



115 BEECH ROAD,
CHORLTON

Acoustic Testing Results

Reference: 13394.RP01.ATR.0

Prepared: 05 July 2024

Revision Number: 0

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Revision	Comment	Date	Prepared By	Approved By
0	First issue of report	05 July 2024	James Gill	Helen Sheldon

Terms of contract:

RBA Acoustics Ltd has prepared this report in accordance with our Scope of Work 13394.SW01.1 dated 12 June 2024. RBA Acoustics Ltd shall not be responsible for any use of the report or its contents for any purpose other than that for which it was provided. Should the Client require the distribution of the report to other parties for information, the full report should be copied. No professional liability or warranty shall be extended to other parties by RBA Acoustics Ltd without written agreement from RBA Acoustics Ltd.

The recommendations within this report relate to acoustics performance only and will need to be integrated within the overall design by the lead designer to incorporate all other design disciplines such as fire, structural integrity, setting-out, etc. Similarly, any sketches appended to this report illustrate acoustic principles only and again will need to be developed in to full working drawings by the lead designer to incorporate all other design disciplines.



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1. INTRODUCTION

A material change of use has been completed at the rear of 115 Beech Road in Chorlton-cum-Hardy in Greater Manchester. Previously offices at ground and first floor level, the development now comprises a single flat over 2 storeys and adjoins to an existing flat at first floor level.

A noise survey and assessment has been carried out post development in order to discharge charge the Planning Condition to determine whether appropriate internal ambient and maximum noise levels have been achieved in habitable rooms.

This report details the Planning Condition and the results of the noise survey.

A summary of acoustic terminology is included in Appendix A.

2. SITE DESCRIPTION

The site is shown in relation to its surroundings in the site plan in Figure 1 in Appendix C.

The location of the development is to the rear of 115 Beech Road and shielded from direct line of sight from Beech Road. The area surrounding the development comprises residential properties, retail and commercial premises.

The general arrangement drawings for the new layouts of the flat are presented in Drawing 1 in Appendix C.

3. PLANNING APPLICATION 138800/P3MA/2023

Prior Approval has been granted for change of use of ground and first floor from offices (Class E - Commercial, Business and Service) to a C3 Dwellinghouse, subject to the following condition:

We understand that a noise survey and assessment is required to address the concerns of the condition which has been applied to the site by Manchester City Council, as follows:

a) Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from the Beech Road shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site. Including any local commercial/industrial premises. The potential for overheating shall also be assessed and the noise insulation scheme shall take this into account. The approved noise insulation and ventilation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data shall include measurements take during a rush-hour period and night-time to determine the appropriate sound insulation measures necessary. The following noise criteria shall be required to be achieved:

Bedrooms (night time 23:00 – 07:00) 30dB L_{Aeq} (individual noise events shall not exceed 45 dB $L_{Amax,F}$ by more than 15 times)

Living Rooms (daytime 07:00 – 23:00) 35dB L_{Aeq}

Gardens and terraces (daytime) 55dB L_{Aeq}

b) Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post-completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

4. ENVIRONMENTAL NOISE SURVEY

4.1 Survey Methodology

Monitoring of the prevailing background noise was undertaken over the following period:

11:15 Monday 1st – 11:00 Tuesday 2nd July 2024.

As the survey was unattended it is not possible to comment with certainty regarding meteorological conditions throughout the entire survey period. However, based on observations during the site visits and weather reports for the area, conditions were generally considered suitable for obtaining representative noise measurements, being predominantly dry with little wind.

Measurements were made of the L_{AFmax} and L_{Aeq} noise levels over sample periods of 15 minutes.

4.2 Measurement Locations

To determine the internal ambient noise levels within 115 Beech Road, a sound level meters were set up, one in the bedroom and one in the living room.

Measurement Position 1 – 115 Beech Road, 1st Floor Bedroom

This measurement position was located in the centre of the bedroom. The microphone was set up on a tripod at a height of 1.4m and away from solid surfaces.

This bedroom has a window that overlooks the pedestrianised access street to the flat off Beech Road.

The average L_{Aeq} during the daytime and night periods and the maximum L_{AFMax} during the night period have been measured. See Graphs 1 – 2 in Appendix C for illustrated measurements. See Photograph 1 in Appendix C for measurement location.

