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Claire Inglis
Church Crookham Parish Council
Church Crookham Community Centre
Boyce Road
Church Crookham
GU52 8AQ

Date: 30th September 2016
Reference: R5884-2 Rev 2

Dear Claire,

Re: Noise Arising from Church Crookham Wheel Park

Please see below an assessment of noise arising from the wheel park at Church Crookham.

1.0 INTRODUCTION

1.1 24 Acoustics Ltd was instructed by Church Crookham Parish Council to review the noise arising from activities at the recently constructed wheel park. Concern has been expressed regarding noise arising from the wheel park facility at nearby residential properties in Guring Way.

1.2 This document is to be read in conjunction the Noise Impact Assessment (Reference R5884-1 Rev 1) which formed part of the original planning application (15/01754/FUL).

1.3 All noise levels in this report are given in dB relative to 20 µPa. A definition of the acoustic parameters described in this report is provided in Appendix A.

2.0 SITE DESCRIPTION

2.1 The wheel park is located on Guring Way and forms part of the open space in the wider development. In connection with the planning application for the wheel park, 24 Acoustics undertook a review of likely noise levels and made mitigation recommendations, including the construction of a perimeter screening bund.

2.2 Nearby properties of a residential nature are located in Guring Way (approximately 70m from the centre of wheel park).

2.3 It is understood that complaints have been received regarding activities in the wheel park during the late evening period. The main sources of noise are from the wheel park include the noise from skateboards and voices of the users.

2.4 A map showing the wheel park and surrounding properties is shown in Figure 1.

3.0 NOISE MEASUREMENTS

3.1 Noise measurements were obtained outside 25 Guring Way over an extended period. The following equipment has been used:

24 Acoustics INM Class 1 Precision Sound Analyser
Bruel and Kjaer Type 4231 Calibrator

3.2 Measurements were made externally in the car port, on the elevation of the property overlooking the wheel park. This location was selected as the closest available receptor and is considered a representative measurement location.

3.3 Peak noise levels are controlled by aircraft movements (typically departures) from Farnborough Airport. Other sources in the area include distant road traffic, army artillery fire and general wildlife. Noise from the wheel park includes noise from wheeled activities (eg, the strike of a skateboard on a rail) and also the users of the park. Noise from the users can vary significantly according to many factors, including age – with older users typically creating higher noise levels at more sensitive times.

3.4 The measurement results are shown in Appendices B1 to B3. Appendix B1 covers the last weekend of the school summer holiday – from Friday 2nd September to Sunday 4th September. Noise from the wheel park was mainly evident during the evening of Sunday 4th September, between the hours of 19:00 and 20:00. It should be noted that there were a handful of high noise levels from household activities close to the recording microphone.

3.5 Whilst wheel impact sounds were audible, these were at a comparatively low level at 52-55 dB $L_{Amax, f}$ and this is consistent with the predicted noise levels in our previous report at the planning stage.

3.6 Figure B2 shows the recorded levels from Monday 5th to Thursday 8th September. Peak events were controlled by aircraft movements and high noise events from the wheelpark were not evident during this period.

3.7 Figure B3 shows levels during the period Friday 9th to Monday 12th September. Noise from the wheel park was evident during the evening of Friday 9th September.

3.8 The principal maximum noise observed was from screams, measured at 65 dB $L_{Amax, f}$. Wheel park noise was also observed during the evening of Sunday 12th September where noise from shouting / screaming caused similar peak levels.

3.9 It is considered that the upper noise maximum noise levels of 65 dB $L_{Amax, f}$ (ie, from shouting and screaming) has the potential to cause disturbance and on this basis, mitigation measures are given in Section 4.

4.0 Recommendations

4.1 The following measures are recommended:

a) Construction of acoustic barrier. It is recommended that a 2.8m high barrier of minimum superficial weight 15kg/m^2 be constructed in accordance with the plan in Figure 2. There should be no holes or openings within the barrier. An outline design is shown in Appendix C. It is expected that, as a minimum, a reduction of 8 - 10 dBA would be achieved.

Suitable suppliers include South Coast Fencing and Jackson Fencing. There is no requirement for the barrier elevation toward the wheel park to be acoustically absorptive.

b) Promotion of good behaviour. It is understood that the Parish Council has commenced a programme of positive engagement with the users of the Wheel Park to promote respect and good behaviour towards others users and neighbours.

