

Kieran McGuire
BDW Southampton
Tollbar House
Tollbar Way
Hedge End
Southampton
SO30 2UH

Date: 31st August 2021
Reference: R9124-1 Rev 0

Dear Kieran,

Re: Plot 160, Harbour Place, Bedhampton – Pre-Occupation Noise Measurements

Further to our recent noise measurements in habitable rooms, I am pleased to provide our technical report which summarises the findings.

1.0 INTRODUCTION

- 1.1 Planning condition 13 requires sound testing of the most affected plots at the site, namely those closest to Havant Road (A2030) and the A27. This report addresses noise from road traffic within plots overlooking Havant Road. Plots 160 and 161 were selected as representative of the closest plots to Havant Road, i.e. the most sensitive properties for noise break-in.
- 1.2 This report presents the results of noise measurements undertaken within habitable rooms of plot 160, overlooking Havant Road (A2030), during August 2021. Further surveys and associated reports will be produced for plot 161 and plots further within the site (overlooking the A27) as the site's completion schedule allows.

2.0 CRITERIA

- 2.1 Planning condition 13 (ref APP/18/00450) sets out criteria for internal noise levels within dwellings, as follows:

"No individual dwelling as being subject to high levels of noise, as indicated on plan SK05 of WYG Noise Assessment dated August 2019, shall be occupied unless and until mitigation has been installed and demonstrated through post validation testing to determine compliance with the noise impact assessment as provided by WYG in the Noise Assessment : August 2019). Such testing can be achieved using sample dwellings, as per the measurement positions.

This shall be submitted to and agreed in writing by the Local Planning Authority. This report is to confirm the expected noise levels within the proposed dwellings have been achieved and are in line with those levels laid out in BS8233:2014, and recommended for indoor ambient noise levels for dwellings, especially in relation to living rooms and bedrooms i.e. during the day (07:00 to 23:00) 35 dB $L_{Aeq,16\text{ hour}}$ and at night (23:00 to 07:00) 30 dB $L_{Aeq,8\text{ hour}}$ for bedrooms. The glazing and ventilation strategy mitigation measures outlined in the WYG Noise Assessment dated August 2019, shall be retained at all times, unless otherwise agreed in writing by the Local Planning Authority."

Registered Office

Armstrong House
3 Bassett Avenue
Southampton SO16 7DP



Registered Number 5256773
Registered in England & Wales

- 2.2 An explanation of acoustical terms used in this report is provided in Appendix A. All noise levels in this report are quoted in dB relative to 20 μ Pa.

3.0 MEASUREMENT INSTRUMENTATION AND PROCEDURE

- 3.1 Internal noise levels were measured between Thursday 19th and Tuesday 24th August 2021. The following instrumentation was used:

- Rion precision grade Class 1 sound level meter Type NL-52
- Rion precision grade Class 1 sound level meter Type NL-31
- Bruel and Kjaer acoustic calibrator Type 4231

- 3.2 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. Octave bands were also recorded to aid source identification. The calibration was checked before and on completion of the measurements and no drift was found. Calibration of 24 Acoustics' equipment is traceable to National Standards.

- 3.3 Measurements were made within the living room and bedroom of plot 160 which have windows (with trickle vents) overlooking Havant Road. In all cases, windows were closed and trickle-type ventilators were set to the open position. The rooms were empty and unfurnished with no floor coverings.

- 3.4 Noise from internal and external construction sources was controlled as far as possible by restricting access to the properties throughout the measurement duration. Data associated with periods of construction work, local disturbance and inclement weather has been excluded from the analysis. In addition, by measuring over a weekend period, the effects of site works were kept to a minimum.

4.0 RESULTS AND ASSESSMENT

- 4.1 The measured internal noise levels have been normalised to a reverberation time of 0.5 of a second for dwellings as per BS 8233: 2014.
- 4.2 Measured internal noise levels (as arithmetically averaged for each of the assessment periods) are shown in Table 1 below. It is confirmed that the target criteria were met for each of the measurement assessment periods.

Location	Sound Pressure Level	
	Daytime (07:00 to 23:00 hours) dB L_{Aeq} , 16 hour	Night-time (23:00 to 07:00 hours) dB L_{Aeq} , 8 hour
Plot 160 Living Room	29	22
Plot 160 Bedroom	32	25
BS 8233 Criteria	35 or lower	30 or lower

Table 1: Measured Internal Ambient Noise Levels

- 4.3 Measured noise levels are below the upper levels described in planning condition 13 (ref BS 8233: 2014) and are therefore compliant with the noise criteria.

