



**83 Connaught Road
Reading**

Noise Assessment Report

17 February 2026

For
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Imani Living Ltd

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SUMMARY

It is proposed to use the property at 83 Connaught Road in Reading as a new mother & baby care facility.

The property is end of terrace and adjacent to an existing residential house, therefore an assessment of noise transmission due to baby noise, via the shared constructions has been undertaken.

Airborne sound insulation testing was undertaken across the walls separating the two properties, the results of which have achieved the requirements of Approved Document E of the Building Regulations.

Based on the results of the airborne sound insulation tests, noise transmission calculations have been undertaken to predict the level of internal activity noise within the adjacent property.

Results of the calculations show that the predicted internal noise levels within 85 Connaught Road (due to baby noise) are less than the desirable internal noise level criteria set out by British Standard 8233: 2014 *"Guidance on sound insulation and noise reduction for buildings"*.

The predicted internal noise levels are therefore expected to correspond with No Observed Effect Level (NOEL) in relation to the Noise Exposure Hierarchy and Noise Policy Statement for England.

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1.0 Introduction

It is proposed to use the property at 83 Connaught Road in Reading as a new mother & baby care facility.

auricl has undertaken an acoustic assessment in relation to the proposed use of the property and the sound insulation of the separating walls.

This report presents the methodology and results of airborne sound insulation tests across the walls separating the properties, and our subsequent assessment to predict the noise impact to the neighbouring property.

