

ACOUSTIC DESIGN TECHNOLOGY
Noise and Vibration Consultants

ADT 3490

11 July 2023

Cushman & Wakefield (Manchester)
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86 – 88 MARKET STREET, MANCHESTER

SUPPLEMENTARY ACOUSTIC TESTING

ACOUSTIC CONSULTANCY REPORT ADT 3490/S1

Revision	Date	Issued By	Revision Notes
-	11 July 2023	Chris Middleton	first issue

1.0 INTRODUCTION

Post completion acoustic testing has previously been undertaken to demonstrate compliance with condition 12 of planning permission 118823/FO/2018, as set out in the previously issued report ADT 3490/PCT dated 13 March 2023.

Some queries have been raised by Manchester City Council, including whether the adjoining gymnasium (Pure Gym) had fitness classes operating at the time the tests were undertaken. It is understood that this was the case, as previously confirmed.

The outstanding query relates to the day time noise levels, as the previous tests were undertaken while construction works were ongoing, and Manchester City Council have specifically requested that measurements be taken during the day now that construction operations are complete. Additional measurements have now been undertaken in response to this request.

2.0 ADDITIONAL TESTING

2.1 Survey Procedure

The measurements were undertaken between 11:00 hours and 13:30 hours on Monday 10 July 2023, a sample of the typical working day with normal street activity on Market Street, and the adjoining Pure Gym open with scheduled classes taking place. On the day of the survey the classes were as follows:

11:30 Absolute Abs (studio)
12:15 Strength 45 (studio)
13:30 Cycle class (spin studio)

The measurements were taken in various rooms over periods of up to 36 minutes, on a fully attended basis to provide accurate observations. The apartment MVHR plant was operating normally during all measurements.

Test rooms were selected to represent the worst case Market Street noise (on level L02), in bedrooms adjoining the gym (on levels L02 and L03), at the rear overlooking the plant area (L04) and in a living room on the side elevation to the alleyway, again on the lowest level L02.

The measurements were taken using a Norsonic 140 Class 1 sound level meter laboratory calibrated in April 2023 and field calibrated before and after the tests using a Norsonic 1215 calibrator, itself laboratory calibrated in April 2023. There was no significant drift.

2.2 Survey Results

The survey locations, periods and results are summarised in the following table:

Test room	Location	Period	L _{Aeq,T} dB	L _{eq,T} 63 Hz dB	L _{eq,T} 125 Hz dB
1	L02 living room (Market Street)	11:02 – 11:38	32	44	39
2	L02 bedroom by gym	11:47 – 12:02	26	35	31
3	L04 living above plant	12:04 – 12:19	30	45	36
4	L03 bedroom by gym	12:26 – 12:37	28	33	33
1	L02 living room (preaching)	12:44 – 12:59	36	45	40
4	L03 bedroom by gym	13:09 – 13:20	28	31	30
5	L02 alleyway elevation	13:22 – 13:37	29	41	36

The test room locations are illustrated on the attached site plan ADT 3490/SP1.

2.3 Observations and Commentary – Market Street

On Market Street at the beginning of the survey the noise levels in the living rooms were controlled by a mixture of people talking and in some cases shouting, together with occasional loud vehicles on High Street such as motorbikes with modified exhausts.

The noise of regular trams was also noticeable, in some cases exhibiting ‘wheel squeal’ as they rounded the corner with Fountain Street. There was also a steady background noise from the apartment MVHR system.

During the second measurement in the L02 living room (12:44) an Islamic street preacher had set up on Market Street, and played recordings through a portable amplifier. This alternated between ‘Nasheed’ singing and a spoken sermon, with some gaps. Later in the survey the preacher moved to another location further along Market Street to the west. This is just an example of the random and unpredictable nature of unlicensed and uncontrolled street performance (or in this case, evangelism) using portable amplifiers on a pedestrianised shopping street.

It is true that during the 15 minute measurement when the amplifier was in use the internal noise level was slightly (1 dB) above the design criterion of 35 dB $L_{Aeq, 16 \text{ hour}}$, although on the basis that busking / evangelism is only likely to occur during busy shopping hours (i.e. when there are ‘customers’ for these activities), say 10:00 to 16:00 hours, the average $L_{Aeq, 16 \text{ hour}}$ should be within the required range, as follows:

	$L_{Aeq, T}$ dB	Time
Noise level as measured (with amplified performance)	36	6 hours
Noise level as measured (no amplified sound)	32	10 hours
Average over 16 hour day	34	16 hours

On that basis it is reasonable to conclude that the installed building envelope provides sufficient containment of street noise.

2.4 Gym Noise

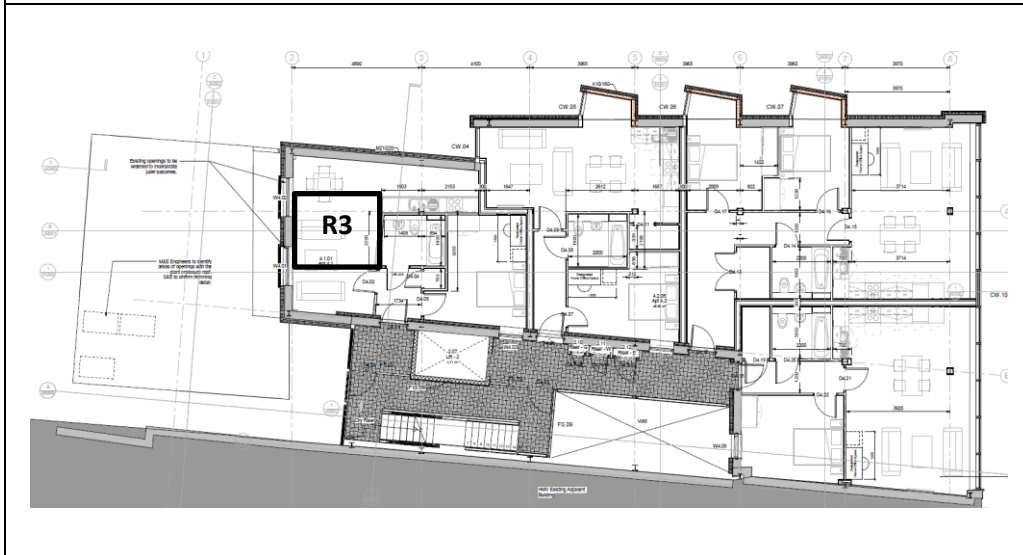
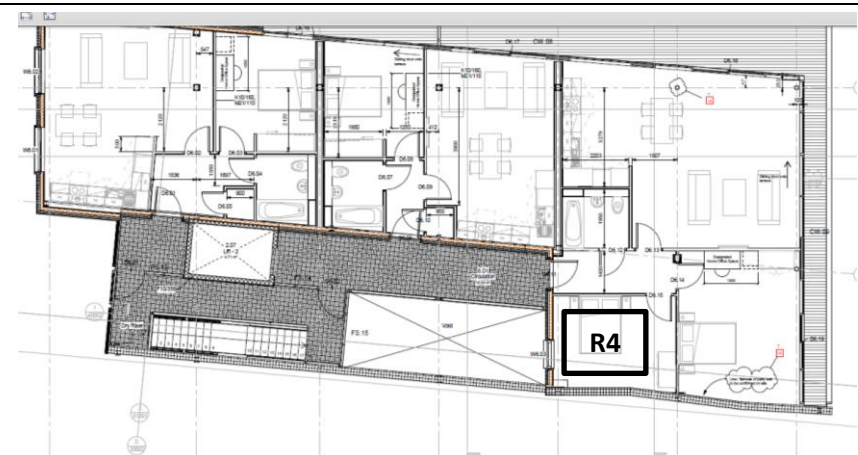
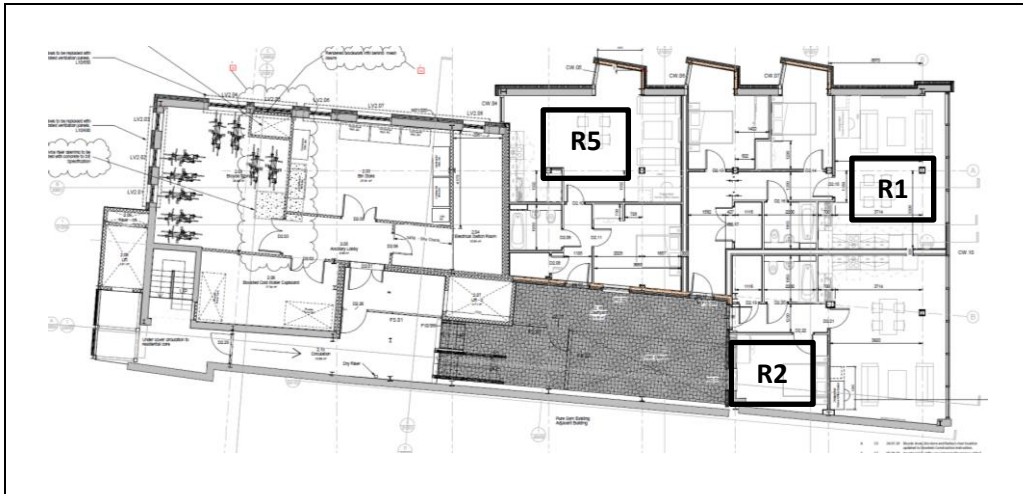
Long term monitoring during the previous survey established compliance with the specified noise criteria, and the latest measurements confirm this, with the measured levels at least 10 dB below the specified limits of 47 dB $L_{eq,T}$ at 63 Hz and 41 dB $L_{eq,T}$ at 125 Hz.

