

Mr Ash Bajar
Azureus Homes Ltd
62B London Road
Southampton
SO15 2HA

Date: 31st October 2022
Reference: R9644-2 Rev 0

RE: 2D High Street, Eastleigh – Noise Commissioning Tests for Planning Condition 4

Further to our recent noise monitoring, I am pleased to provide our technical report relating to the above.

1.0 CRITERIA

- 1.1 Planning Condition 4 (planning reference PN/22/93060) from Eastleigh Borough Council sets out the following requirements in relation to noise mitigation:

"The development hereby approved shall not be occupied until the noise mitigation measures recommended within the submitted Noise Assessment by 24Acoustics, Report Number: 'R9644-1 Rev 0', dated 11th July 2022 have been implemented in full and evidence has been provided to the Local Planning Authority in the form of follow up testing to demonstrate that the mitigation measures are effective.

Reason: To protect the amenities of future occupiers of the development."

- 1.2 24 Acoustics' report R9644-1 Rev 0 provided recommendations, in terms of external building fabric and ventilation, to ensure that internal noise levels do not exceed the following criteria:
- Not to exceed 35 dB $L_{Aeq, 16hr}$ in living rooms during the daytime (07:00 to 23:00 hours)
 - Not to exceed 30 dB $L_{Aeq, 1hr}$ in bedrooms during the daytime (07:00 to 23:00 hours)
 - Not to exceed 25 dB $L_{Aeq, 15min}$ in bedrooms at night (23:00 to 07:00 hours)
 - Not to regularly exceed 45 dB $L_{Amax, fast}$ in bedrooms at night (23:00 to 07:00 hours)

2.0 MEASUREMENT INSTRUMENTATION AND PROCEDURE

- 2.1 Measurements were undertaken between Friday 28th and Monday 31st October 2022 in the living room facing the High Street and main bedroom facing the service yard, as shown on Figure 1.
- 2.2 The primary sources of noise affecting the site are road traffic on the High Street and commercial noise sources at the rear. The site backs on to a shared service area, and site visits identified building services plant serving nearby retail units and the use of mopeds associated with takeaway deliveries from Domino's Pizza takeaway.
- 2.3 The measurements were undertaken within the completed, unfurnished carpeted rooms with the windows closed and trickle vents open for ventilation.
- 2.4 The following instrumentation was used:
- 2 x Rion Class 1 sound level meter Type NL52;
 - Brüel and Kjær acoustic calibrator Type 4231.
- 2.5 Noise measurements were made in terms of overall A-weighted statistical parameters including L_{eq} and L_{max} (all measured on fast response) in 5-minute intervals. Reverberation times were also measured in each room.
- 2.6 The calibration of all equipment was checked before and on completion of the measurements and no significant drift was found. Calibration of 24 Acoustics' equipment is traceable to National Standards.

3.0 RESULTS AND ASSESSMENT

- 3.1 As the rooms were unfurnished, the measured noise levels have been corrected using the measured reverberation times, to a reverberation time of 0.5 seconds in accordance with BS 8233: 2014.
- 3.2 The corrected overall results for daytime and night-time periods are summarised in Table 1 below.

Room	Ambient Noise Level, dB		
	Daytime	Night-Time	Night-Time (Typical)
Living Room	28 dB L_{Aeq} , 16 hour	N/A	N/A
Bedroom	25 dB L_{Aeq} , 1 hour	24 dB L_{Aeq} , 15 min	44 dB L_{Amax} , f

Table 1 Measured Internal Ambient Noise Levels (corrected for reverberation times)

- 3.3 24 Acoustics considers the typical max event to be the 10th highest $L_{Amax,f}$ noise level during the relevant night-time period.
- 3.4 The noise measurement results demonstrate that the internal noise levels achieve the criteria set out in 24 Acoustics' report R9644-1 Rev 0. This therefore demonstrates that the installed mitigation measures are effective and in compliance with condition 4.

4.0 CONCLUSIONS

- 4.1 Noise measurements have been undertaken at 2D High Street Eastleigh to address the requirements for noise break-in set out in planning condition 4 (ref. PN/22/93060)
- 4.2 The noise measurement results confirm that noise levels within habitable rooms comply with the established criteria.
- 4.3 The assessment has therefore demonstrated that the installed mitigation measures are effective and in compliance with the requirements of condition 4.

I trust the above is in order. Please feel free to get in touch if you have any questions.

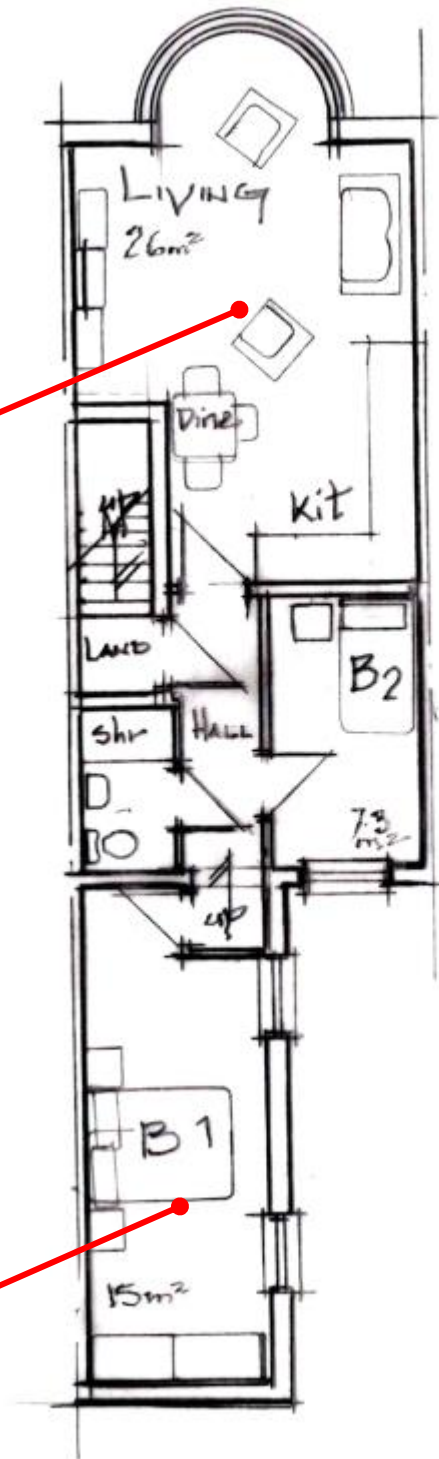
Yours sincerely,

For 24 Acoustics Ltd

Andre Pires
BEng (Hons) AMIOA
Consultant
andre@24acoustics.co.uk

Living Room – Noise
Monitor Location
(overlooking High Street)

Bedroom – Noise Monitor
Location
(overlooking service yard)



Project: 2D High Street Eastleigh	Title: Monitor locations		 24Acoustics
DWG No: Figure 1	Scale: N.T.S.	Rev: 0	
Date: October 2022	Drawn By: AP	Job No: 9644	

APPENDIX A: ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. The range of audible sound is from 0 to 140 dB. The frequency response of the ear is usually taken to be around 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dBA weighting. This is an internationally accepted standard for noise measurements.

For variable sources, such as traffic, a difference of 3 dBA is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dBA. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dBA corresponds to a doubling/ halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to activities within an area. In attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:

i) The L_{Amax} noise level

This is the maximum noise level recorded over the measurement period.

ii) The L_{Aeq} noise level

This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time".

It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

iii) The L_{A10} noise level

This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.

iv) The L_{A90} noise level

This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during the quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.