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Southampton  
SO30 2UH

Date: 31st January 2020  
Reference: R7623-1 Rev 0

Dear Bradley

**RE: Saxon Corner, Havant Road, Emsworth – Pre-Occupation Noise Tests**

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 20 of the planning consent (planning reference 16/00774) sets out the following requirements in relation to the control of environmental noise for the new development:

*20. "Before first occupation, post validation testing shall be undertaken by a competent person to determine compliance with the noise impact assessment as provided by 24Acoustic [sic] (Technical report: R7238-1 Rev 0 dated 20 December 2017). Such testing can be achieved using sample dwellings, as per the measurement positions (as based on measurements done in 2012). This must 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".*

- 1.2 24 Acoustics' report R7238-1 Rev 0, as referenced in the planning condition, recommends maximum internal noise level criteria in line with BS 8233:2014 as follows:

- 35 dB  $L_{Aeq,16\text{hr}}$  in living rooms and bedrooms during the daytime (07:00 – 23:00);
- 30 dB  $L_{Aeq,8\text{hr}}$  in bedrooms during the night (23:00 – 07:00);
- Not exceed 45 dB  $L_{Amax,f}$  in bedrooms more than 10 to 15 times per night (23:00 – 07:00).

## 2.0 MEASUREMENT INSTRUMENTATION AND PROCEDURE

- 2.1 Measurements were undertaken between Tuesday 28th and Wednesday 29th January 2020 in the ground floor living room and first floor bedroom 1 of Plot 141; both rooms face Havant Road to the south and are therefore representative of the highest noise levels from road traffic noise, as shown in Figure 1.
- 2.2 The measurements were undertaken within the completed, unfurnished rooms with the windows closed and trickle vents open. The octave band reverberation times were measured in both rooms.
- 2.3 The following instrumentation was used:
- 1 × Rion precision grade Type 1 sound level meter Type NL-52;
  - 1 × Rion precision grade Type 1 sound level meter Type NL-32;
  - Norsonic acoustic calibrator Type 1251.
- 2.4 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.
- 2.5 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 Short periods of the daytime ambient noise levels were affected by construction activity and site traffic. These periods have been removed from the data analysis.
- 3.2 As the rooms were unfurnished, the measured noise levels have been normalised using the measured reverberation times, to a reverberation time of 0.5 seconds in accordance with BS 8233:2014.
- 3.3 The overall corrected results for daytime and night-time periods are summarised in Table 1.

| Room                 | Sound Pressure Level (dB)                    |                            |                           |
|----------------------|----------------------------------------------|----------------------------|---------------------------|
|                      | Daytime<br>$L_{Aeq,16hr}$<br>(07:00 - 23:00) | Night-Time (23:00 - 07:00) |                           |
|                      |                                              | $L_{Aeq,8hr}$              | Typical $L_{Amax,f,5min}$ |
| Plot 141 Living room | 35                                           | N/A                        | N/A                       |
| Plot 141 Bedroom     | 34                                           | 28                         | 40                        |
| <b>Criterion</b>     | <b>≤ 35</b>                                  | <b>≤ 30</b>                | <b>≤ 45</b>               |

**Table 1:** Summary of measured ambient noise levels (corrected for reverberation).

- 3.4 24 Acoustics considers the typical  $L_{Amax,f,5min}$  value to be the tenth highest value recorded during the given measurement period.
- 3.5 The noise measurement results in Table 1 demonstrate that the noise levels within the development achieve the requirements of Condition 20.

## 4.0 CONCLUSIONS

- 4.1 Noise measurements have been undertaken within Plot 141 of the Saxon Corner development on Havant Road, Emsworth, to address the requirements for noise break-in set out in Condition 20 of the planning consent.
- 4.2 The noise measurement results confirm that noise levels within habitable rooms comply with the requirements of Planning Condition 20.

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

Yours sincerely,  
**For 24 Acoustics Ltd**

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|-----------------------------------------------------------|-------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------|
| <b>Project:</b><br>Saxon Corner, Havant Road,<br>Emsworth | <b>Title:</b><br>Southern portion of site plan. |                     | <br>24Acoustics |
| <b>DWG No:</b> Figure 1                                   | <b>Scale:</b> N.T.S.                            | <b>Rev:</b> 0       |                                                                                                      |
| <b>Date:</b> January 2020                                 | <b>Drawn By:</b> JM                             | <b>Job No:</b> 7623 |                                                                                                      |

## 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 dB is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dB. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dB 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.