5.0 Conclusions

5.1 Noise measurements have been obtained at the nearest affected residential properties with the wheel park in use.

5.2 The measured levels from activities within the wheel park (ie, noise from skateboarding) is in line with previously predicted levels. Noise from users shouting and screaming is at a level which could cause disturbance though this should be considered as anti-social behaviour.

5.3 Whilst the noise directly associated with equipment being used on the wheel park is within acceptable levels, there is an opportunity to provide further mitigation measures that would assist in minimising the risk of disturbance from fair and reasonable use of the wheel park.

I trust the above is in order. If you have any queries, please do not hesitate to contact me.

Yours sincerely
For 24 Acoustics Ltd

Steve Gosling BEng (Hons) MIOA MAES
Principal Consultant

FIGURE 1 – SITE PLAN

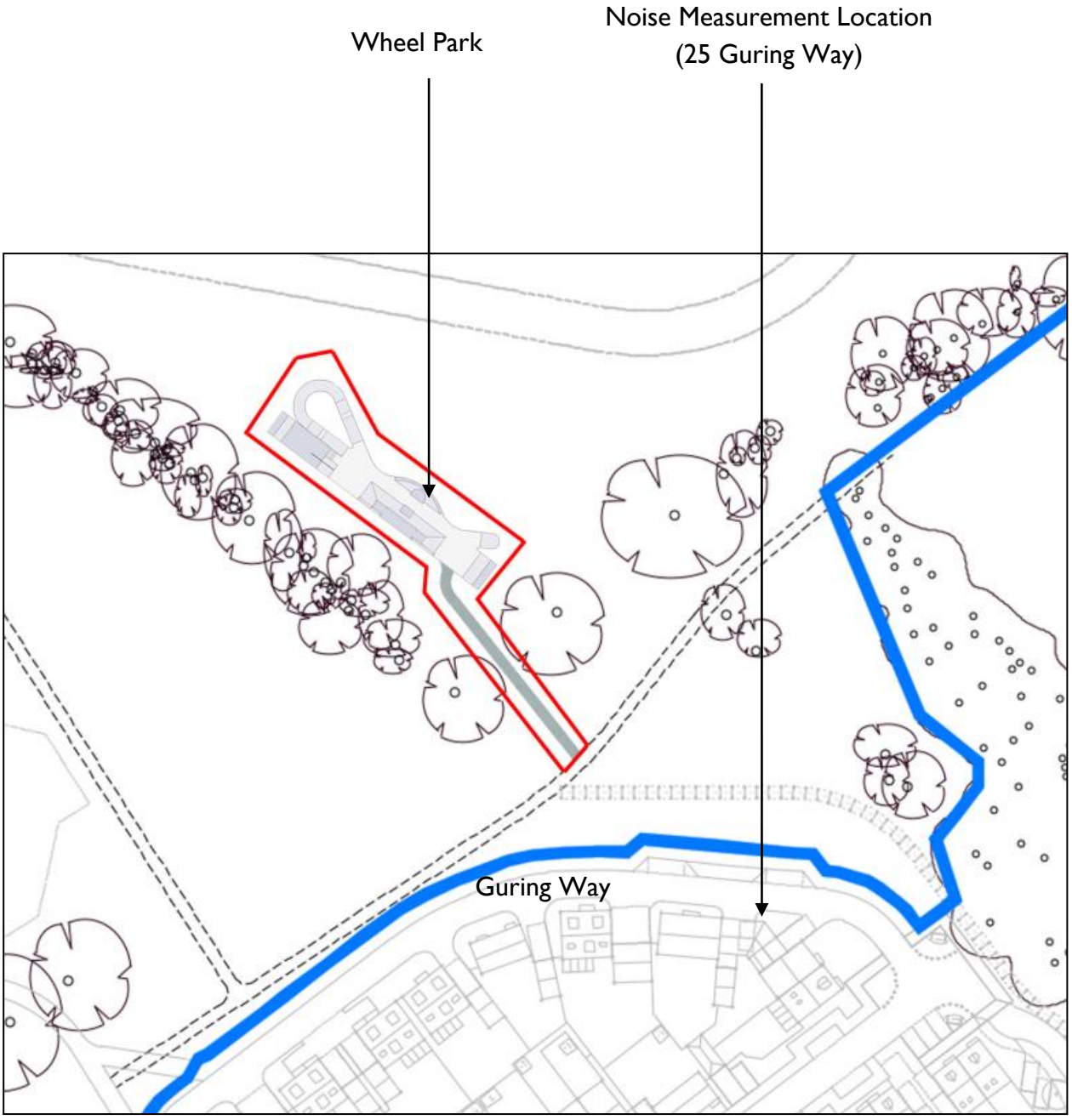
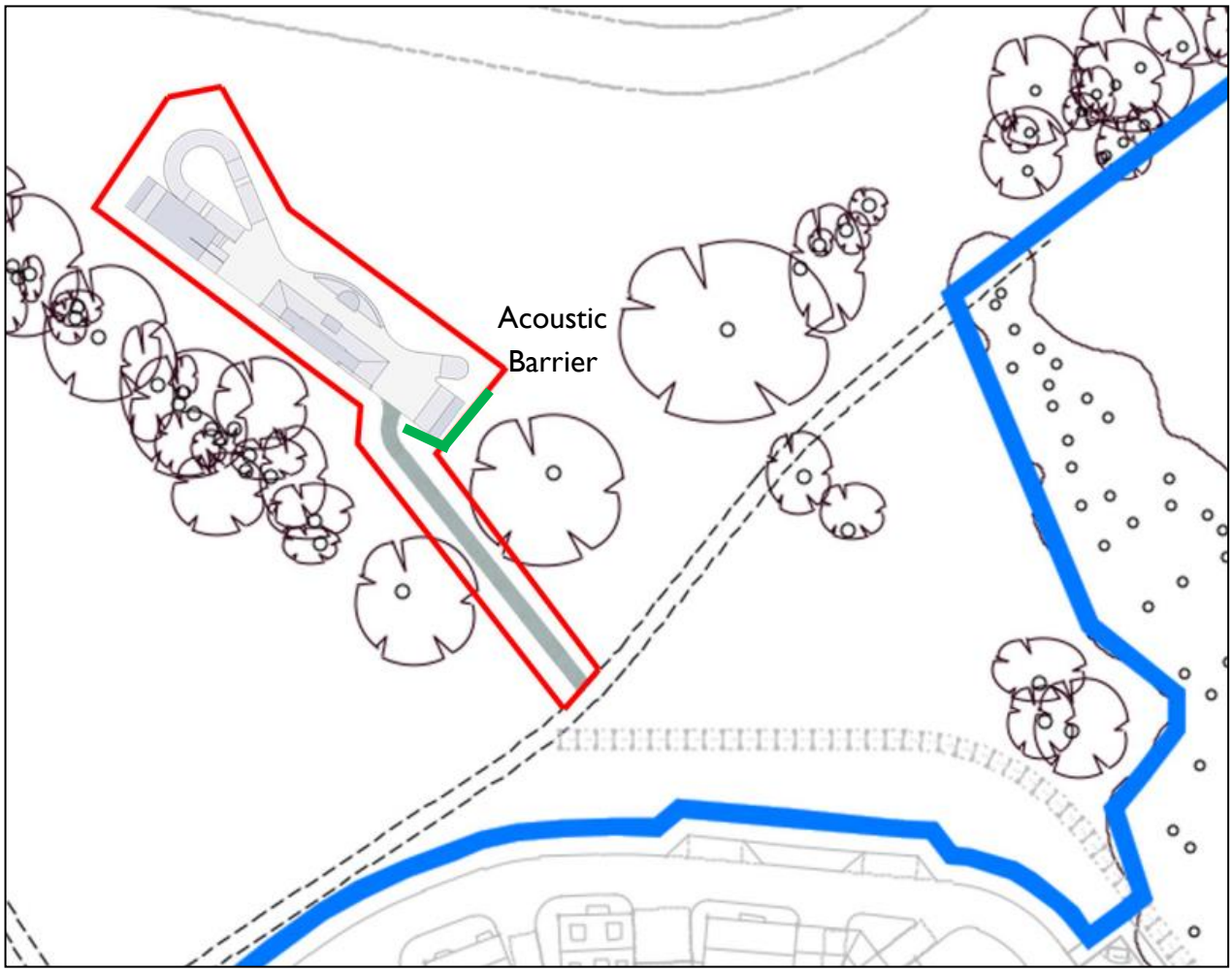


