CSG

acoustics

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14th March 2019

For the attention of Ian Knight

Ref: CSGA-C1677-T3- New Mill and Old & Decker – Internal Noise Survey

Dear Ian,

Further to recent internal ambient noise level surveys at New Mill and Old & Decker blocks of the Murrays Mill residential development, this letter details the results.

A noise survey has been undertaken to establish noise levels within the Murrays Mill residential apartments due to the external noise break-in through the façade/windows. Internal noise level requirements of Manchester Life Development Company (MLDC) and Manchester City Council (MCC) must be achieved.

Internal Noise Level Requirements

The MLDC and MCC internal ambient noise level requirements are detailed in Table 1.

Table 1: Manchester City Council Internal Noise level Criteria

Period	Room	Noise limits
Daytime (07:00-23:00)	Living room	35 dB L_{Aeq}
Night time (23:00-07:00)	Bedroom	30 dB L_{Aeq} 45 dB L_{Amax} - not normally exceeded

Survey Details

A noise survey has been undertaken within 'New Mill' on Jersey Street and also 'Old and Decker' on Redhill Street.

Surveys have previously been undertaken early in the development progress and it was established that noise levels due to road traffic directly outside the development on the cobbled street, could potentially exceed requirements.

At the time of the original surveys a night club was operating and late night taxis were regular in the area. Since then the night club has closed down and therefore fewer vehicles in the area are predicted.

In light of the above this survey has been done to take noise measurements of vehicle passbys and also set up logging sound level meters to establish the number of vehicle passby/exceedance events through the night.

EQUIPMENT

The equipment used for the survey was as follows:

- 01dB Metravib Black Solo and Fusion Integrating Sound Level Meters conforming to Class 1 BS EN 61672, Type 1 BS EN 60804 & BS EN 60651: 1994;
- 01dB Metravib MCE 212 Condenser Microphone, PRE 21 S Pre-amp with Connecting Leads and 40 CE Condenser Microphone and PRE22 Pre-amp with connecting leads;
- 01dB Outdoor Microphone Kits;
- Casella CEL110 Acoustic Calibrator;
- Tripods.

New Mill Block C, 1st Floor bedroom	Sound Level Meter 01dB Black Solo	Serial No.	60672
		Calibration Date	21/4/17
		Cal Certificate No.	03146/2_R1
	½" MCE 212 Condenser Mic.	Serial No.	80836
		Calibration Date	21/4/17
		Cal Certificate No.	03146/2_R1
Old and Decker Ground floor bedroom	Sound Level Meter 01dB Fusion	Serial No.	10816
		Calibration Date	4/5/17
		Cal Certificate No.	03219/1
	½" 40 CE Condenser Mic.	Serial No.	10959
		Calibration Date	4/5/17
		Cal Certificate No.	03219/1
-	Calibrator Model CEL110/1	Serial No.	029842
		Calibration Date	27/04/18
		Cal. Certificate No.	03146/1_R1

Internal Noise Level Measurement Results

Noise measurements were taken within bedrooms to establish the L_{Amax} noise levels of individual car passbys, as detailed with Table 4. Figures 1 and 2 plot the L_{Amax} levels through the night in 1minute periods.

The logging sound level meters logged L_{Amax} in 1 minute periods to represent a single event.

The number of events exceeding 45dB L_{Amax} during the night (23:00-07:00) in New Mill was 17 and more than half of these occurred between 6am and 7am.

The number of events exceeding 45dB L_{Amax} during the night (23:00-07:00) in Old and Decker was significantly more at 137.

A summary of the time averaged ambient noise levels and the number of occurrences over 45dB are shown in Table 3.