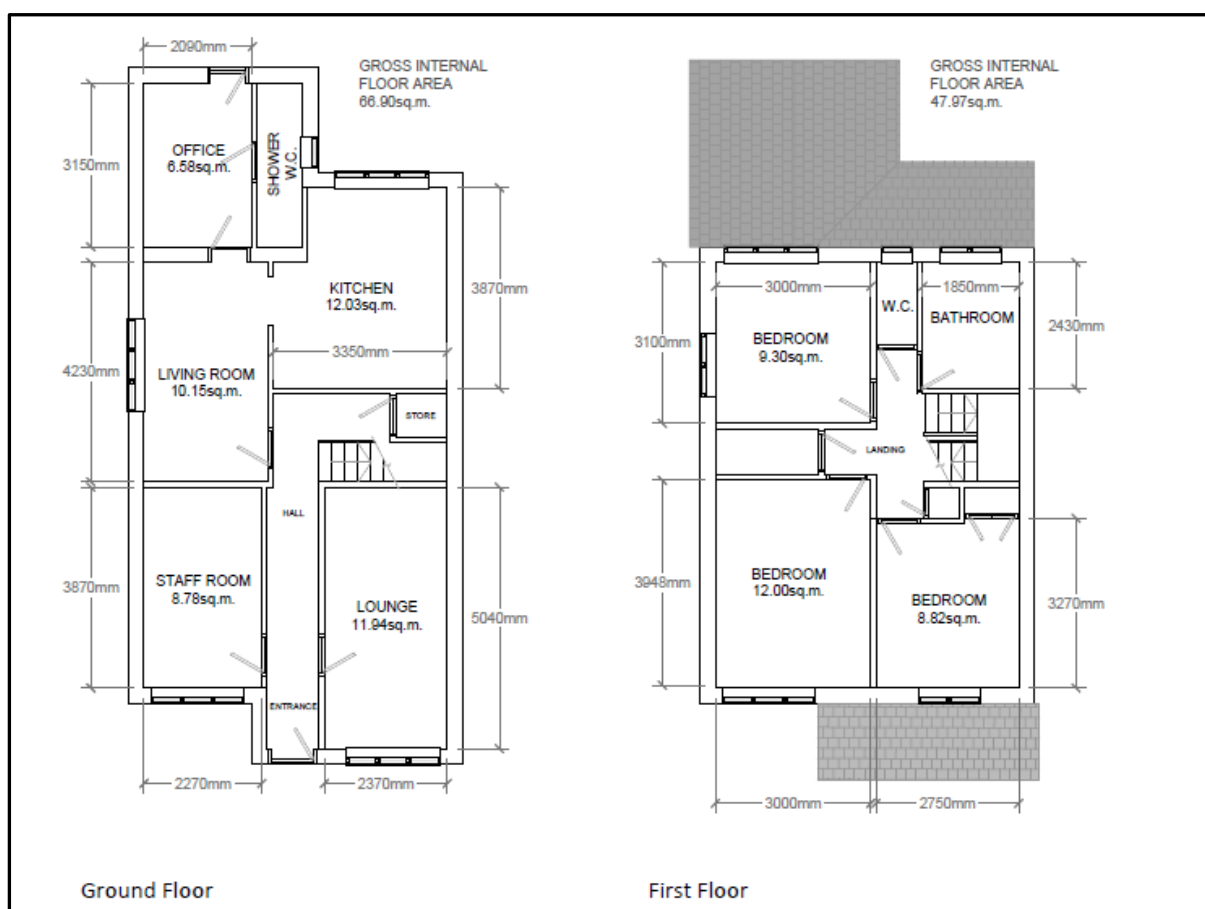
2.0 Description of Site and Proposals

The site is located at the northern end of a row of residential houses on Connaught Road in Reading, at the southeast corner of the junction between Connaught Road and Prince of Wales Avenue. 83 Connaught Road is directly adjacent to 85 Connaught Road with which it shares separating walls.

The property (83 Connaught Road) is proposed to be used as a "mother and baby" provision which is understood will provide care to new mothers and babies up to the age of 2 years. The site will provide accommodation for up to 3 mothers and their babies at any time, with potential for overnight care where required.

Figure 2.1 shows the proposed internal layout of the facility

Figure 2.1 Proposed Internal Layout



The 83 Connaught Road Kitchen and Lounge at ground floor level are adjacent to the living room at 85 Connaught Road.

The 83 Connaught Road Bathroom and Bedroom (8.82sq.m) at first floor level are each adjacent to a bedroom at 85 Connaught Road.

The worst-case areas where mothers and babies are likely to spend the majority of the time are the bedrooms and the lounge.

3.0 Noise Assessment Criteria

3.1 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) sets out the Government's core policies and principles with respect to land use planning in England. In respect to noise, the Framework states at paragraph 180 that planning policies and decisions should aim to:

- Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development - and avoid noise giving rise to significant adverse impacts on health and quality of life; and
- Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

The Noise Policy Vision is to 'promote good health and a good quality of life through the effective management of noise within the context of government policy on sustainable development'. Through effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development, there are the following aims:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

3.2 Planning Practice Guidance (PPG) on Noise

The Planning Practice Guidance on Noise (PPG) ensures noise be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustics environment. When preparing local or neighbourhood plans, or taking decisions about new development, there may also be opportunities to consider improvements to the acoustic environment.

Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard or amenity can be achieved.

3.3 Noise Policy Statement for England (NPSE)

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.

The Observed Effect Levels are as follows:

- Significant Observed Adverse Effect Level (SOAEL): This is the level of noise exposure above which adverse effects on health and quality of life occur;
- Lowest Observed Adverse Effect Level (LOAEL): This is the level of noise exposure above which adverse effects on health and quality of life can be detected; and
- No Observed Effect Level (NOEL): This is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 3.1 summarises the noise exposure hierarchy, based on the likely average response.

Table 3.1 Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No effect	No observed effect	No specific measures required
Noticeable and not intrusive	Noise can be heard but does not cause any changes in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	No specific measures required
Lowest observed adverse effect level			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed adverse effect	Mitigate and reduce to a minimum
Significant observed adverse effect level			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant observed effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable adverse effect	Prevent

3.4 British Standard (BS) 8233: 2014

British Standard (BS) 8233: 2014 “Guidance on sound insulation and noise reduction for buildings” is the current industry standard document for specifying internal noise level criteria within habitable rooms of residential dwellings.

The standard specifies the ‘desirable’ standards shown in Table 3.2.

Table 3.2 BS 8233 Desirable Internal Noise Levels

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

In relation to the desirable internal noise levels presented above, BS 8233: 2014 also states:

“Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”

Compliance with the above is generally considered to represent appropriate mitigation of the impact of noise on the health and quality of life within residential properties.

