

Acoustic Report

Noise Ingress Assessment 206 Huddersfield Road Mirfield

Report Compiled For and On Behalf of:

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Our Reference – J2908-NI
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A handwritten signature in blue ink, appearing to be 'P. Horsley', with a long horizontal flourish extending to the right.

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Section 1 Executive Summary

Paul Horsley Acoustics Ltd have been appointed to complete a noise intrusion assessment for the recent conversion of No 206 Huddersfield Road to residential flats.

The design targets as per BS8233:2014 are as follows:

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 LAeq, 16 hour dB	-
Dining	Dining Room / Area	40 LAeq, 16 hour dB	-
Sleeping (daytime resting)	Bedroom	35 LAeq, 16 hour dB	30 LAeq, 8 hour dB

Additional LA Max dB data was gathered to indicate the event level ingress noise from passing vehicles.

Testing for noise intrusion was carried out at 2 No locations within the 2 No formed 1st floor flats, these being a lounge / diner and bedroom of each residence.

An overview of the results for the testing appears within the table below:

Location	Noise Ingress Results		
	LAeq dB		LAm _{ax} , fast dB
	Daytime	Nighttime	Nighttime
Flat 1A Lounge / Diner	31.7	-	-
Flat 1A Master Bedroom	31.9	26.5	37.7
Flat 1B Lounge / Diner	34.3	-	-
Flat 1B Bedroom	22.2	19.8	30.4

As can be seen from the above results table the noise ingress into the demise falls below the limiting design targets for the both average and maximum noise values day and night.

It can therefore be determined that the building envelope for the premises has been constructed to an acceptable level with respect to ingress of the external noise levels.

Section 2

General

2.1 Introduction

Paul Horsley Acoustics Ltd have been appointed to complete a noise intrusion assessment for the formed 1st floor residential flats at 206 Huddersfield Road, Mirfield.

The design targets as per BS8233:2014 are as follows:

This revised British Standard relates to the requirements necessary to allow for design of new building or refurbished buildings undergoing a change of use. It provides guidance on acoustic criteria appropriate for various types of internal spaces. The criteria as noted within 7.7.2, internal ambient noise levels for dwellings; are reproduced below:

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 LAeq, 16 hour dB	-
Dining	Dining Room / Area	40 LAeq, 16 hour dB	-
Sleeping (daytime resting)	Bedroom	35 LAeq, 16 hour dB	30 LAeq, 8 hour dB

Additional LA Max dB data was gathered to indicate the event level ingress noise from passing vehicles.

Testing for noise intrusion was carried out at 2 No locations within the 2 No formed 1st floor flats, these being a lounge / diner and bedroom of each residence.

The assessment has been completed on Thursday 28th May between 16.00 and 19.00 hours for daytime accounting for the anticipated increased evening traffic noise externally. The nighttime assessment was completed between 23.00 to 01.00 hours to account for the early nighttime period when residents are likely to be retiring for the night, considered to be the most noise sensitive time period for sleep.

These test periods were considered to account for the worst case times likely to experience the highest external noise climate incident to the external façade.

Technical terms and references are used throughout this report and in order to assist the reader a Glossary of Terms is included within Appendix A.

2.2 Site Layout

The 2 No flats under consideration are located on the 1st floor of No 206 Huddersfield Road.

The conversion of the premises was to form 2 No residential flats on the 1st floor level above retail premises previously used for retail / storage purposes.

The flats are accessed from a rear external staircase to a common door with lobby area leading to the entrance doors of the individual flats.

Flat 1 A has been formed into a 2 bedroomed flat with a rear link corridor to the lounge / diner, bathroom, and 2 No double bedrooms. This flat overlooks Huddersfield Road.

Flat 1 B has been formed into a 1 bedroomed flat with a hall leading to the lounge / diner and beyond to the bathroom and the bedroom. The lounge / diner and bedroom overlook the rear yard of the site, used for parking.

2.3 Noise Ingress Assessment Methodology

The noise ingress assessment has been completed for all relevant areas of the flats.

The noise ingress test consisted of setting up the sound level meter on a tripod at a distance of 1.2m from the external window of the room under consideration. This position was deemed to be the weakest building elements making up the envelope of the building. As such, if these façade areas achieved the noise ingress limits, set for the development, it follows that the remaining areas would achieve a greater sound insulation value and a lower ingress level.

The sound level meter was set to record the noise data continuously and record the results which were stored for later retrieval.

Section 3 Noise Ingress and Vibration Survey

3.1 Survey Equipment

Integrating Sound Level Meter, RION NA-27, Type 1, Serial No 431986

RION UC-53A Microphone Serial No 307060

RION NC-74 Calibrator Serial No 530712

90mm Windshield

Tripod

3.2 Survey Method

Noise ingress testing have been executed on the 2 No flats under consideration.

3.3 Noise Ingress Assessment

An attended noise ingress assessment survey was carried out on the 28th May 2020.

LA_{eq} dB and LA_{max} , fast dB sound measurements were taken using the sound analyser.