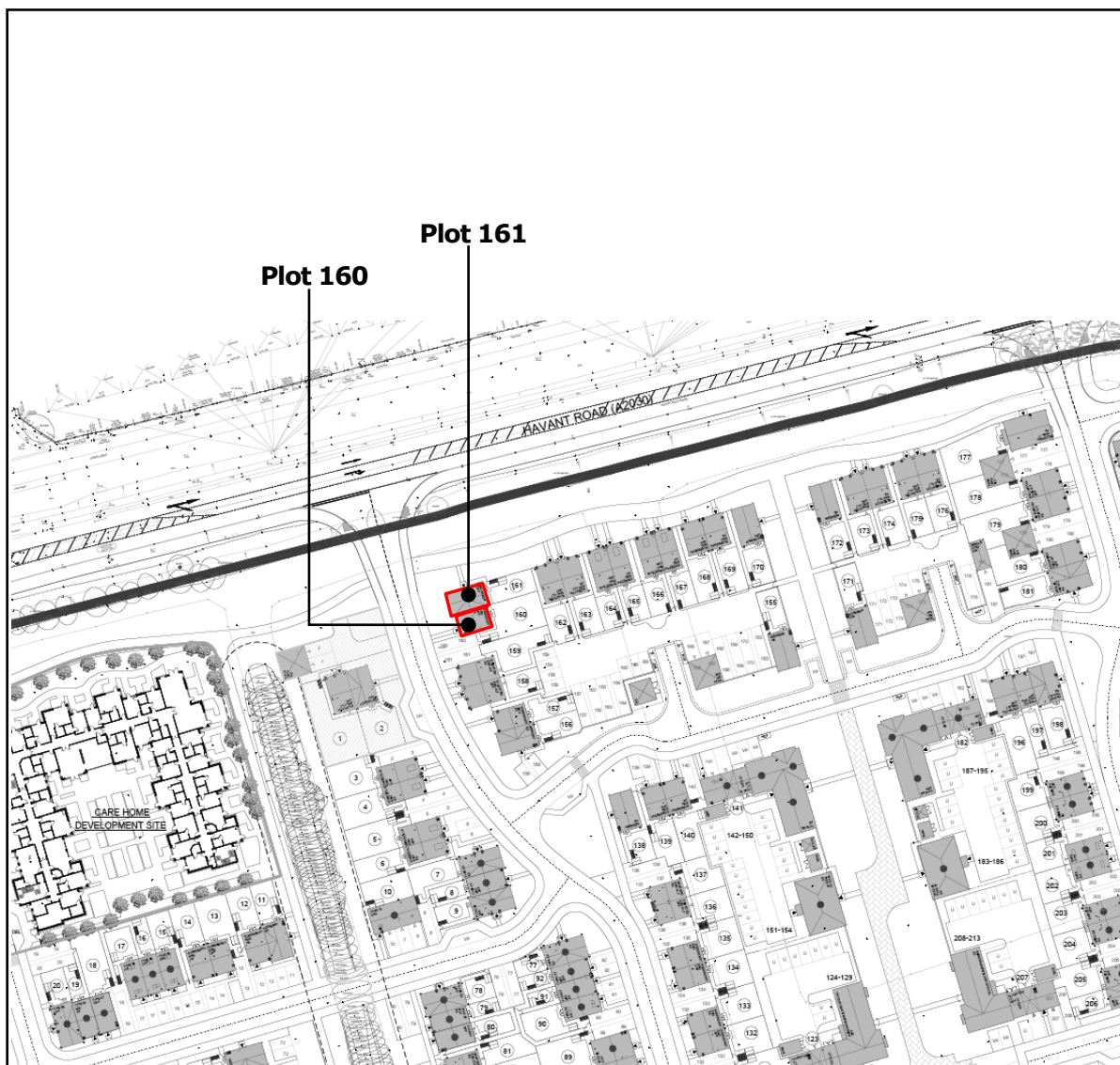
5.0 CONCLUSIONS

- 5.1 Internal noise measurements have been undertaken within plot 160 at the Harbour Place, Bedhampton development site, to address a pre-occupation planning condition for noise.
- 5.2 Measured noise levels within habitable rooms are below the upper limits of BS 8233: 2014 and therefore meet the requirements of planning condition 13.

I trust the above is in order. Please call if you have any queries.

Yours sincerely
For 24 Acoustics Ltd

Kiel Edwards BSc AMIOA
Consultant



Project: Harbour Place, Bedhampton	Title: Plot Locations		 24Acoustics
DWG No: Figure 1	Scale: N.T.S.	Rev: A	
Date: August 2021	Drawn By: KE	Job No: R9124-1	

APPENDIX A: ACOUSTIC TERMINOLOGY

Noise Levels

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.