

Ms Rosie Hawes
Bargate Homes Ltd
The New Barn
Vicarage Farm Business Park
Winchester Road
Fair Oak
SO50 7HD

Date: 15th September 2023
Reference: R9286-3 Rev 0

Dear Rosie

**RE: Planning Application DC/21/91944 – North Stoneham Park Southampton
Noise Commissioning Tests (Planning Condition 26) – Plot 504**

24 Acoustics has been instructed by Bargate Homes to carry out pre-occupation noise tests for Phases 3A and 5A of the North Stoneham Park development to discharge Condition 26 of the planning consent for the site.

Two areas of the site have been identified for testing and these are representative of the closest parts of the site within both Phases 3A and 5A to the M3 and M27 motorways. These testing areas have been agreed with Jon Pyke, Environmental Health Officer at Eastleigh Borough Council, via email correspondence in late January 2023.

Both of the test areas identified lie within Phase 5A. Phase 3A is further from the motorway noise sources and will benefit from screening from the intervening dwellings in Phase 5A. It is confirmed that Phase 3A will utilise the same construction, glazing and ventilation systems as Phase 5A. As the two testing areas represent a worst-case scenario in terms of noise for both phases, it is considered that demonstration of compliance with Condition 26 for the two test plots will demonstrate compliance for both Phases 3A and 5A.

This report presents the results of the first of the two tests. When a suitable plot is ready, a further test will be undertaken in another plot further north within the development.

1.0 CRITERIA

- 1.1 Planning Condition 26 (planning reference DC/21/91944) sets out the following requirements in relation to the control of environmental noise within the new residential properties:

“(Condition 26) Before each phase of development is commenced a detailed assessment of noise arising from road traffic on the proposed development and a detailed noise mitigation scheme to address such noise (with measures to provide satisfactory internal and external noise standards to include site layout and building orientation, building construction, glazing, mechanical ventilation, acoustic screening and phasing of development and occupation) shall be submitted to and approved in writing by the Local Planning Authority. The internal noise standards to be achieved shall be agreed in writing by the Local Planning Authority prior to the submission of the noise mitigation scheme. The noise mitigation measures, as approved in writing by the Local Planning Authority, shall be fully installed and verified as performing as required prior to the first occupation of each dwelling unit, and shall thereafter retained. Reason: in the interests of residential amenity and to protect business interest”

- 1.2 This report covers the assessment of a dwelling to the south-west of the site, Plot 504, and presents the results of noise measurements undertaken within the completed plot.
- 1.3 The assessment methodology and plot location to be tested has been agreed with Jon Pyke, Environmental Health Officer at Eastleigh Borough Council, via email correspondence in late January 2023.

2.0 MEASUREMENT INSTRUMENTATION AND PROCEDURE

- 2.1 Noise measurements were undertaken between Thursday 31st August and Tuesday 5th September 2023 in the living room and bedroom 2 of the following plot, as indicated in Figures 1 and 2:

- Plot 504 (facing M3 / M27)

- 2.2 The measurements were undertaken within the completed, unfurnished rooms with the windows closed. Each room had a single trickle ventilator installed and the vent in each room was left open for the duration of the survey.

- 2.3 Noise measurements were also undertaken in the garden of the property.

- 2.4 The following instrumentation was used:

- 2 x INM Class 1 sound level meter Type INM-E001;
- Rion Class 1 sound level meter Type NL31;
- Rion acoustic calibrator Type NC-74.

- 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 1-minute intervals. The octave band reverberation times were also measured in each room using a loudspeaker and interrupted noise source.

- 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 average results for daytime and night-time periods are summarised in Table 1 below for each room.

Room	Ambient Noise Level, dB		
	Daytime $L_{Aeq, 16 \text{ hour}}$	Night-Time $L_{Aeq, 8 \text{ hour}}$	Night-Time Typical $L_{Amax, f}$
Plot 504 Bedroom 2	28	24	42
Plot 504 Living Room	23	N/A	N/A
Criterion (BS 8233: 2014)	≤ 35	≤ 30	≤ 45

Table 1 Measured 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, as presented in Table 1, demonstrate that the internal noise levels achieve the requirements of Condition 26 (ref. DC/21/91944).
- 3.5 Condition 26 makes no reference to external amenity areas, however, this has been included as good practice. Average measured ambient noise levels in the garden were 48 dB $L_{Aeq, 16hr}$. This is well below the target noise level for external amenity areas of 55 dB $L_{Aeq, 16 \text{ hr}}$.

