 60.2 | 43.2 | 76.8 | |