The muted 'thud' of weights being dropped was just audible in the rooms adjoining the gym. For additional information, a typical sample of the $L_{Amax,F}$ is illustrated on the attached graph ADT 3490/G1, with $L_{Amax,F} \leq 36$ dB. This demonstrates that while compliance with the planning requirements has been achieved by a comfortable margin, the buildings are still connected and some faint residual noise is audible when the background sound levels are very low, as is the case in the rear bedrooms.

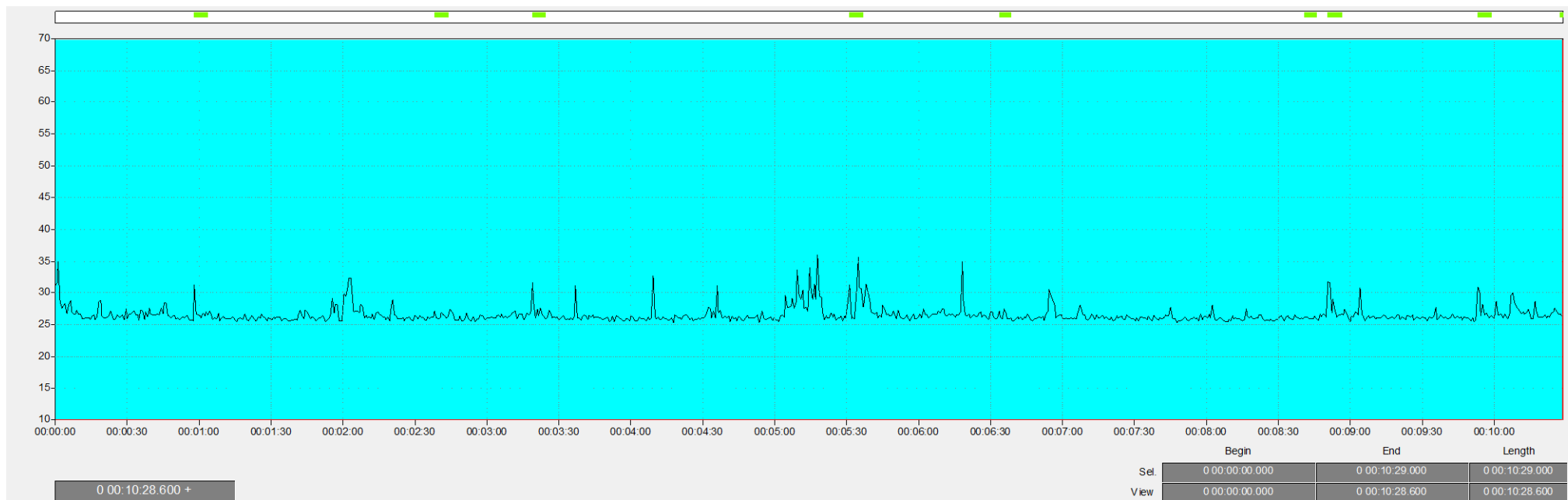
2.5 Side and Rear Elevations

In the noise levels in the side living room to the alleyway (L02) and the room closest to the plant room (L04) were controlled by the MVHR plant, with occasional extraneous noise from the city such as construction and sirens. There was no activity in the alleyway to the rear of the site, the fruit and veg stall which previously stood there has now gone.

FOR ACOUSTIC DESIGN TECHNOLOGY



<u>Notes</u>	<u>Description</u> Test room locations		 ACOUSTIC DESIGN TECHNOLOGY Noise and Vibration Consultants
	<u>Project</u> 86 – 88 Market Street, Manchester		
	<u>Date</u> 11/07/2023	<u>Drawing No.</u> 3490/SP1	



Notes

Description

Typical $L_{Amax(F)}$ in bedroom adjoining gym

Project

86 – 88 Market Street, Manchester

Survey Date

10 July 2023

Drawing No.

3490/G1



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