Measurement Position 2 – 115 Beech Road, Ground Floor Living Room

This measurement position was located in the centre of the kitchen / living / dining room. The microphone was set up on a tripod at a height of 1.4m and away from solid surfaces.

This living room has windows that overlook the pedestrianised access street to the flat off Beech Road.

The average L_{Aeq} during the daytime period has been measured.

See Graph 3 in Appendix C for illustrated measurements in the dining and living room. See Photographs 2 - 3 in Appendix C for measurement location.

4.3 Instrumentation

For information regarding the equipment used for the measurements please refer to Appendix B.

The sound level meter was calibrated both prior to and on completion of the survey with no significant calibration drift observed.

4.4 Results

The averaged L_{Aeq} noise levels measured in a bedroom during the daytime and night-time internally are summarised in Table 1 along with typical highest L_{AFmax} levels measured at night-time.

Table 1 – Internal Noise Levels (160 High Street, Bedroom)

Location	Date	Period	Average Noise Level $L_{Aeq T}$ (dB)		L_{AFmax} (dB)	
			Criteria	Measured	Criteria	Measured
115 Beech Road (Bedroom)	Monday 1 st July 2024	Daytime (11:15 – 23:00)	35	24	n/a	
	Tuesday 2 nd July 2024	Night-time (23:00 – 07:00)	30	17	45	33
		Daytime (07:00 – 11:00)	35	28	n/a	

All of the noise levels measured in the bedroom of 115 Beech Road meet the internal ambient noise levels required in a bedroom during the daytime and night-time periods.

The averaged L_{Aeq} noise levels measured in a living room during the daytime internally are summarised in Table 2.

Table 2 – Internal Noise Levels (160a High Street, Dining and Living Room)

Location	Date	Period	Average Noise Level $L_{Aeq T}$ (dB)	
			Criteria	Measured
115 Beech Road (Living Room)	Monday 1 st July 2024	Daytime (11:30 – 23:00)	35	27
	Tuesday 2 nd July 2024	Daytime (07:00 – 10:30)	35	34

All of the noise levels measured in the living room of 115 Beech Road, meet the internal ambient noise levels required in a living room during the daytime period.

115 Beech Road has no external garden or terrace to be measured in.

5. CONCLUSION

RBA Acoustics has carried out a post development environmental noise survey over daytime and night-time periods at 115 Beech Road in Chorlton. The measured noise levels are presented within this report.

The resultant noise levels have been assessed against the Planning Condition C2 and most measurements meet the criteria.

Noise levels measured in the first floor bedroom meet the average and maximum noise levels required. Noise levels measured in the ground floor living room meet the average and noise level required.

Appendix A – Acoustic Terminology

A-weighting (e.g. dB(A))	A correction applied across the frequency bands to take into account the response of the human ear, and therefore considered to be more representative of the sound levels people experience.
DeciBel (dB)	Unit used for many different acoustic parameters. It is the logarithmic ratio of the level being assessed to a standard reference level.
L_{eq}	The level of a notional steady sound which, over a stated period of time, T , would have the same acoustic energy as the fluctuating noise measured over that period. Typically used to represent the average or ambient noise level.
$L_{Aeq,T}$	The A-weighted level of a notional steady sound which, over a stated period of time, T , would have the same acoustic energy as the fluctuating noise measured over that period. Typically used to represent the average or ambient noise level.
L_{An} (e.g. L_{A10} , L_{A90})	The sound level exceeded for $n\%$ of the time. E.g. L_{A10} is the A-weighted level exceeded for 10% of the time and as such can be used to represent a maximum level. Similarly, L_{A90} is the level exceeded for 90% of the measurement period, and is often used to describe the underlying background noise.
$L_{Amax,T}$	The instantaneous maximum A-weighted sound pressure level which occurred during the measurement period, T . It is commonly used to measure the effect of very short duration bursts of noise, e.g. sudden bangs, shouts, car horns, emergency sirens etc. which audibly stand out from the ambient level.
Octave band	A frequency band in which the upper limit of the band is twice the frequency of the lower limit.
1/3 Octave band	A frequency band which is one-third of an octave band.

Appendix B – Instrumentation

The following equipment was used for the measurements.