FIGURE 2 – ACOUSTIC BARRIER LOCATION



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 20 Hz (number of oscillations per second) to 20 kHz 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 important 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

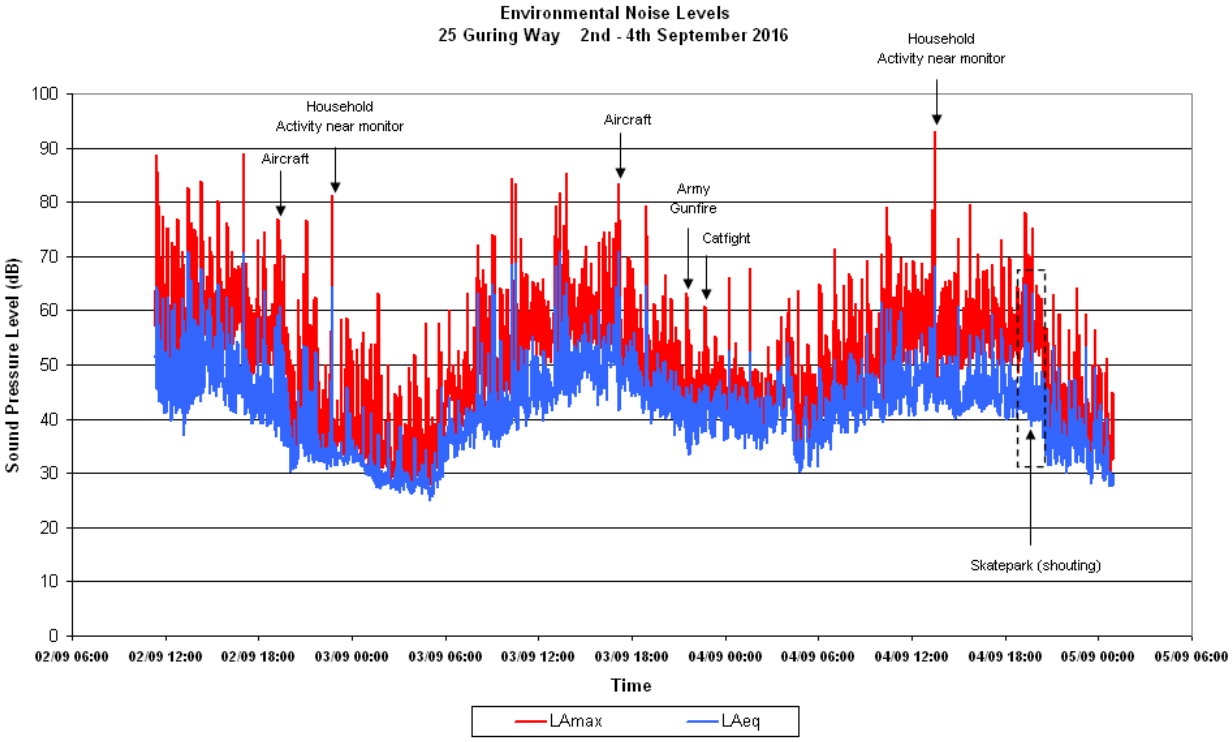
This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time internal, T, has the same mean square sound pressure as a sound under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

