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Rob Harris
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Date: 16th November 2009
Reference: R3037-1 Rev 1

Dear Mr Harris,

Re: Proposed Club Quarters Hotel, 61 Lincoln's Inn / 42 Kingsway – Plant Noise Assessment

Further to our recent site visit and measurements, we are pleased to submit our assessment and findings. I have also reviewed the preliminary plant selection (shown in Appendix A) and consider that this will meet the specified limit given below.

1.0 INTRODUCTION

1.1 24 Acoustics Ltd has been instructed by Masterworks to undertake an assessment of ambient noise levels at the proposed new Club Quarters Hotel at 61 Lincoln's Inn / 42 Kingsway, Central London.

1.2 This report presents the results of the assessment, following a background noise survey undertaken in the period 9th to 11th August 2009.

1.3 All noise levels in this report are presented in dB relative to 20 μPa.

2.0 SITE DESCRIPTION, BACKGROUND AND PROPOSED OPERATION

2.1 The new hotel will comprise building services plant (scope to be defined) which will run at various times of the day.

2.2 The nearest sensitive properties to the proposed hotel are in Lincoln's Inn Fields to the rear of the site. Figure 1 shows the proposed development plan and the location of the nearest properties (office use). There were no residential properties identified within 20m of the proposed hotel.

3.0 PLANT NOISE ASSESSMENT CRITERIA AND CONSULTATION

PPG 24 (Planning and Noise)

3.1 Planning Policy Guidance (PPG) 24 [Reference 1] provides guidance on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the administrative burdens of business.

3.2 The PPG gives guidance to local authorities in England on the use of their planning powers to minimise the adverse impact of noise. It outlines the considerations to be taken into account in determining planning applications; both for noise-sensitive developments and for those developments which will generate noise.

BS 4142 (Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas)

3.3 For noise from industrial developments, PPG 24 recommends the use of British Standard 4142 [Reference 2].

3.4 BS 4142 provides a method for rating the effects of industrial noise on mixed residential and industrial areas. The standard advocates a comparison between the typical measured L_{A90} background noise level and L_{Aeq} noise level from the source being considered. For rating purposes if the noise source is tonal, intermittent or otherwise distinctive in character, a rating correction of +5 dB is applied. The standard states that a difference between the rating level and the background level of +10 dB indicates that 'complaints are likely', a difference of +5 dB is of 'marginal significance' and a difference of −10 dB is a 'positive indication that complaints are unlikely'.

Local Authority Requirements

3.5 The Local Planning Authority, Camden Council, has advised the cumulative noise level from all plant should be 5 dB below typical background noise levels during the operation of the plant when assessed at the nearest residential window.

3.6 For non-residential properties (eg, offices), it is usual to ensure that the overall noise level does not exceed 50 dBA. On this basis, the internal noise level (assuming an open window) would be approximately 15 dBA lower which would give a satisfactory resultant level of 35 dBA.

4.0 BACKGROUND NOISE SURVEY

Equipment and Procedure

4.1 Background noise measurements were taken over the period of the 9th to 11th September 2009. Measurements were undertaken at two locations, representative of the nearest affected properties (as shown in Figure 1).

4.2 The instrumentation was set up to monitor noise levels continuously and store data in 5 minute samples (using a fast time weighting) in terms of the overall A-weighted L_{eq} and L_{90} sound pressure levels. A definition of the acoustic terminology used in this report is provided in Appendix A. The following instrumentation was used during the survey:

- Norsonic Type 116 precision grade sound level meter (position 1);
- Rion Type NL31 precision grade sound level meter (position 2);
- Bruel and Kjaer Type 4231 acoustic calibrator.

4.3 Calibration was checked before and on completion of the measurements and no drift was recorded. The weather during the survey was dry with wind speeds below 5 m/s. Noise measurements were made in accordance with BS 7445: 1991 'Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use'.

