

**CURNOCK ESTATE  
PRATT STREET,  
NW1 0BY.**

**ENVIRONMENTAL NOISE LEVELS**

Our Ref: CPT/071013/001

Report prepared on behalf of:

Written By:

Clifford Tucker AMIOA

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Enc. Calibration Certificate

## 1.0 Brief

- 1.1 To carry out environmental noise level measurements in order to establish the prevailing environmental noise levels enjoyed by the site.
- 1.2 From these measurements to assess the likelihood of complaint in relation to noise from the boiler flue.
- 1.3 To offer recommendations as to the general type of acoustic hardware required to mitigate the noise levels if necessary.
- 1.4 We have excluded the following from our Brief:
  - Construction noise
  - Any Building Regulations noise considerations.
  - Health & Safety acoustics

## 2.0 Executive Summary

- 2.1 Environmental noise measurements have been taken adjacent to the boiler flue at the Curnock Estate, Pratt Street, London NW1 0BY.
- 2.2 A minimum noise level of 54 (54.3) dB LAeq, 5 mins has been measured with one boiler operational.
- 2.3 A minimum noise level of 48 (47.7) dB LAeq, 5 mins has been measured with the boilers off.
- 2.4 With the boilers operational there is an excess of 6 dB-A over the ambient noise level with the boilers not operational, however, during our visit only one boiler was operational. The excess will increase to at least 9 dB with two boilers operational simultaneously (the maximum envisaged).
- 2.5 This is a positive indication that complaints are likely.
- 2.6 It will be necessary to establish a Rating Level in relation to the closest potential point of complaint (The Assessment Position) by undertaking a survey pursuant to BS4142.
- 2.7 The Local Authority will require the “new” noise to be attenuated down to not less than 10 dB below the Rating Level.
- 2.8 The required reduction is likely to be of the order of 30 dB. This will require some significant noise control hardware.
- 2.9 A full analysis of the flue system should be undertaken to establish the source (burner noise or regenerated noise) and appropriate hardware selected to control this such that the Rating Level is not exceeded during normal operational duties.
- 2.10 Whilst our survey was primarily related to atmospheric noise it was noted that the flue system is not resiliently hung from the plantroom ceiling slab. Additionally the wall penetrations are not sleeved thus the flue system bears down directly on the building structure. As atmospheric noise is attenuated the effect of this might become more dominant within the building and you should allow for the flue system to be resiliently hung from the plantroom ceiling slab and the wall penetrations to be via resilient sleeves at least as a precautionary measure.

### 3.0 Location

- 3.1 The Curnock Estate is a residential estate located in Pratt Street, NW1 0BY.
- 3.2 It consists of several residential buildings, mostly to four stories.
- 3.3 The site is bounded by Georgina Street the North; Royal College Street to the East; Pratt Street to the South; and Camden Street to the West.

SPEK NOISE CONTROL LTD

#### 4.0 Instrumentation

4.1 The instrumentation used was as follows:

- Rion NL-32/NX-22RT Class 1 Environmental Noise Analyser
- Rion NC74 Class 1 Acoustic Calibrator.
- Rion 12mm Condenser Microphone & Foam Windshield

4.2 The instruments carry a current Laboratory Calibration Certificate (a copy of which can be found at the end of this report) and were additionally electrically and acoustically hand calibrated before/after readings and found to be correct.

5.0 Time; Date: & Environmental Conditions of Survey

5.1 The site survey was conducted between 11.30 hrs on 2<sup>nd</sup> October 2013 and 12.00 2<sup>nd</sup> October 2013.

5.2 The weather throughout the survey period was overcast with occasional light rain & no significant wind.

5.3 The site engineer was Cliff Tucker.

## 6.0 Methodology

- 6.1 Measurements were taken adjacent to the bottom of the external boiler flue.
- 6.2 The measurements consisted of 5 minute LEQ's measuring the overall level in dB-A and the Octave Band Centre Frequencies from 63 Hz to 8 kHz.
- 6.3 Measurements were taken with one boiler operational and also with no boilers operational.
- 6.4 The levels were then compared to see what excesses existed, if any.
- 6.5 The measurements are considered to be representative of the day time noise levels enjoyed at the Assessment Position. They do not reflect the night time levels at which time the background noise level is likely to be 10 dB lower than the day time period.



## 7.0 Results & Analysis

The table below sets out the levels during the survey.

	<b>63</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1k</b>	<b>2k</b>	<b>4k</b>	<b>8k</b>	<b>dB-A</b>
Boiler On	65.4	61.3	59.2	49.5	46.8	43.3	37.9	32.8	54.3
Add for 2 no. Boilers	3	3	3	3	3	3	3	3	3
Resultant	68.4	64.3	62.2	52.5	49.8	46.3	40.9	35.8	57.3
Boiler Off	58.0	54.1	48.5	46.0	42.1	36.9	29.7	24.5	47.7
Level Difference	10.4	10.2	13.7	6.5	7.7	9.4	11.2	11.3	9.6

The measured levels are day time levels. At night time the background noise level is likely to reduce by approximately 10 dB giving an excess of 20 dB.