Table 3: Internal Noise Levels

Room	Period	$L_{Aeq,T}$ - dB	Number of $L_{Amax,\ 1min}$ exceeding 45dB
'New Mill Block' C 1st Floor Bedroom overlooking Jersey Street	Night (23:00-07:00)	25	17
'Old and Decker' Ground Floor bedroom over looking Redhill Street		36.5	137

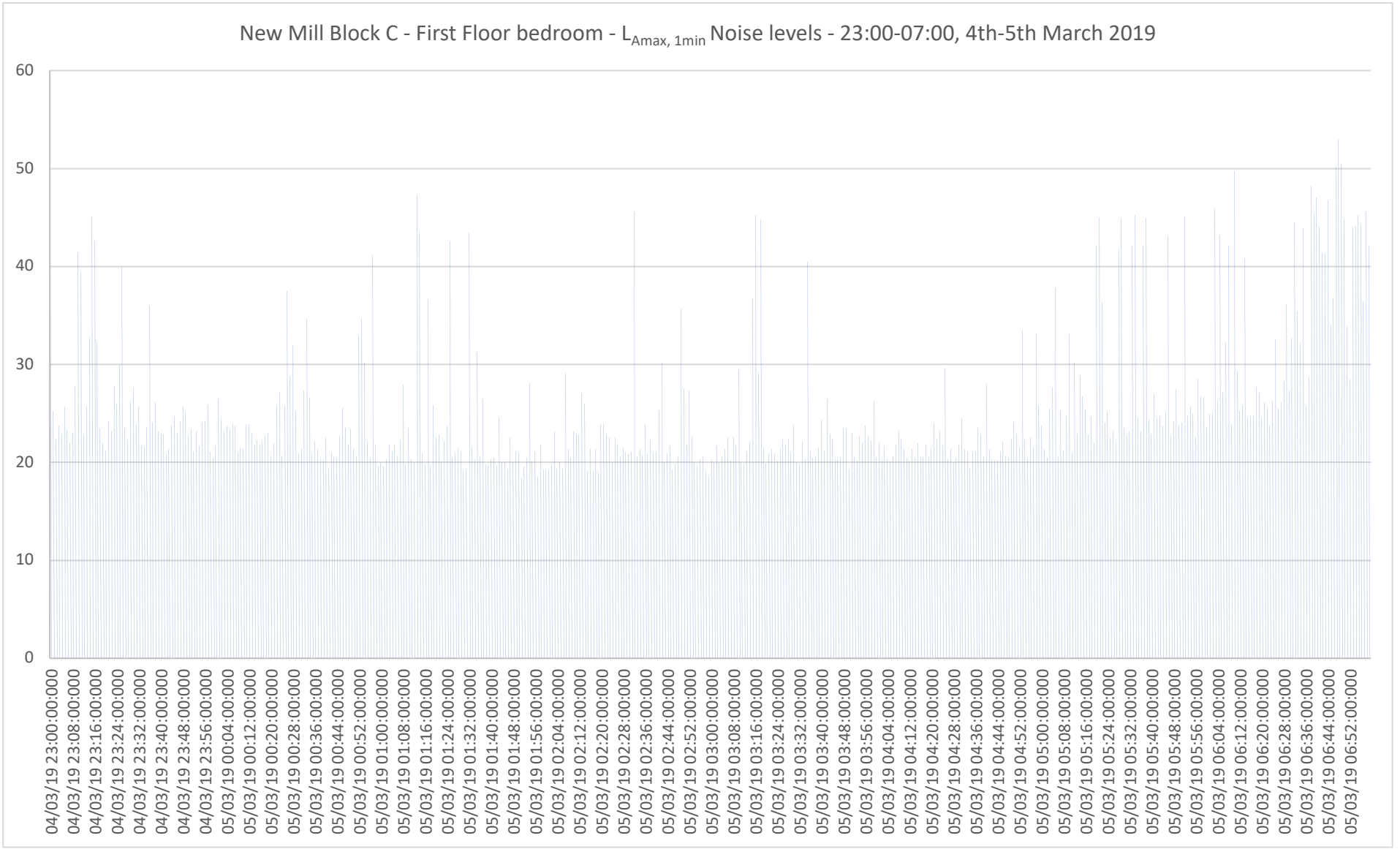
Level	Event Description	L_{Amax}
New Mill (Jersey Street)		
Lower ground	Slow car	40 dB
	Car	47 dB
	Roller shutter opposite	46 dB
Upper Ground	Cars	46-48dB
	Roller shutter opposite	46-47dB
1st	Cars	48dB
	Roller shutter opposite	48dB
2nd	Roller shutter opposite	39 dB
	Car	44 dB
3rd	Car	43 dB
	Roller shutter opposite	43 dB
4th	Roller shutter opposite	43 dB
	Car	41 dB
Old and Decker (Redhill Street)		
Ground Floor	Car	53 dB
1st floor	Car	50-53 dB
2nd Floor	Car	46-47 dB
3rd Floor	Car	40-44

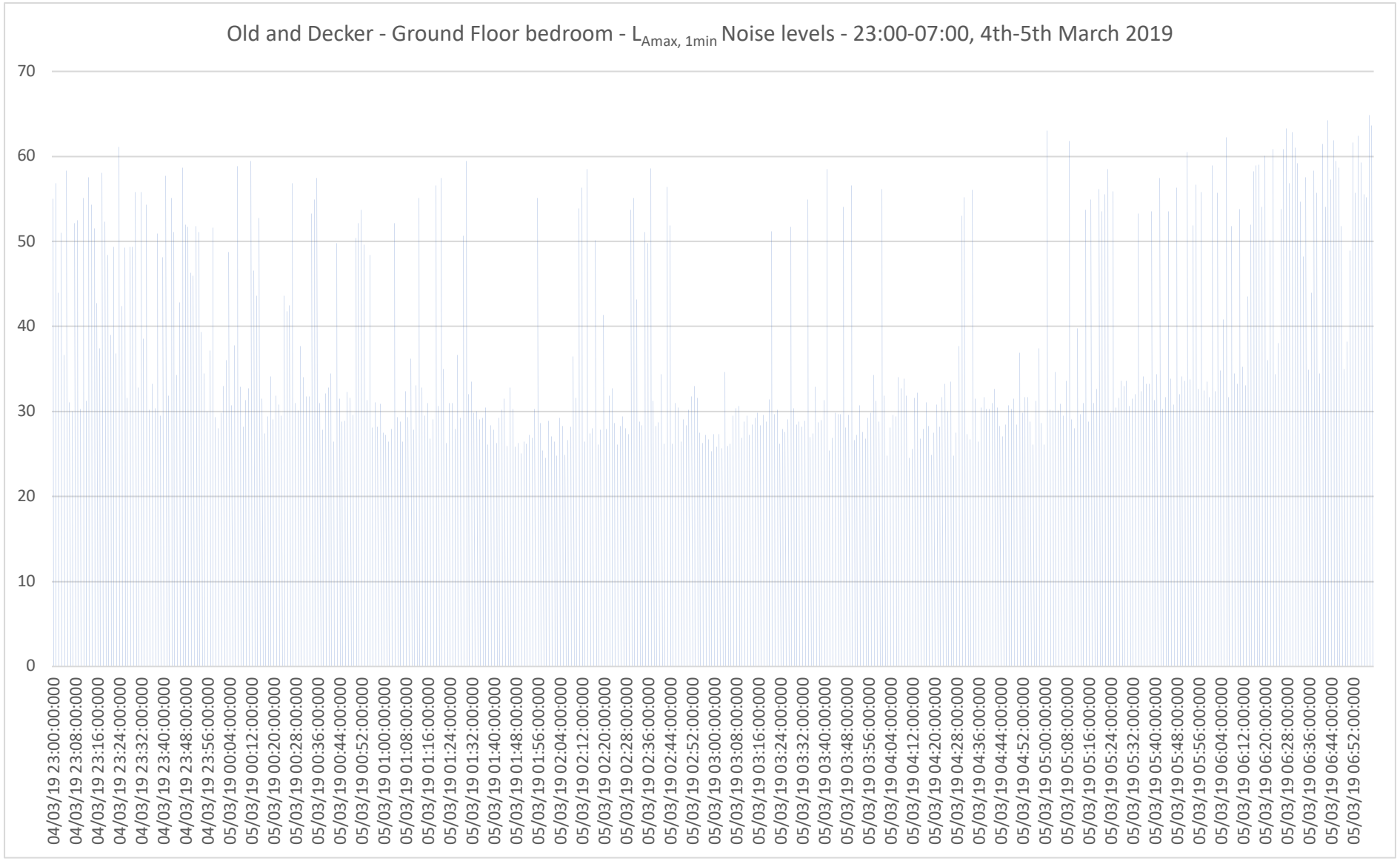
General observations

It was noted whilst on site that the vehicles passing on Redhill Street were faster and more frequent. The noise levels of passing traffic in both blocks were dependent on the speed of the passing vehicle. The cobbles caused a significant increase in noise level with speed.

The sound insulation performance of the windows within the apartments did not seem to be consistent between rooms. This was due to variation in the sealing performance of the frames and the fit of the opening elements.

The automatic roller shutter located on Jersey Street was frequently causing L_{Amax} exceedances. This is not evident in the night time measurement data generally through the night. However could be a main contributor between 6-7am when residents are leaving for work and the exceedances increase.


New Mill Block C - First Floor bedroom - $L_{Amax, 1min}$ Noise levels - 23:00-07:00, 4th-5th March 2019
60
50
40
30
20
10
0
04/03/19 23:00:00:000
04/03/19 23:08:00:000
04/03/19 23:16:00:000
04/03/19 23:24:00:000
04/03/19 23:32:00:000
04/03/19 23:40:00:000
04/03/19 23:48:00:000
04/03/19 23:56:00:000
05/03/19 00:04:00:000
05/03/19 00:12:00:000
05/03/19 00:20:00:000
05/03/19 00:28:00:000
05/03/19 00:36:00:000
05/03/19 00:44:00:000
05/03/19 00:52:00:000