Results

4.4 The results of the environmental surveys are presented in graphical format in Figures 2 and 3, showing the recorded average $L_{Aeq\ (5min)}$ and background $L_{A90\ (5min)}$ values.

4.5 With reference to the measured data, the following typical background noise levels were measured:

Position 1 daytime operation (07:00 – 23:00)	55 dB L_{A90}
Position 1 (24 hour operation)	54 dB L_{A90}
Position 2 daytime operation (07:00 – 23:00)	52 dB L_{A90}
Position 2 (24 hour operation)	47 dB L_{A90}

Assessment

4.6 Based upon the requirements of the Local Planning Authority, noise from the plant should not exceed the following levels as measured at 1 metre from the windows of the nearest affected residential properties:

Position 1 daytime operation (07:00 – 23:00)	50 dB L_{A90}
Position 1 (24 hour operation)	49 dB L_{A90}
Position 2 daytime operation (07:00 – 23:00)	47 dB L_{A90}
Position 2 (24 hour operation)	42 dB L_{A90}

4.7 In the event that only commercial offices are affected (understood to be the case) then the overall noise level at the nearest affected window should not exceed 50 dB L_{A90} over a 24 hour period.

4.8 In both cases, a 5 dB reduction would apply to the above figures in the event that noise from the plant is tonal (or contained other noticeable characteristics), as assessed at the nearest affected properties.

5.0 CONCLUSIONS

5.1 An assessment of background noise levels has been carried out at the proposed Club Quarters development at 61 Lincoln's Inn / 42 Kingsway Central London, under the requirements of the Local Planning Authority, Camden Council.

5.2 Based upon the survey results and discussions with the Local Planning Authority, limiting criteria applicable to the cumulative noise level from the proposed plant have been established.

5.3 Once plant details are available, it will be necessary to undertake a series of calculations to ensure that the above limits are achieved.

I trust the above is satisfactory. Should you have any further questions or require assistance, please do not hesitate to call.

