



Acoustic Consultancy Report

Environmental Noise Survey

Report Prepared For

Marldon

21b Brownlow Mews

RECEIVED
27 SEP 2006

Date

27th September 2006

Report Reference

52596 E3

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Project: 21b Brownlow Mews

Reference: 51596-E3
Date: 27th September
2006

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Appendix A Calculations

1.0 Introduction

Following our recent report for 21b Brownlow Mews referenced 52596-E2 dated the 22nd of September, an additional assessment is required for the building in front of the development number 23 Brownlow Mews. The assessment is required to calculate the effect of the proposed condensers on a number of windows facing the development. No. 23 Brownlow Mews has a number of rooms which will be effected by the condensers. Two skylights are in student treatment rooms, one is in a kitchen and the other, is in a yoga studio.

The main requirement for the assessment is for the treatment rooms and will form the basis for our calculations.

2.0 Evaluation of Design Criteria

2.1 Commercial Design Criteria (BS 8233:1999)

Design criteria for non-residential buildings have been derived from BS8233:1999.

For typical office environments, the rating level is 55 dB(A) at 1m from the façade of the receiver premises.

However as the rooms usage is designated as treatment rooms which may require a reduced criteria BS8233 indicates a requirement for bedrooms to be 35dB(A) internally and stipulates a reduction for an open window to be 10dB(A). Therefore for a bedroom to achieve 35dB(A) inside, the noise level outside should be no more than 45dB(A). Following discussions with Anona Arther of Camden Council, a level of 45dB(A) at 1m from the skylight windows will be acceptable.

Rating level = 45 dB(A)

2.2 Design Rating Levels

The design rating levels to be adopted for this project are set out in the table below.

Table 1: Noise Rating Level

Receiver premises	Approximate distance from plant	Rating Level $L_{Ar,T}$ (07:00 – 23:00)
No 23 Brownlow Mews	4.5m	45dB

3.0 Review of Proposed Plant Installation

The new plant is to be installed as indicated on the drawing ref: 1346 / 18

Calculations of the predicted noise levels have been carried out with the appropriate corrections for geometric attenuation, barrier effect, reflective surfaces and multiple source addition.

4.0 Plant Noise

The proposed plant at 21b Brownlow Mews are shown in table 2.

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Table 2: Plant Details

Type	Model	No Off
Condenser Unit	REYQ8M	4

Table 3 shows the results of the plant noise calculations. The calculations used to predict the plant noise level are shown in Appendix A.

Table 3: Predicted Sound Pressure Level (Un-attenuated)

Receiver	Predicted Noise Level L_{Aeq}	Rating Noise Level $L_{Ar,T}$	Excess over Rating Noise Level
No. 23 Brownlow Mews	60 dB	45 dB	15 dB

5.0 Noise Mitigation Scheme

It is necessary to introduce a suitable noise mitigation scheme by means of acoustic enclosure, with a minimum performance as shown in table 4 below.

Table 4: Acoustic Enclosure Requirements

Minimum Performance	Minimum sound reduction indices SRI								
	63	125	250	500	1000	2000	4000	8000	Hz
	11	12	14	18	20	23	25	26	dB

The supplier of any acoustic enclosure shall warrant that it provides the required sound reduction performance.

In our opinion, the solution of this problem will now need the services of a noise control company specialising in bespoke solutions to non-standard situations.

Such a company would visit the site, and attempt to arrive at an economic solution, taking into account all the parameters of this particular situation.

The problems of air flow pressure drop etc, applicable to this equipment will all need to be taken into account.

Such a company is the PAR Noise Control

A Division of:

Caice Acoustic Air Movement Ltd
258 Shinfield Road
Reading
RG2 8EY

Tel: 01189 879300
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The performance required to meet the external criteria should be achievable using standard panel construction for an acoustic enclosure.

6.0 Resultant noise level with acoustic enclosure

The resultant noise level with an enclosure of the performance of enclosure detailed above will achieve the noise level of the shown in table 5 below at 1m from the skylights.

Table 5: Predicted Sound Pressure Level (attenuated)

Receiver	Predicted Noise Level L_{Aeq}	Rating Noise Level $L_{Ar,T}$	Excess over Rating Noise Level
No. 23 Brownlow Mews	44 dB	45 dB	0 dB

7.0 Conclusion

An environmental noise survey has been undertaken in order to establish the existing background noise levels local to the site generally in accordance with the method contained within BS4142: 1997.