The Local Authority will require you to achieve a resultant level not less than 10 dB below the minimum background noise level indicating a requirement for approximately 30 dB of attenuation.

## 8.0 Recommendations

Our recommendations are detailed below:

- Undertake a 24 hour Environmental Noise Survey pursuant to BS4142 in order to establish a Rating Level at the closest potential point of complaint.
- Analyse the boiler system to establish the theoretical noise level at the Assessment Position and select appropriate acoustic control hardware to ensure the Rating Level is not exceeded. The analysis should include an assessment on duct regenerated noise.
- Resiliently hang the boiler flue system within the plantroom.
- Resiliently sleeve the wall penetrations within the plantroom.

# CERTIFICATE OF CALIBRATION

Issued By BSRIA Instrument Solutions  
Date of Issue 08 May 2012

Certificate Number  
STD45547

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Approved Signatory

**Customer :** Impulse Acoustics Ltd

Date Received : 08 May 2012

**Instrument -** System ID : 74085  
Description : Sound Level Meter, Type 1  
Manufacturer : Rion  
Model Number : NL32  
Serial Number : 00403194  
Procedure Version : NO381V1

#### Environmental Conditions

Temperature : 20°C +/- 4°C Mains Voltage : 240V +/- 10V  
Relative Humidity : <70% +/- % Mains Frequency : 50Hz +/- 1Hz

#### Comments

Calibration tolerances quoted are those as stated in BS EN 61672-1:2003  
Unless otherwise stated all readings are made at 1kHz.  
Calibration performed acoustically.  
Preamp Serial Number 32499.  
Barometric Pressure= 997.0 mbar. Ambient Temperature = 22.0 °C

#### Traceability Information

Instrument description	Serial number	Certificate number	Cal. Date	Cal. Period
B & K 4226 Calibrator (Lab 0174)	1551580	C1009558	15/11/2010	104

Calibrated By : D. M. Tovey

Date of Calibration : 08 May 2012

This certificate provides traceability of measurement to recognised National Standards, and to the units of measurement realised at the National Physical Laboratory or other recognised National Standards laboratories.  
Copyright of this certificate is owned by the issuing laboratory and may not be reproduced except with the prior written approval of the issuing laboratory.  
This certificate complies with the requirements of BS EN ISO 10012:2003.

# CERTIFICATE OF CALIBRATION

Certificate Number  
STD45547

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Test Title	Tolerance	Applied Value	Reading	% Of Spec.
<b>Acoustic Pre Calibration Check at 1kHz, 20 to 110dB Range. Lp Mode.</b>				
As Found	1.1dB	94.0dB	94.0dB	0%
As left	1.1dB	94.0dB	94.0dB	0%
<b>CALIBRATION RESULTS</b>				
<b>Lp Mode, 1kHz, Fast Response.</b>				
Range, 20 to 100dB	1.1dB	94.0dB	94.0dB	0%
Range, 20 to 110dB	1.1dB	94.0dB	94.0dB	0%
	1.1dB	104.0dB	104.0dB	0%
Range, 30 to 120dB	1.1dB	94.0dB	93.9dB	9%
	1.1dB	104.0dB	103.9dB	9%
	1.1dB	114.0dB	113.9dB	9%
Range, 40 to 130dB	1.1dB	114.0dB	113.9dB	9%
<b>A level of 94dB, at the frequency shown, was applied to the instrument and its dB(A) weighted response recorded. Range La 20 to 110dB</b>				
94dB @ 125Hz	1.5dB	77.9dB	77.8dB	7%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 4kHz	1.6dB	95.0dB	95.7dB	44%
<b>A level of 94dB, at the frequency shown, was applied to the instrument and its dB(C) weighted response recorded. Range Lc 20 to 110dB</b>				
94dB @ 125Hz	1.5dB	93.8dB	93.8dB	0%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 4kHz	1.6dB	93.2dB	93.9dB	44%
<b>Lp Filter Mode, Fast Response, 20 to 110dB Range.</b>				
94dB @ 63Hz	1.5dB	94.0dB	94.0dB	0%
94dB @ 125Hz	1.5dB	94.0dB	94.0dB	0%
94dB @ 250Hz	1.4dB	94.0dB	93.9dB	7%
94dB @ 500Hz	1.4dB	94.0dB	93.9dB	7%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 2kHz	1.6dB	94.0dB	94.3dB	19%
94dB @ 4kHz	1.6dB	94.0dB	94.7dB	44%

End.

WT

### Uncertainties

Sound Level                    ±0.5 dB  
 Instrument Stability        An additional uncertainty of 1 lsd should be added to all values.