4.0 CONCLUSIONS

- 4.1 Noise measurements have been undertaken within a completed plot at North Stoneham Park, Southampton, to address the requirements for noise break-in set out in planning Condition 26 (ref. DC/21/91944).
- 4.2 The noise measurement results confirm that noise levels within habitable rooms comply with the requirements of Condition 26 and are therefore acceptable.

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

Yours sincerely,

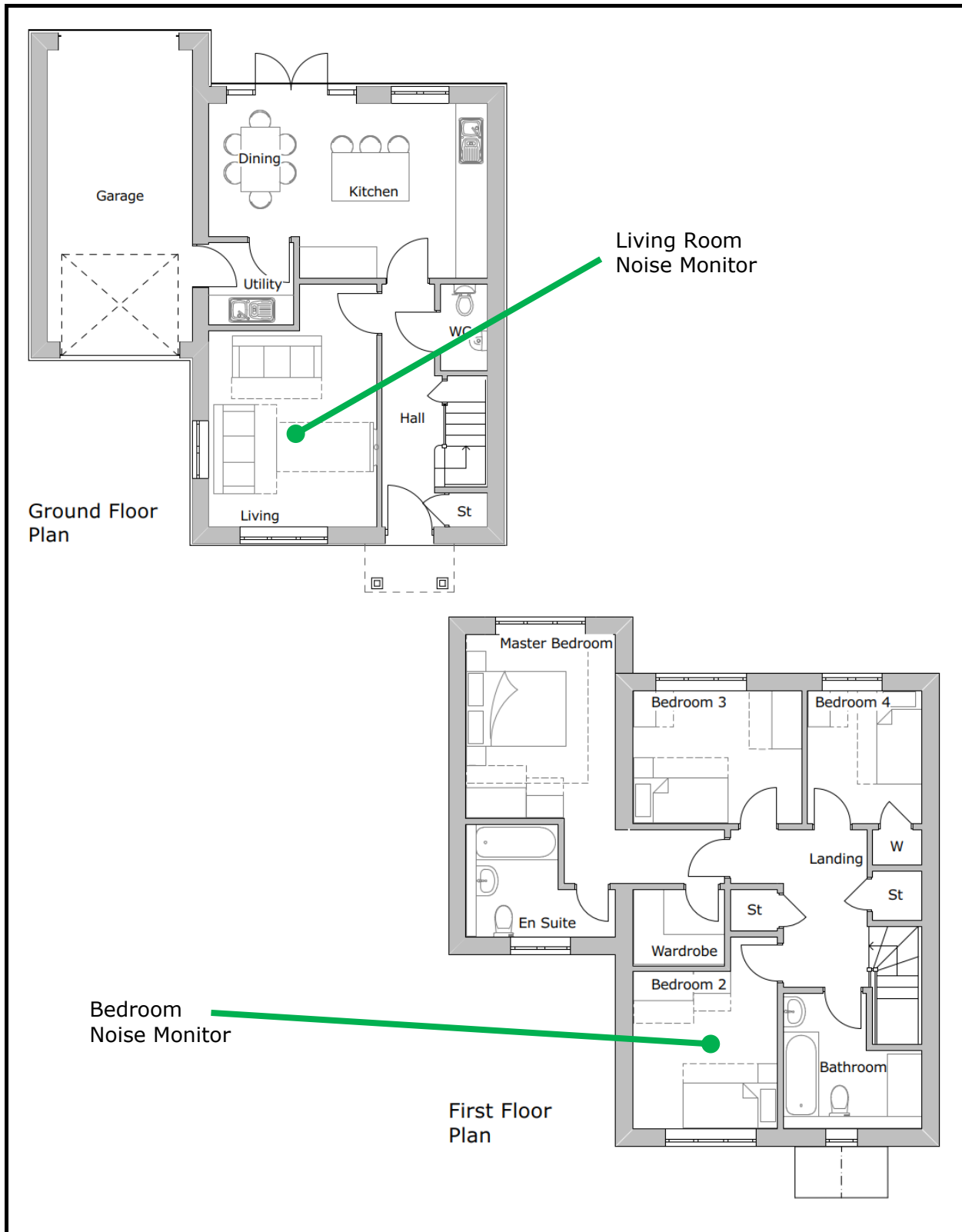
For 24 Acoustics Ltd

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Plot 504

Project: North Stoneham Park, Southampton	Title: Site Plan and Test Plot Location		 24Acoustics
DWG No: Figure 1	Scale: N.T.S.	Rev: 0	
Date: September 2023	Drawn By: AR	Job No: 9286	



Project: North Stoneham Park, Southampton	Title: Plot 504 Layout and Monitor Locations		 24Acoustics
DWG No: Figure 2	Scale: N.T.S.	Rev: 0	
Date: September 2023	Drawn By: AR	Job No: 9286	

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.