## APPENDIX B – NOISE SURVEY RESULTS

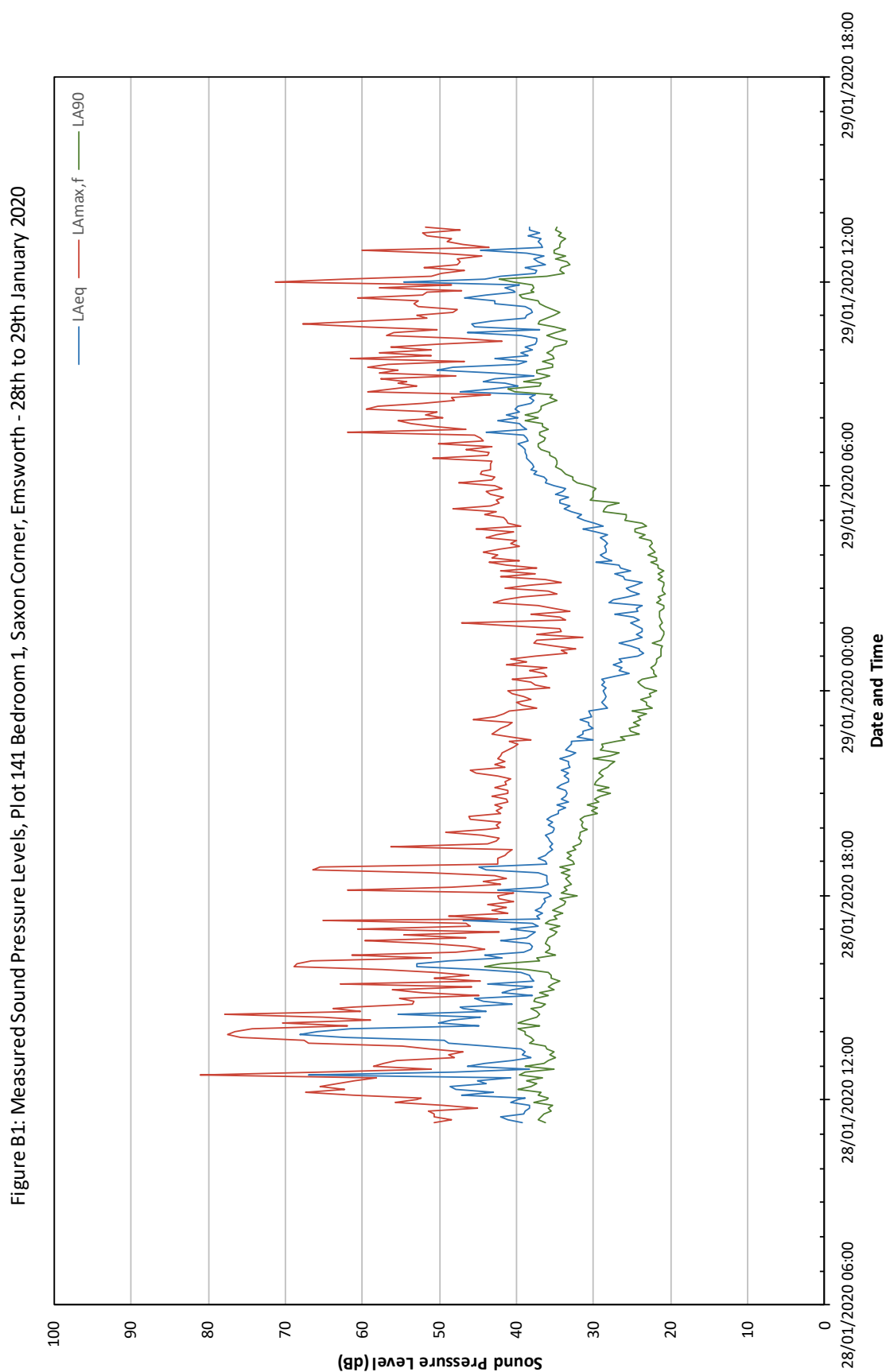


Figure B2: Measured Sound Pressure Levels, Plot 141 Living Room, Saxon Corner, Emsworth - 28th to 29th January 2020