The measurement indices noted above are defined as follows:

$LA_{eq, T}$	the "A" weighted equivalent continuous noise level of sample period T
LA_{max}	The "A" weighted maximum level during the sample period T

Various sound measurements were taken using the sound analyser. The meter was calibrated before and after the measurements using the calibrator to ensure accuracy of the results. The calibration value of 94.0 dB at 1000 Hz was consistent before and after each measurement cycle, with no fluctuations noted between calibration checks, as such the results obtained can be deemed to be an accurate representation of the sound levels recorded.

In order to ascertain the noise ingress values for the area under consideration, sound recordings were taken at over 10 minutes for each sample with 5 no samples consecutively recorded for the area for each position.

The sound meter was mounted on the tripod at a height of 1.5m above ground and 1.2m from the relevant façade internally.

The testing was executed during a typical weekday period from 16.00 onwards, representing anticipated high traffic volume times during the day and early nighttime from 23.00 hours to account for sleep preparation times.

3.4 Noise Ingress Results

Below are the results for the noise ingress testing completed for formed flats at 206 Huddersfield Road.

3.5.1 Noise Ingress Test Results

During the monitoring period separate noise samples were recorded. These monitoring samples were collected from the 1st floor formed flats within the lounge / diner and bedroom areas the relevant facades. This was to establish the general sound levels experienced by the site at the most exposed façade positions available and therefore likely to experience the worst case sound climate.

The table of results below indicates the sound levels recorded for the site location selected during the monitoring periods, with a brief description of the sound sources contributing to the individually monitored sound levels recorded.

Location	Period	ID	LA max	LAeq	Measurement	Date	Time	Source
			dB	dB	Duration			
F1A Lounge	Daytime	1	46.5	32.6	00:10:00.00	28-05-2020	16:00:24	Traffic Huddersfield Rd dominant
		2	40.7	31.0	00:10:00.00	28-05-2020	16:10:24	
		3	41.1	33.0	00:10:00.00	28-05-2020	16:20:24	
		4	41.7	30.2	00:10:00.00	28-05-2020	16:30:24	
		5	43.5	30.8	00:10:00.00	28-05-2020	16:40:24	
		Average LAeq dB		31.7				
F1A Bedroom	Daytime	6	51.9	32.2	00:10:00.00	28-05-2020	16:52:41	Traffic Huddersfield Rd dominant
		7	58.8	32.8	00:10:00.00	28-05-2020	17:02:41	
		8	42.7	32.6	00:10:00.00	28-05-2020	17:12:41	
		9	48.2	30.5	00:10:00.00	28-05-2020	17:22:41	
		10	44.8	30.9	00:10:00.00	28-05-2020	17:32:41	
		Average LAeq dB		31.9				
F1B Lounge	Daytime	11	45.9	25.5	00:10:00.00	28-05-2020	17:45:45	Low external traffic noise audible
		12	27.9	22.5	00:10:00.00	28-05-2020	17:55:45	
		13	35.6	24.2	00:10:00.00	28-05-2020	18:05:45	
		14	38.8	24.2	00:10:00.00	28-05-2020	18:15:45	
		15	36.8	24.4	00:10:00.00	28-05-2020	18:25:45	
		Average LAeq dB		24.3				
F1B Bedroom	Daytime	16	38.1	23.3	00:10:00.00	28-05-2020	18:37:38	Low external traffic noise audible
		17	34.4	21.8	00:10:00.00	28-05-2020	18:47:38	
		18	32.9	21.8	00:10:00.00	28-05-2020	18:57:38	
		19	31.2	21.4	00:10:00.00	28-05-2020	19:07:38	
		20	35.0	22.2	00:10:00.00	28-05-2020	19:17:38	
		Average LAeq dB		22.2				
F1A Bedroom	Nighttime	21	38.6	25.7	00:10:00.00	28-05-2020	23:01:47	Low volume of traffic along Huddersfield Road dominant
		22	36.2	24.0	00:10:00.00	28-05-2020	23:11:47	
		23	36.1	25.7	00:10:00.00	28-05-2020	23:21:47	
		24	38.8	27.6	00:10:00.00	28-05-2020	23:31:47	
		25	38.0	28.2	00:10:00.00	28-05-2020	23:41:47	
		Average LAeq dB		26.5				
F1B Bedroom	Nighttime	26	32.5	19.5	00:10:00.00	28-05-2020	23:54:39	No discernible external noise audible.
		27	30.5	20.4	00:10:00.00	29-05-2020	00:04:39	
		28	30.5	19.9	00:10:00.00	29-05-2020	00:14:39	
		29	29.4	19.6	00:10:00.00	29-05-2020	00:24:39	
		30	28.0	19.4	00:10:00.00	29-05-2020	00:34:39	
		Average LAeq dB		19.8				

3.5.2 Results Analysis – Noise Ingress Testing

As can be seen from the above table of results the primary external noise source is due to traffic movements along the local highway passing the site.

During all occasions of the noise ingress test completed for the 1st floor flats the limiting noise levels were not being exceeded with lower values recorded throughout.

These results are a clear indication that the noise ingress into the formed flats is not an issue with respect to internal noise levels due to external sources.

Compliance with the requirements with respect to ingress of external noise sources has been demonstrated through noise monitoring.