Our ref: NIA/7368/17/7294/v2/Minshull Street

5th July 2017

Rose Gold
c/o Indigo Planning
Toronto Square
Leeds
LS1 2HJ

Dear Sirs

NOISE IMPACT ASSESSMENT FOR PROPOSED RESIDENTIAL DEVELOPMENT NO. 12 MINSHULL STREET, MANCHESTER, M1 3FR

1.00 INTRODUCTION

1.01 Environmental Noise Solutions Limited (ENS) has been commissioned by Indigo Planning, on behalf of its client Rose Gold, to carry out a noise impact assessment for a proposed change of use from offices (B1 Use) to 39 no. studio apartments (C3 Use) at No. 12 Minshull Street, Manchester, M1 3FR (hereafter referred to as the subject site).

1.02 Prior approval for the proposed change of use is required under the Town and Country Planning (General Permitted Development) (England) (Amendment) Order 2016. Under this new legislation, a condition allowing the local planning authority to consider noise impacts on the intended occupants of the development from premises in commercial use is included in the extended right.

1.03 The objectives of the noise impact assessment were therefore to:

- Determine the ambient noise climate at the subject site during representative periods of the daytime and night time.
- Assess the potential impact of the ambient noise climate (in particular noise associated with any neighbouring commercial premises) on the intended occupiers of the apartments.
- Provide recommendations for a scheme of sound attenuation works, as necessary, to ensure that the future occupants of the proposed residential development do not experience any unacceptable loss of amenity due to noise.

1.04 This report details the methodology and results of the assessment. It has been prepared to accompany an application for prior approval to be submitted to Manchester City Council (MCC).

1.05 This report has been prepared for Rose Gold for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Rose Gold (applicant), Indigo Planning (applicant's agent) and ENS as to the extent to which the findings may be appropriate for their use.

1.06 A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

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2.00 SUBJECT SITE SETTING AND PROPOSED RESIDENTIAL DEVELOPMENT

2.01 The subject site is located in a mixed residential / commercial use area in Manchester city centre. It is bound by (see site location plan in Appendix 2):

- Minshull Street to the north.
- Richmond Street to the west.
- Canal Street (pedestrianised road) to the east.
- No.1 Canal Street (adjoining building) to the south.

2.02 The ambient noise climate is characterised (dominated) by road traffic on Minshull Street and the wider surrounding road network, with localised contributions from very occasional road traffic on Richmond Street. Whilst music and patron noise associated with pubs and clubs further along Canal Street was subjectively faintly audible during the night time period, local and distant road traffic remained the dominant noise source.

2.03 No. 12 Minshull Street is a 5-storey former office building (lower ground, ground, first, second and third floors). Development proposals are to create 39 no. studios as follows:

- 7 no. studios at lower ground floor.
- 7 no. studios at ground floor.
- 9 no. studios at first floor.
- 9 no. studios at second floor.
- 7 no. studios at third floor.

3.00 BASELINE NOISE SURVEY

3.01 In order to establish the ambient noise levels at the subject site, a baseline noise survey was carried out on Friday 19th May through to Sunday 21st May 2017.

3.02 For the purpose of the assessment, the following noise monitoring positions were adopted (the approximate location of the noise monitoring positions is contained in Appendix 2 for reference):

- MP1 was located on the northern (Minshull Street) façade of the building at 1st floor level at 1 metre from the existing building façade.

- MP1A was located on the northern façade of the building at ground floor level at 1 metre from the existing building façade (to assess attenuation due to height).

- MP2 was located on the eastern (Canal Street) façade of the building at 1st floor level at 1 metre from the existing building façade.

- MP3 was located on the western (Richmond Street) façade of the building at 1st floor level at 1 metre from the existing building façade.

3.03 Noise measurements were undertaken using Bruel & Kjaer 2250 Type 1 integrating sound level meters. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end, using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration level was noted. Weather conditions throughout the survey were appropriate for monitoring. Full details of equipment used are available on request.

3.04 Measurements consisted of A–weighted broadband parameters, together with linear 1/3rd octave band L_{eq} levels. The following table overleaf contains a summary of the measurement data for each measurement session, at each measurement position, rounded to the nearest decibel. As noise measurements were made at 1 metre from the existing building façade, a –3 decibel façade enhancement correction has been applied to the measured levels in order to establish the free field level.

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Table 3.1 – Summary of Noise Measurement Data

Position	Date	Time	L_{Aeq} (dB)	L_{A90} (dB)	L_{A10} (dB)	L_{A1} (dB)	Comment
MP1	19/05/17	1257–2300	61	53	65	69	Road traffic on Minshull Street (circa 120 vehicles / hour during the daytime).
MP1	20/05/17	0700–2300	61	52	65	70	
MP1	21/05/17	0700–1513	59	50	62	69	
MP1	19/05/17	2300–0700	60	49	63	69	Road traffic on Minshull Street and the surrounding road network.
MP1	19/05/17	2300–0100	60	53	64	68	
MP1	20/05/17	2300–0700	60	51	64	68	
MP1	20/05/17	2300–0100	61	54	65	69	
Daytime ambient noise level 59–61 dB $L_{Aeq\ (0700\text{-}2300)}$ Night time ambient noise level 60 dB $L_{Aeq\ (2300\text{-}0700)}$ and worst case ambient noise level 61 dB $L_{Aeq\ (2300\text{-}0100)}$							
MP1A	19/05/17	1440–1450	61	57	64	68	Road traffic on Minshull Street.
Daytime ambient noise level circa 61 dB $L_{Aeq,T}$ (Comparison of measurements at MP1 and MP1A illustrates negligible difference due to height)							
MP2	19/05/17	1518–2300	60	55	62	67	Road traffic on Minshull Street and surrounding road network dominant.
MP2	20/05/17	0700–2300	60	54	63	67	
MP2	21/05/17	0700–1513	58	51	60	66	
MP2	19/05/17	2300–0700	58	51	61	67	Road traffic on Minshull Street and surrounding road network dominant, pedestrian noise and music noise occasionally faintly audible but not significant.
MP2	19/05/17	2300–0100	60	55	62	68	
MP2	20/05/17	2300–0700	59	51	62	67	
MP2	20/05/17	2300–0100	60	57	63	67	
Daytime ambient noise level 58–60 dB $L_{Aeq\ (0700\text{-}2300)}$ Night time ambient noise level 58–59 dB $L_{Aeq\ (2300\text{-}0700)}$ and worst case ambient noise level 60 dB $L_{Aeq\ (2300\text{-}0100)}$							
MP3	19/05/17	1352–1402	57	53	60	65	Road traffic on Minshull Street dominant, occasional vehicle movements on Richmond Street.
Daytime ambient noise level circa 57 dB $L_{Aeq,T}$ (Comparison of measurements at MP1 and MP3 illustrates 3 dB difference due to angle of view to Minshull Street)							

3.05 The daytime ambient noise levels across the subject site are principally due to road traffic on Minshull Street, Richmond Street and the wider surrounding road network. The night time ambient noise levels across the subject site are also due to local road traffic (note: roads in the vicinity of the subject site are as busy during the night time as they are in the daytime).

3.06 Whilst music and patron noise associated with pubs and clubs further along Canal Street was subjectively faintly audible during the night time period, it was not significant or measurable above local and distant road traffic noise.

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4.00 NOISE IMPACT ASSESSMENT

4.01 In relation to noise at the subject site, Paragraph O.2. of the Town and Country Planning (General Permitted Development) (England) (Amendment) Order 2016 states:

(1) Development under Class O is permitted subject to the condition that before beginning the development, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to—

*(d) impacts of noise from **commercial premises** on the intended occupiers of the development,*

4.02 As evidenced in Section 3.00, no noise from neighbouring commercial premises was noted during the course of the noise survey, with road traffic wholly dominant throughout the subject site.