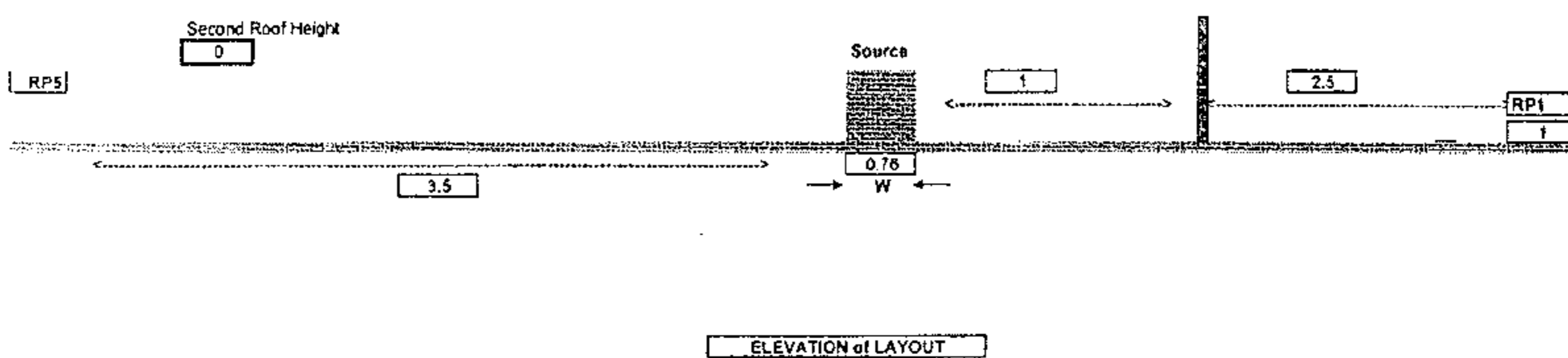
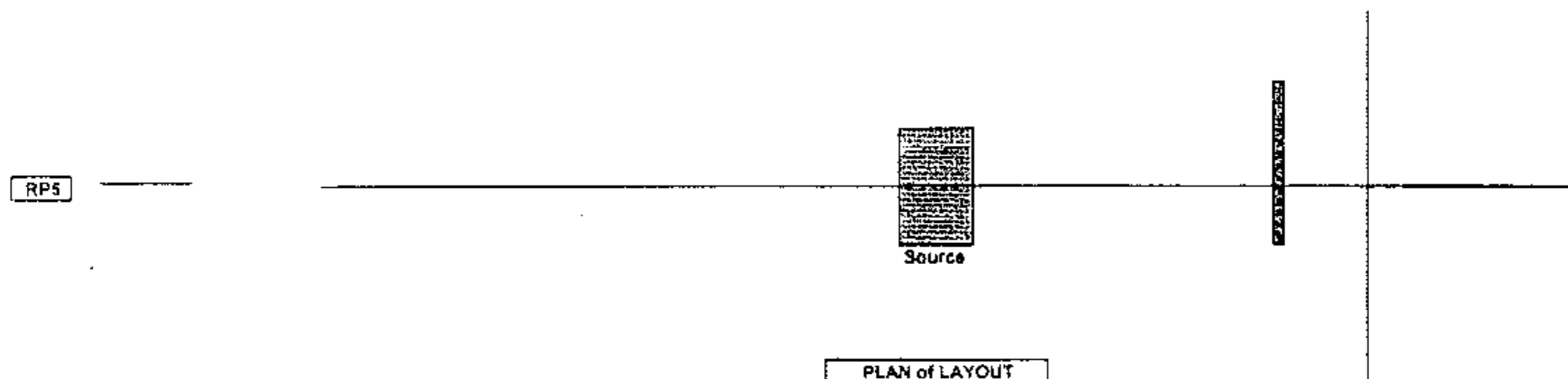
The implementation of the noise mitigation scheme outlined within this report and the attached appendices will be sufficient to ensure the risk of justifiable complaints of noise nuisance from the nearest affected residents is minimised, and will achieve consensus with Local Authority policy with respect to environmental noise emissions.

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Appendix A Calculations

Client: Mardon File No: 52596
Project: 21b Brownlow Mews London Task: Screen requirements
Plant Considered Condensers



Client: Maridon File No: 52596
Project: 21b Brownlow Mews London Task: Screen requirements
Plant Considered: Condensers

SELECT RECEIVER LOCATIONS

	RP1 or RP1A	RP2	RP3 or RP3A	RP4 or RP4A	RP5 or RP5A
Selected Yes Y or No N	y	n	n	n	y
Central or Angled C/A	c		c	c	c
	RP1	RP2	RP3	RP4	RP5

PLANT DIMENSIONS

Source Dimensions W 0.76 x H 1.6 x L 0.93 No of Sources 4

NF1 0.2419 m
NF2 0.298 m
OK

BARRIER DETAILS

Minimum Barrier Width 2.73
Actual Barrier Height 2.5

Check location of other units

INPUT SOUND DATA

FALSE Lp P or Lw W
WIP w Sound Power Level

	63	125	250	500	1k	2k	4k	8k	dB(A)	Notes
	0	83	79	77	71	67	62	57	78	REYQ8M

Lowest Applied Noise Red'n due to Noise Control Measures

CALCULATION RESULTS

Resultant Plant Level at 3.5 m RP1 -28 54 48 42 34 27 20 14 44
Any additional Lp at RP1

Overall Lp at	RP1	0	54	48	42	34	27	20	14	44
Criteria	NR 56	80	71	64	59	56	53	51	50	63

Resultant Plant Level at 3.5 m RP5 -17 66 62 60 54 50 45 40 60
Any additional Lp at RP1

Overall Lp at	RP5	0	66	62	60	54	50	45	40	60
Criteria	NR 56	80	71	64	59	56	53	51	50	63

Prepared by: Date: