Noise Assessment

30 Camden Street

London

NW1 0LG

HRS Services Ltd.

HRS Ref: 126299 – AC – 1v2

Compiled By	Authorised By		
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I. Revision History

Revision	Description	Date	Approved
1v2	General revisions following client feedback	16/01/2018	IW

II. Contents

1. Survey Information

1.1 Stroma Tech/HRS has been commissioned by Quinn London to undertake an internal noise assessment relating to the residential development at 30 Camden Street, London, NW1 0LG.

1.2 The purpose of this assessment is to compare internal noise measurements within a bedroom of the development and to demonstrate compliance with the Borough of Camden Planning Condition number 14 which requires that:

'Prior to occupation of the new residential flats in each block on Camden St and Plender St, details of sound insulation on the facades and windows of each flat, to meet the noise mitigation recommendations outlined in section 8 of the Acoustic report hereby approved, shall be submitted for approval by the local planning authority. The measures shall be installed in accordance with the approved details and retained permanently thereafter.'

1.3 It is understood that the "Acoustic report hereby approved" referenced in the above planning condition is the AIRO report dated 26 March 2013 (Report No. REG/R6687). The report stipulates meeting the internal noise level requirements outlined in World Health Organisation – *Guidelines for Community Noise - 1999* which is also consistent with the more commonly referenced guideline internal noise levels outlined in BS 8233: 2014 *Guidance on sound insulation and noise reduction for buildings*.

1.4 A noise survey was carried out from the 1st December to the 4th December 2017.

1.5 Noise levels were measured using a Rion NL-52 calibrated Class 1 precision integrating sound level meter.

1.6 Measurements were taken in one location on the third floor: Flat 13, bedroom 2 to represent the most noise affected façade of the development, identified as Camden Street West in the AIRO report.

1.7 Whilst on site, intermittent road traffic from Camden Street was identified as the main source of noise. Therefore measurements were taken inside a bedroom along this façade.

1.8 Calibration checks were carried out both before and after the measurements with no significant variance observed. Noise was measured in terms of broadband A-weighted indices.

1.9 It is understood that ongoing site construction was active until 17:45 hours on 1st December, and continued between 07:00 – 16:30 hours on 2nd December. These time periods have been removed from the assessment.

2. Relevant Acoustic Standards

British Standard (BS) 8233:2014

2.1 British Standard BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings* provides guidance in relation to acceptable levels of noise within buildings of different types, based on World Health Organisation (WHO) guidelines.

2.2 BS 8233:2014 recommends ambient noise levels in living accommodation, as outlined in Table 1 with the accompanying text:

2.3 "*In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values in Table 4*."

Table 1: Indoor Ambient Noise Levels for Dwellings (Table 4 of BS 8233:2014)

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	45 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

2.4 In addition BS 8233:2014 Note 4 states that:

2.5 "*...regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night.*"

2.6 However, a specific maximum L_{AFmax} value is not given by BS 8233:2014. HRS proposes that for bedrooms at night, individual noise events should not normally exceed 45 dB L_{AFmax}.

2.7 *Professional Practice Guidance on Planning and Noise* (ProPG) states that up to 10 events of 45 dB L_{AFmax} internally can be considered acceptable.

3. Survey and Assessment Results

3.1 Table 1 below is a summary of measured noise levels and assessment, with construction activity excluded, which has resulted in only partial results for the daytime periods being reported only.

3.2 Full results can be found in Appendix I.

Table 1: Summary of measurement results and BS 8233 assessment

Monitoring Location	Date	Start Time	End Time	Duration (hours)	Measured noise levels, $L_{Aeq,T}$ dB	BS 8233:2014 criteria, dB	Excess	45 dB L_{AFmax} exceedances
N1 - Flat 13, bedroom 2	01/12/2017	17:50	23:00	05:10	34	35	-1	N/A
	01/12/2017-02/12/2017	23:00	07:00	08:00	31	30	+1	2
	02/12/2017	16:30	23:00	06:30	34	35	-1	N/A
	02/12/2017-03/12/2017	23:00	07:00	08:00	31	30	+1	1
	03/12/2017	07:00	23:00	16:00	32	35	-3	N/A
	03/12/2017 – 04/12/2017	23:00	07:00	08:00	31	30	+1	2

4. Conclusion

4.1 The assessment results indicate that measured noise levels in Flat 13 during the daytime periods are all below 35 dB $L_{Aeq,T}$,and therefore comply with the BS 8233 criteria.

4.2 Measured noise levels during the night time periods marginally exceed the BS 8233 guidelines by 1dB $L_{Aeq,T}$. This small margin of exceedance can be considered negligible, on the basis that an increase in noise level of 1 dB is undetectable by the human ear.

4.3 Analysis of audio recordings has confirmed that road traffic from Camden Street is the main source of noise. L_{Amax} noise levels measured during night time periods are attributable to sirens and motorcycles. The number of L_{Amax} noise level exceedances was significantly lower than the allowable upper limit prescribed within ProPG which states that up to 10 events of 45 dB L_{AFmax} internally can be considered acceptable.

Based on the results of the above assessment, it is our professional opinion that the sound insulation performance of the completed façade of the development is generally in compliance with the intent of the London Borough of Camden Planning Condition number 14.

Appendix I. Survey Data