4.03 Further guidance in contained in Section 3.5 of MCC's Planning & Noise Technical Guidance, which states:

The levels [in BS8233] are based on WHO guidelines and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow this typical pattern, i.e. a nightclub operating between 23.00hrs to 03.00hrs, a more focused assessment should be carried out e.g. 1 hour may be used.

4.04 With cognisance to this, the following tables contain a comparison of octave band frequency data and broadband noise levels, as measured at both MP1 and MP2, for:

- The overall 16-hour (0700–2300 hours) daytime period.
- The overall 8-hour (2300–0700 hours) night time period.
- The worst case 2-hour (2300–0100 hours) night time period.

Table 4.1 – Octave Band Frequency Data Comparison (MP1)

Time Period	Octave Band L_{eq}								dB L_{Aeq}
	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
Friday 0700–2300	65	59	59	58	57	53	50	39	**61**
Friday 2300–0100	65	60	58	57	56	53	47	38	**60**
Friday 2300–0700	64	58	59	56	56	53	45	37	**60**
Saturday 0700–2300	65	59	58	57	58	54	47	40	**61**
Saturday 2300–0100	67	60	59	58	58	54	47	40	**61**
Saturday 2300–0700	65	59	58	57	57	53	47	41	**60**

Table 4.2 – Octave Band Frequency Data Comparison (MP2)

Time Period	Octave Band L_{eq}								dB L_{Aeq}
	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
Friday 0700–2300	65	57	57	57	56	52	46	36	**60**
Friday 2300–0100	65	59	57	57	56	52	48	41	**60**
Friday 2300–0700	64	57	55	55	55	51	46	39	**59**
Saturday 0700–2300	64	57	57	56	56	52	47	38	**60**
Saturday 2300–0100	67	60	57	57	57	53	46	38	**60**
Saturday 2300–0700	65	58	56	56	56	52	45	36	**59**

4.05 As evidenced above, although there are pubs and clubs in the locality, there are negligible differences between the noise levels at 2300–0100 hours (which is considered 'worst case' in terms of commercial noise) and during the overall 16-hour daytime and 8-hour night time periods, both in terms of broadband noise levels and octave band frequency levels.

4.06 This is consistent with subjective aural observations that whilst music and patron noise associated with pubs and clubs further along Canal Street was subjectively faintly audible at the subject site, it was not significant or measurable above local and distant road traffic, which remained the dominant noise source both day and night.

4.07 On this basis, no specific mitigation measures are required at the subject site to control external noise from commercial premises.

5.00 CONCLUSIONS

5.01 A noise impact assessment has been undertaken for a proposed change of use from offices (B1 Use) to 39 no. studio apartments (C3 Use) at No. 12 Minshull Street, Manchester, M1 3FR.

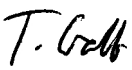
5.02 Daytime and night time ambient noise levels across the subject site are characterised (dominated) by local and distant road traffic on Minshull Street, Richmond Street and the wider surrounding road network.

5.03 Whilst music and patron noise associated with pubs and clubs further along Canal Street was subjectively faintly audible at the subject site, it was not significant or measurable above local and distant road traffic, which remained the dominant noise source both day and night.

5.04 On the basis of the above, no specific mitigation measures are required to control external noise at the subject site (which is wholly due to road traffic).

I trust the foregoing is sufficient for your needs. Should you have any queries regarding the above, please do not hesitate to contact me.

Yours sincerely



Thomas Crabb
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Environmental Noise Solutions Limited

Appendix 1
Glossary of Acoustic Terms

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (R_W)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (R_W is used to characterise the insulation of a material or product that has been measured in a laboratory).

Appendix 2
Drawings (Site Plan / Noise Monitoring Positions)