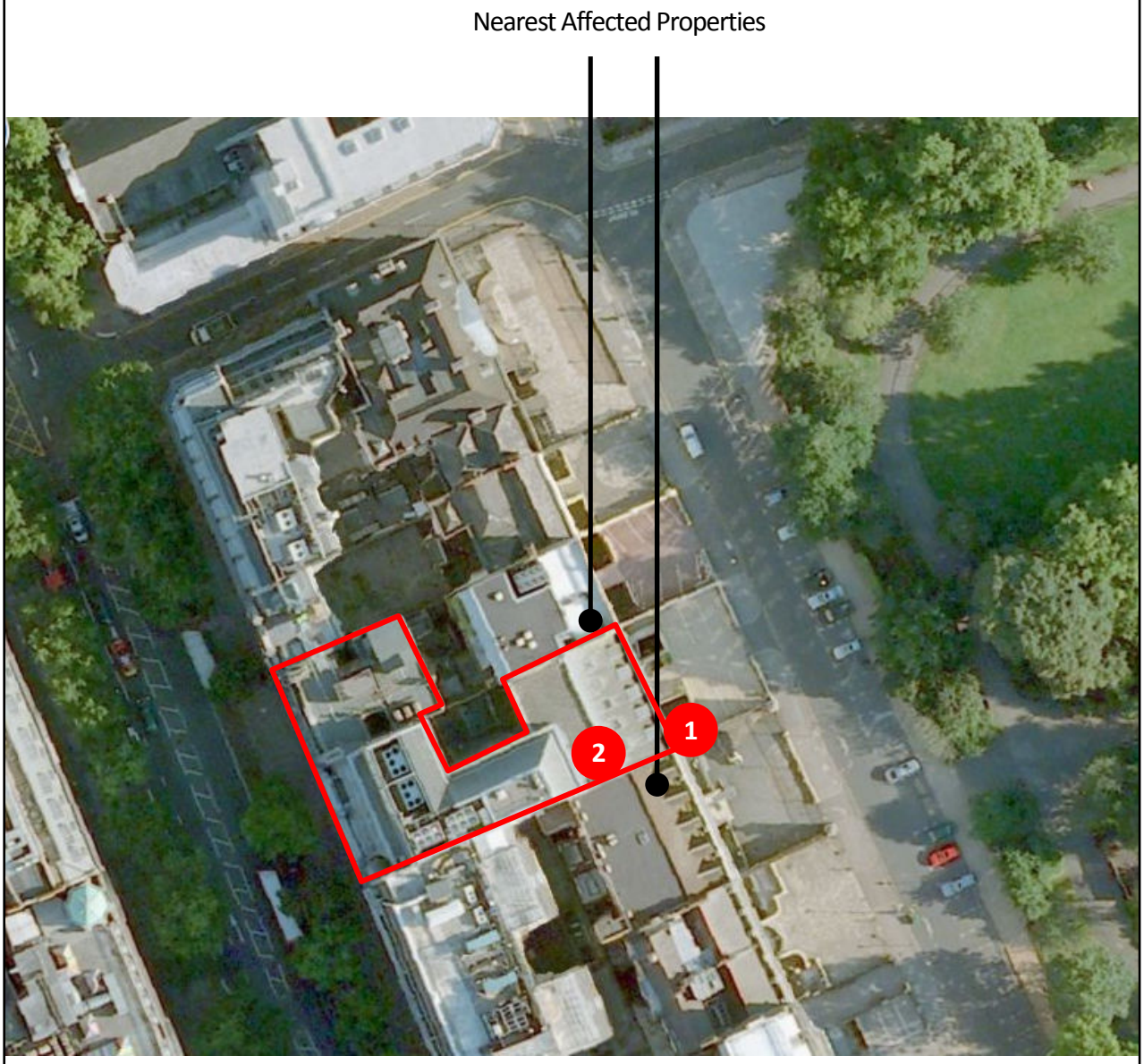
Yours sincerely,

Steve Gosling BEng MIOA MAES
Principal Consultant

REFERENCES

1. Department of the Environment. Planning Policy Guidance (PPG) 24, Planning and Noise, September 1994.

2. British Standards Institution. British Standard 4142. Method for rating industrial noise affecting mixed residential and industrial areas, 1997.



Key

2 Noise Monitoring Positions

Project: Club Quarters, Kingsway	**Title:** Site Plan and Measurement Positions	24Acoustics www.24acoustics.co.uk
DWG No: Figure 1	**Scale:** N.T.S.	**Rev:** A
Date: 15/09/2009	**Drawn By:** SG	**Job No:** 3037-1

Figure 2: Environmental Noise Survey (Position 1)