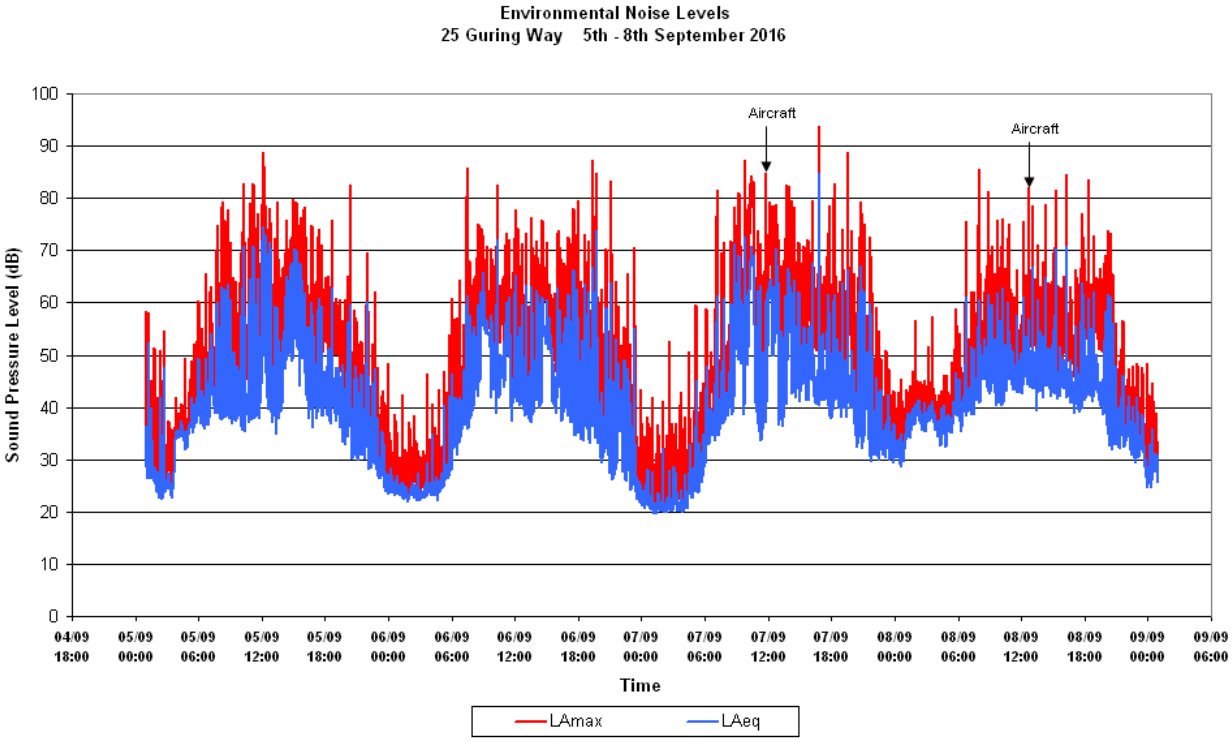
iii) The L_{A90} noise level

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.