3.5 Requirements of Approved Document E 2003

Requirement E1 of Approved Document E of the Building Regulations 2010 states:

“Dwellings-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that they provide reasonable resistance to sound from other parts of the same building and from adjoining buildings”

Table 3.3 below presents the sound insulation performance standards detailed in Approved Document E 2003 which should be achieved by separating walls that have a separating function between dwellings, or between dwellings and adjoining buildings, when formed by material change of use.

Table 3.3 Sound Insulation Performance Standards for Dwellings Houses and Flats

Separating Construction	Airborne Sound Insulation $D_{nT,w} + C_{tr}$ dB (Minimum)
Walls	43

4.0 Noise Impact Assessment

4.1 Airborne Sound Insulation Testing

On Wednesday 11 February 2026, airborne sound insulation tests were undertaken across the separating walls between the areas shown in Table 4.1.

Table 4.1 Tested Adjacencies – Airborne Sound Insulation Tests Across Walls

Test Reference	Source Room	Receive Room
AW1	83 Connaught Road Lounge (Observation Room)	85 Connaught Road Living Room
AW2	83 Connaught Road Bedroom	85 Connaught Road Bedroom

All tests were undertaken by Charlie Jones BSc(Hons) MIOA, Approved Tester number 215/3 of **auricl** Acoustic Consulting, Registered Organisation number 215 at the time of testing.

The airborne sound insulation tests were undertaken in general accordance with the measurement procedure presented in British Standard EN ISO 140-4: 1998.

A loudspeaker (with amplifier and pink noise generator) was used to create a steady and continuous spectrum over the 1/3 octave band frequency range of 50Hz to 5kHz within the source room.

Sound pressure level measurements were undertaken in both the source and receive rooms. Measurements were made over a minimum duration of 30 seconds, then repeated for a second loudspeaker position.

Measurements of background noise levels were undertaken in the receive room over a minimum duration of 30 seconds.

All sound pressure level measurements were undertaken using the hand-held moving microphone technique, the path of which complies with that of a rotating microphone boom, as specified in British Standard EN ISO 140-4: 1998.

Measurements of the reverberation time within the receive room were undertaken using the interrupted noise source method. 6 No total decays were recorded in the receive room comprising 1No loudspeaker positions and 6 No reverberation measurement positions.

Table 4.2 below presents the instrumentation and measurement equipment used during the sound insulation testing.

Table 4.2 Instrumentation and Measurement Equipment

Item	Manufacturer	Model	Serial Number
Type 1 Integrating Sound Level Meter	01 dB	FUSION	11388
Microphone	GRAS	40 CE	330829
Calibrator	01 dB	CAL31	87267
Loudspeaker	EV	ZLX 12P	-

The airborne sound insulation performance of the tested wall constructions has been calculated in accordance with British Standard EN ISO 717-1: 1997.

The results of the airborne sound insulation tests across the separating walls are presented and compared with the relevant Approved Document E requirement in Table 4.3 below.

Table 4.3 Results of Airborne Sound Insulation Tests Across Separating Walls

Test Reference	Adjacencies		Measured $D_{nT,w} + C_{tr}$ Airborne Sound Insulation (dB)	Minimum Required $D_{nT,w} + C_{tr}$ (dB) Airborne Sound Insulation as per Approved Document E 2003
	Source Room	Receive Room		
AW1	83 Connaught Road Lounge (Observation Room)	85 Connaught Road Living Room	48	≥ 43
AW2	83 Connaught Road Bedroom	85 Connaught Road Bedroom	48	≥ 43

It can be seen that the tested walls achieve the relevant standard presented in Approved Document E 2003 of the Building Regulations.

4.2 Noise Transmission Predictions

Based on the results of the airborne sound insulation tests, we have undertaken noise transmission calculations to predict the level of noise that would be transmitted through the separating walls due to babies within 83 Connaught Road.

auricl has previously undertaken measurements of noise levels within the UCLH maternity unit. The measurements involved ambient internal noise levels where the dominant noise source was crying babies. On this basis we have considered a typical internal noise level of 75 dB $L_{Aeq, T}$ for a crying newborn baby.

As mentioned above, the proposed site has accommodation for up to three mothers and babies. With three proposed bedrooms at the property, it is assumed that there would be only one mother and baby per bedroom during night-time periods. During the daytime, it is assumed that all three mothers and babies could occupy the lounge simultaneously.

The separating wall noise transmission calculations are presented in Tables 4.4 and 4.5

Table 4.4 Noise Transmission Calculation – 83 Lounge to 85 Living Room During Daytime Periods

Element	dB at Octave Band Centre Frequency (Hz)						L _{Aeq, T} (dB)
	125	250	500	1k	2k	4k	
Typical Crying Baby Internal Noise Level	70	70	71	69	67	66	75
Quantity Correction (Three Babies in Unison)	+5	+5	+5	+5	+5	+5	
Measured Level Difference (D) across Separating Wall Construction	-37	-46	-50	-64	-70	-73	
Predicted Noise Level Within 85 Connaught Road Living Room	37	29	26	10	3	<0	29
BS 8233: 2014 Desirable Internal Noise Level Limit							35

Table 4.5 Noise Transmission Calculation – 83 Bedroom to 85 Bedroom During Night-time Periods

Element	dB at Octave Band Centre Frequency (Hz)						L _{Aeq, T} (dB)
	125	250	500	1k	2k	4k	
Typical Crying Baby Internal Noise Level	70	70	71	69	67	66	75
Measured Level Difference (D) across Separating Wall Construction	-37	-46	-53	-64	-69	-72	
Predicted Noise Level Within 85 Connaught Road Bedroom	33	25	18	5	<0	<0	23
BS 8233: 2014 Desirable Internal Noise Level Limit							30

It can be seen that the predicted noise levels within 85 Connaught Road (due to baby noise) are significantly lower than the desirable internal noise levels specified in BS 8233: 2014 for living rooms during the daytime and bedrooms during the night-time.

The predicted internal noise levels therefore correspond with No Observed Effect Level (NOEL) in relation to the Noise Exposure Hierarchy presented in Table 3.1.

Appendix A – Acoustic Terminology

Parameter	Description
Decibel (dB)	A logarithmic scale representing the sound pressure or power level relative to the threshold of hearing (20×10^{-6} Pascals).
Sound Pressure Level (L_p)	The sound pressure level is the sound pressure fluctuation caused by vibrating objects relative to the threshold of hearing.
A-weighting (L_A or dBA)	The sound level in dB with a filter applied to increase certain frequencies and decrease others to correspond with the average human response to sound.
$L_{Aeq,T}$	The A-weighted equivalent continuous noise level over the time period T (typically T= 1 hour for noise impact assessments during daytime periods and T = 15 minutes for night-time periods). This is the sound level that is equivalent to the average energy of noise recorded over a given period.
L_{A90} (1 hour)	The noise level exceeded for 90% of the time (also referred to as the background noise level), measured over a 1 hour period
L_{Amax}	The A-weighted maximum noise level measured during the measurement period.
$D_{nT,w}$	The weighted (w) standardised (nT) sound level difference (D), a single number indicator of the on-site airborne sound insulation performance of a construction, usually measured across the frequency range 100-3150 Hz. The higher the value of $D_{nT,w}$, the greater the sound insulation, and the more onerous the requirement.
C_{tr}	A spectrum adaptation term which may be applied to the $D_{nT,w}$
$L'_{nT,w}$	The weighted (w) standardised (nT) sound pressure level (L), a single number indicator of the on-site impact sound insulation performance of a construction, usually measured across the frequency range 100-3150 Hz. $L'_{nT,w}$ is usually specified as a maximum sound pressure level in the receiving room. The lower the value of $L'_{nT,w}$, the quieter the received impact sound, and the more onerous the requirement.
Reverberation Time	The time taken, in seconds, for a sound to decay by 60 dB. The longer the timer taken, the greater the reverberation. Reverberation generally differs with frequency and hence is normally measured in octaves (125 Hz-4kHz) or third octaves (100 Hz-5 kHz).