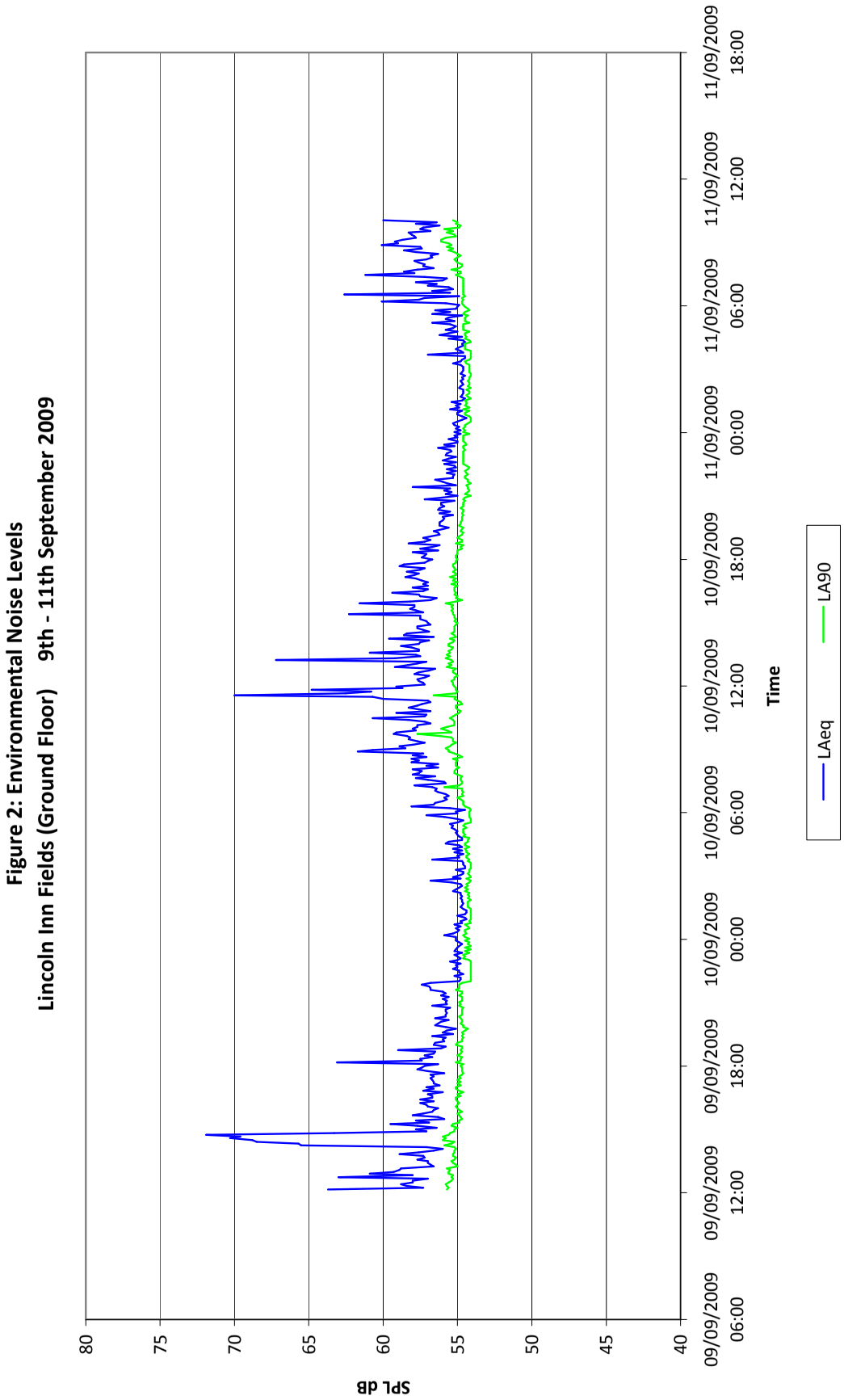
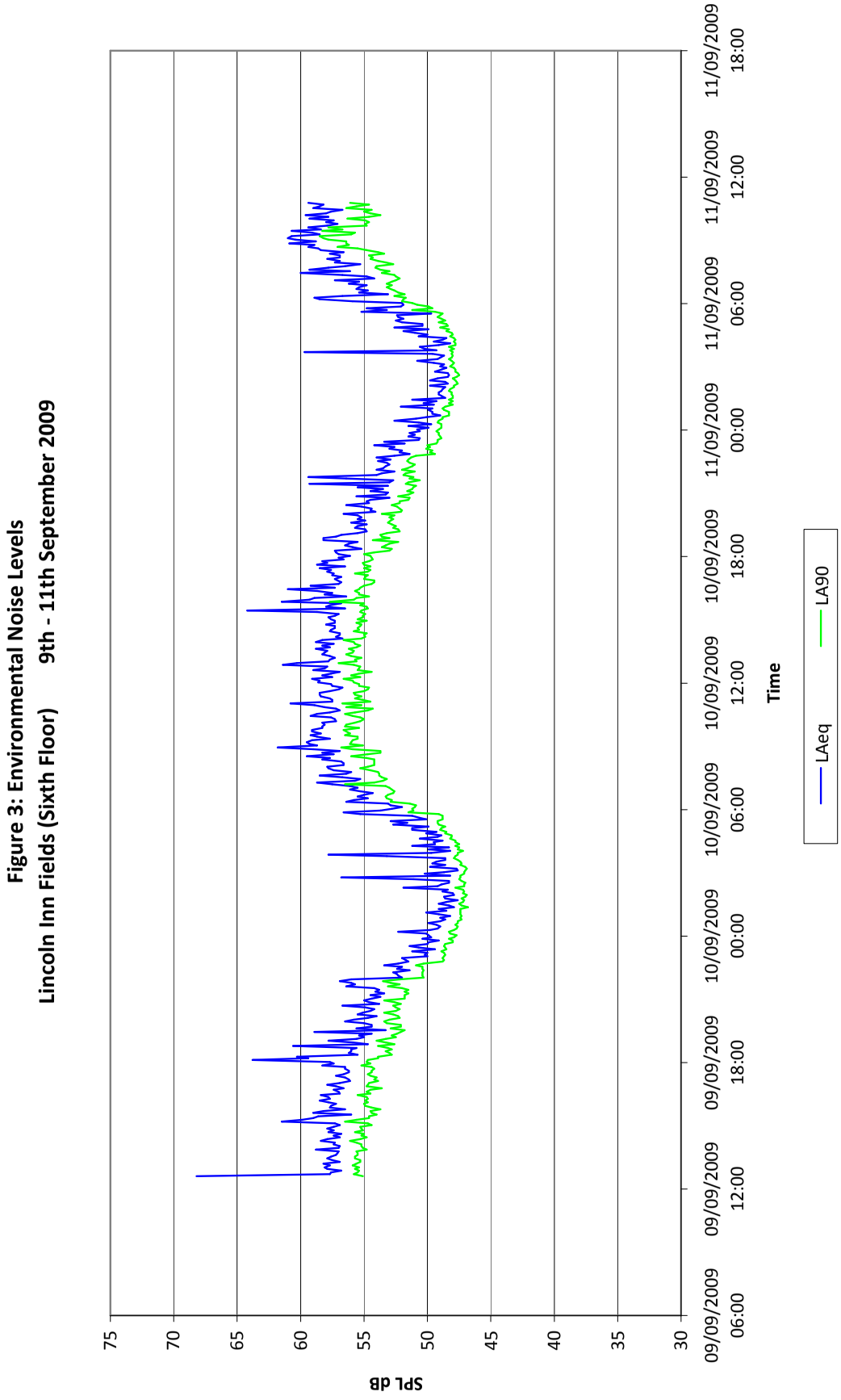


Figure 3: Environmental Noise Survey (Position 2)



APPENDIX A – Summary of Proposed Plant

A.1 As plant for the proposed building has yet to be selected, Elementa has provided 24 Acoustics with a list of likely equipment for the scheme.

A.2 The proposed plant is summarised below:

Generator - Client to confirm requirement.

Boiler Room & CHP - 8 x 5 x 2.5m high including booster set.

Condenser units - 750 x 750 x 1600mm high units. 16 No. estimated.

Kitchen vent - Axial on riser (acoustics to be carefully considered). Larger AHU required low level 600 x 600 duct to roof.

Restaurant - Some extract via transfer into kitchen. The rest via an AHU that supplys and exhausts via lightwells/architectural louvres at the rear of the building.

Meeting/Conference - As restaurant

Club Room - Natural ventilation with local VRF cooling

Bedrooms - Supply and extract AHUs at roof level.

A1 / A3 units - Ground unit to be within unit. Basement levels to be supplied by AHU's above ceiling back of house (above kitchen etc.)

Lifts - Machine room-less lifts.

A.3 Having reviewed generic data for this plant, 24 Acoustics can confirm that it will be straightforward to achieve the proposed limits identified in section 4.2 of the report.