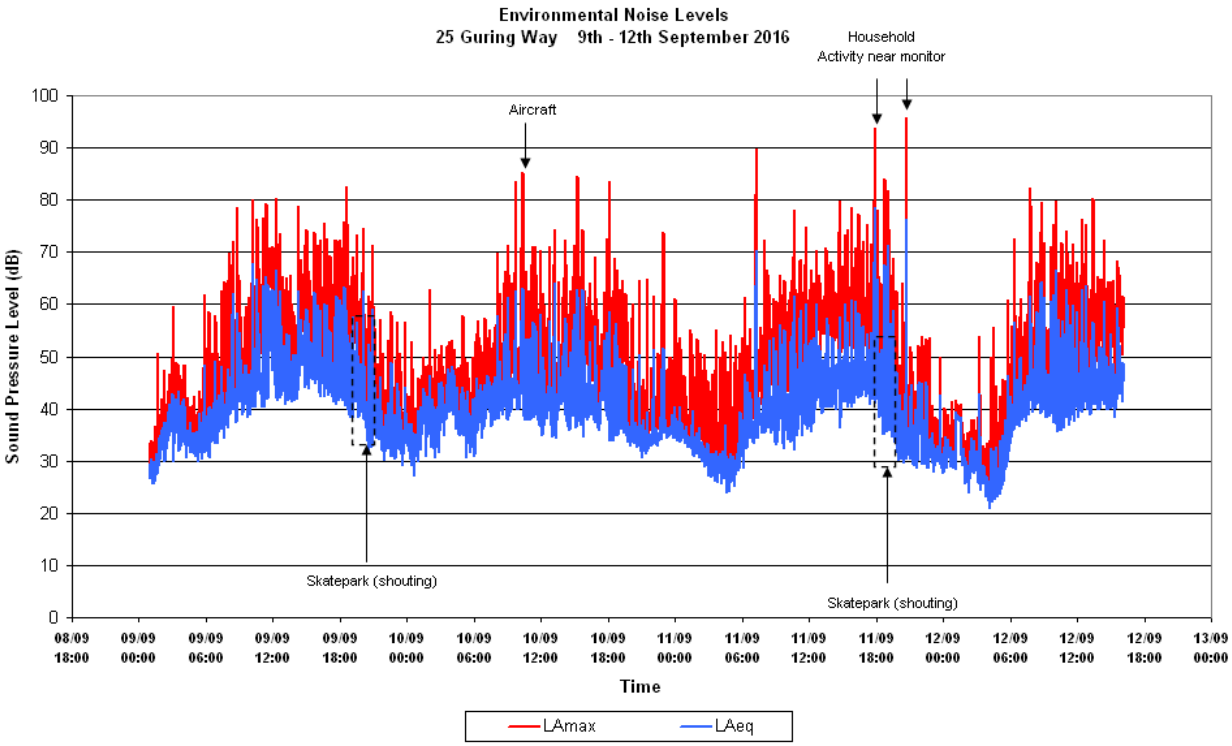
APPENDIX B1: NOISE MEASUREMENTS



APPENDIX B2: NOISE MEASUREMENTS

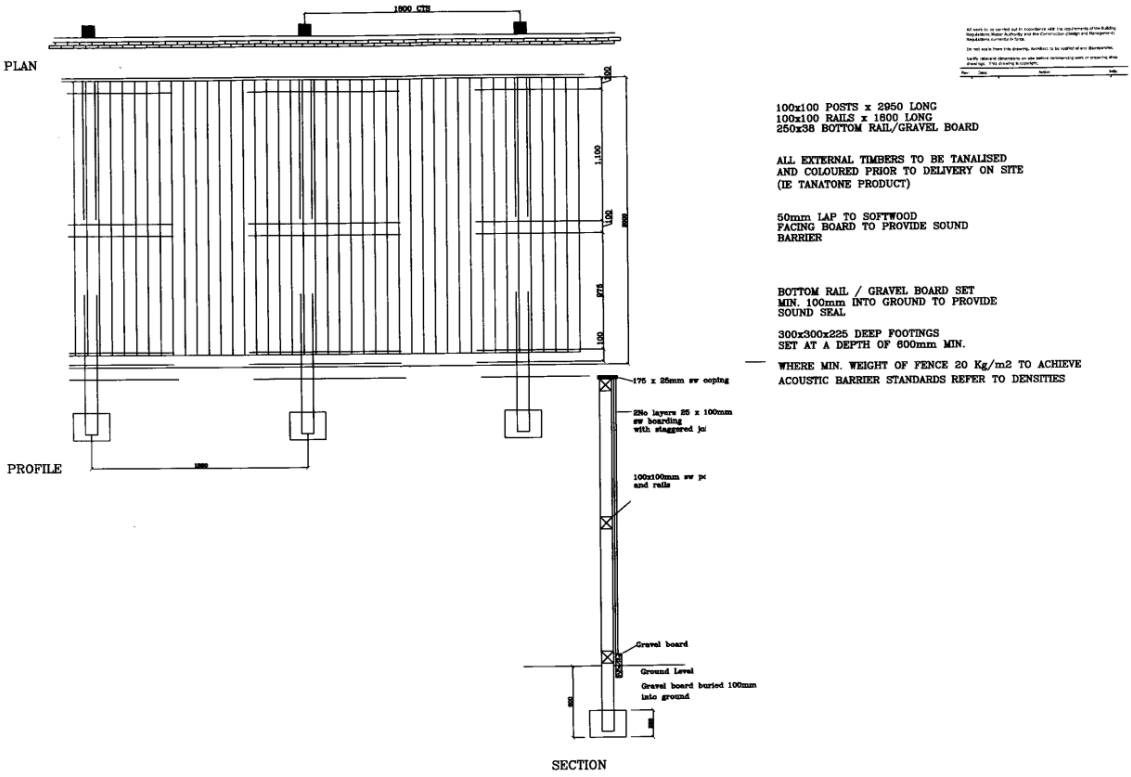


APPENDIX B3: NOISE MEASUREMENTS



APPENDIX C: ACOUSTIC FENCE

Acoustic Fence Construction



Project: Church Crookham	**Title:** 2.8m Acoustic Fence - 15 kg/m2		
DWG No: Figure 1	**Scale:** N.T.S.	**Rev:** A	
Date: Sep 2016	**Drawn By:** SG	**Job No:** -	