05/03/19 01:00:00:000
05/03/19 01:08:00:000
05/03/19 01:16:00:000
05/03/19 01:24:00:000
05/03/19 01:32:00:000
05/03/19 01:40:00:000
05/03/19 01:48:00:000
05/03/19 01:56:00:000
05/03/19 02:04:00:000
05/03/19 02:12:00:000
05/03/19 02:20:00:000
05/03/19 02:28:00:000
05/03/19 02:36:00:000
05/03/19 02:44:00:000
05/03/19 02:52:00:000
05/03/19 03:00:00:000
05/03/19 03:08:00:000
05/03/19 03:16:00:000
05/03/19 03:24:00:000
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05/03/19 03:40:00:000
05/03/19 03:48:00:000
05/03/19 03:56:00:000
05/03/19 04:04:00:000
05/03/19 04:12:00:000
05/03/19 04:20:00:000
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05/03/19 04:44:00:000
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05/03/19 05:48:00:000
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05/03/19 06:04:00:000
05/03/19 06:12:00:000
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05/03/19 06:28:00:000
05/03/19 06:36:00:000
05/03/19 06:44:00:000
05/03/19 06:52:00:000


Old and Decker - Ground Floor bedroom - $L_{Amax, 1min}$ Noise levels - 23:00-07:00, 4th-5th March 2019
70
60
50
40
30
20
10
0
04/03/19 23:00:00:000
04/03/19 23:08:00:000
04/03/19 23:16:00:000
04/03/19 23:24:00:000
04/03/19 23:32:00:000
04/03/19 23:40:00:000
04/03/19 23:48:00:000
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