Table D1 – Equipment Calibration Details – (White – 115 Beech Road, Chorlton, Bedroom)

Manufacturer	Model Type	Serial No.	Calibration	
			Certificate No.	Valid Until
Norsonic Type 1 Sound Level Meter	Nor140	1406969	U45341	12 September 2025
Norsonic Pre Amplifier	1209	21204		
Norsonic ½" Microphone	1225	285599	45340	12 September 2025
Norsonic Sound Calibrator	1251	34966	U45339	12 September 2025

Table D2 – Equipment Calibration Details – (White – 115 Beech Road, Chorlton, Living Room)

Manufacturer	Model Type	Serial No.	Calibration	
			Certificate No.	Valid Until
Norsonic Type 1 Sound Level Meter	Nor140	1406969	U45341	12 September 2025
Norsonic Pre Amplifier	1209	21204		
Norsonic ½" Microphone	1225	285599	45340	12 September 2025
Norsonic Sound Calibrator	1251	34966	U45339	12 September 2025

Appendix C – Graphs, Measurement Positions and Site Plans

115 Beech Road, Chorlton.

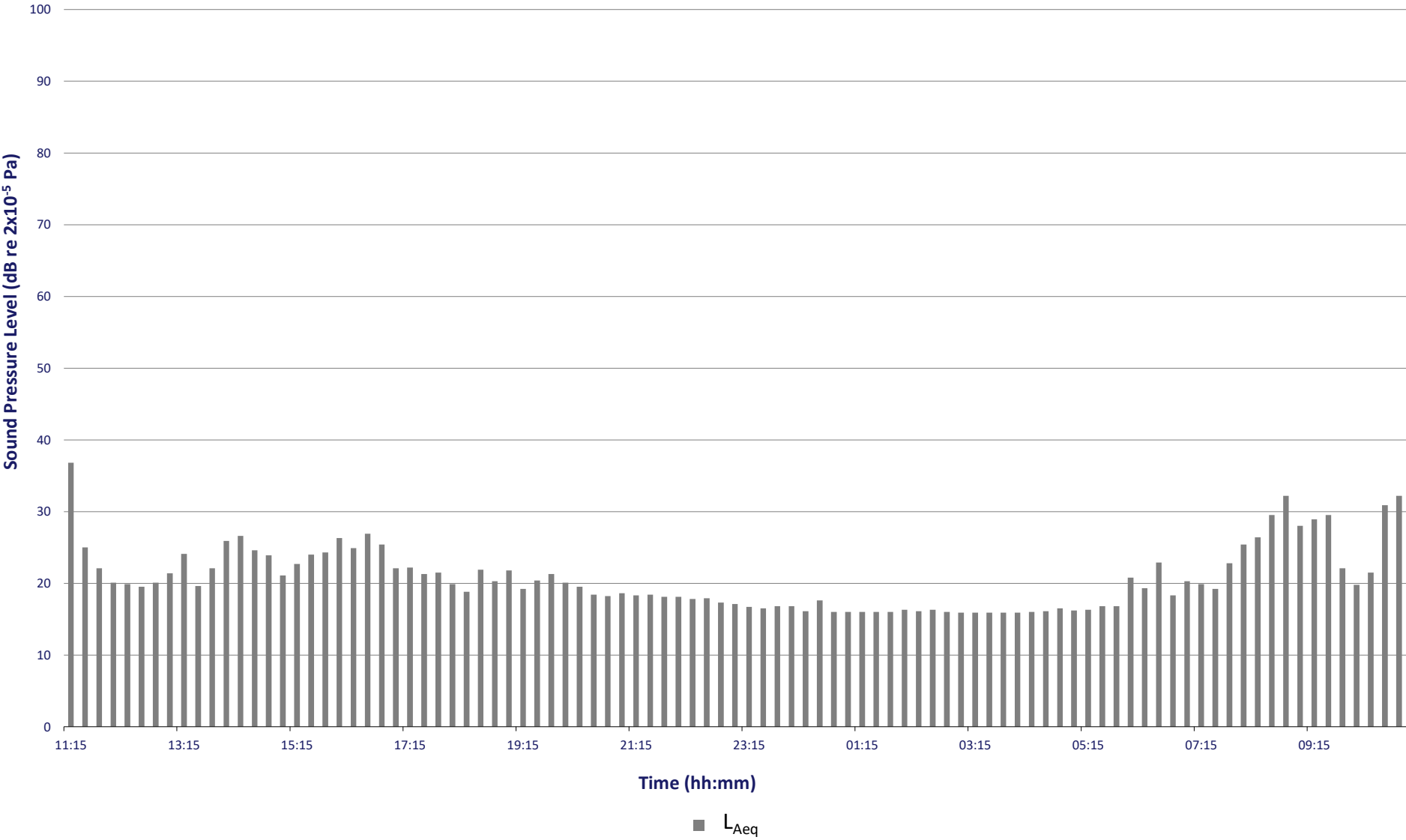
L_{Aeq} Time History

115 Beech Road. Bedroom. Monday 1st - Tuesday 2nd July 2024.



Project:

Graph 1



115 Beech Road, Chorlton.

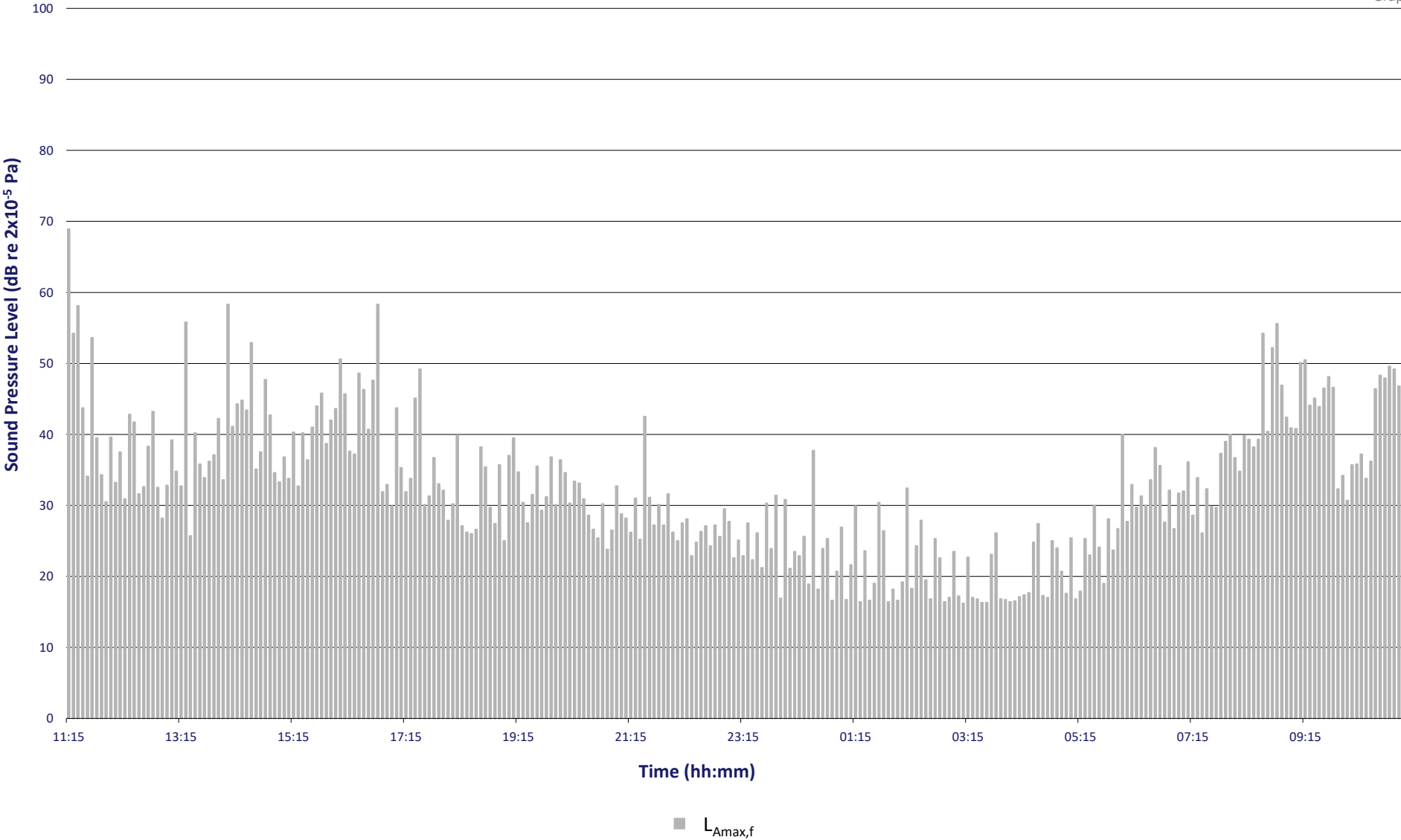
L_{Amax,f} Time History

115 Beech Road. Bedroom. Monday 1st - Tuesday 2nd July 2024.



Project:

Graph 2

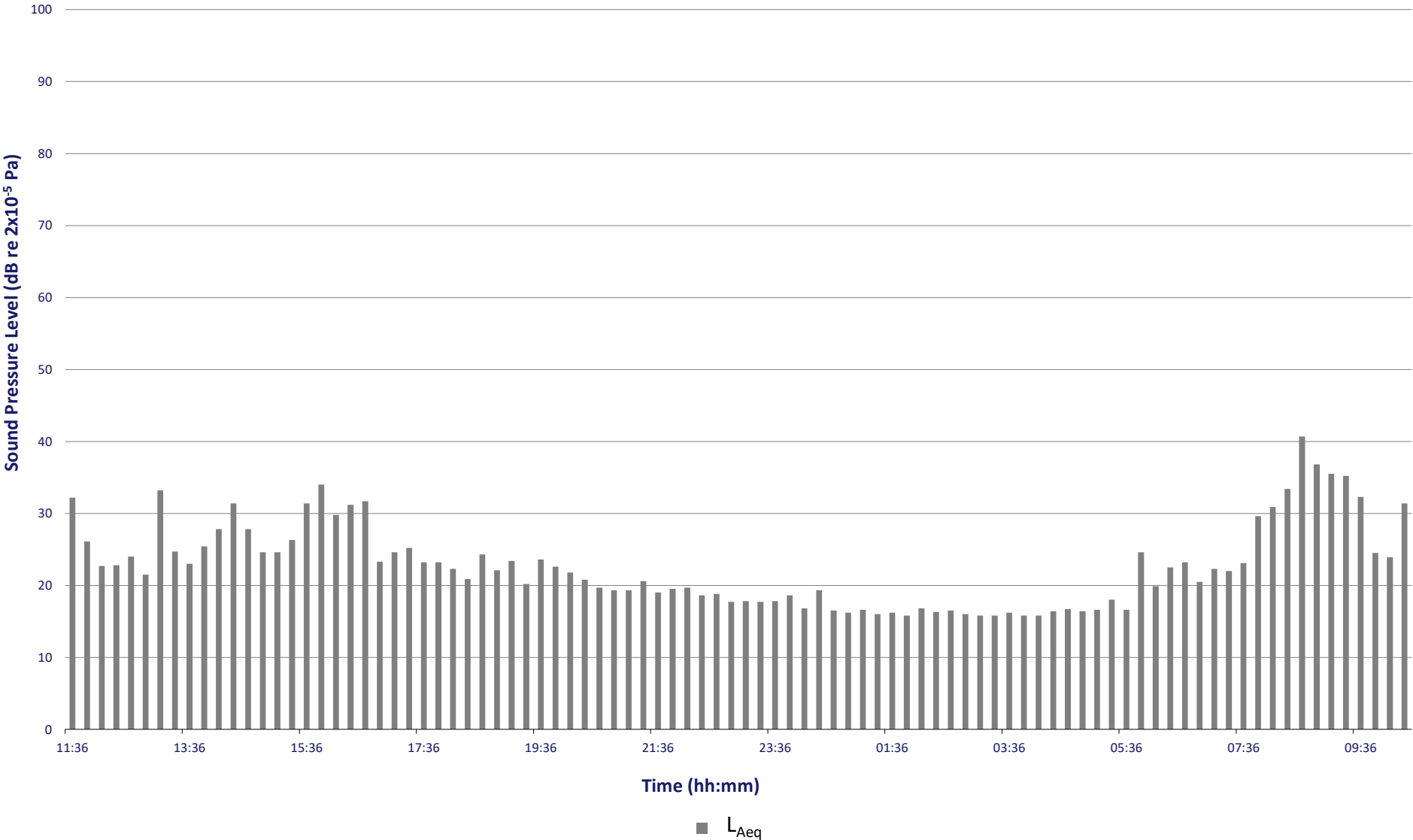


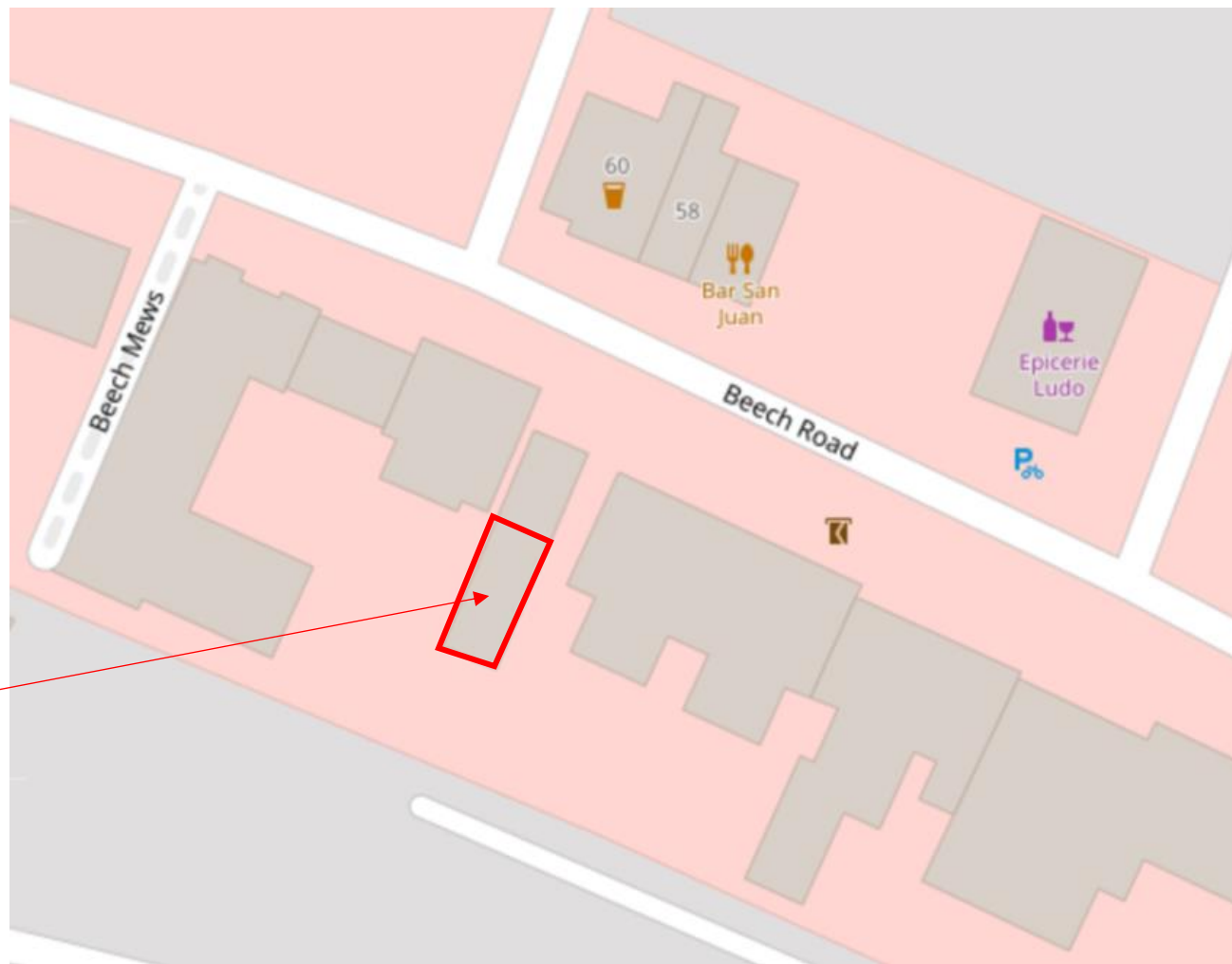
115 Beech Road, Chorlton.

L_{Aeq} Time History

115 Beech Road. Living Room. Monday 1st - Tuesday 2nd July 2024.

Graph 3





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115 Beech Road, Chorlton
Site of 115 Beach Road, Chorlton.
Project 13394

Figure 1
05 July 2024
Not to Scale





Photograph 1

115 Beech Road, Chorlton
1st Floor Bedroom
Project 13394

Photograph 1
05 July 2024
Not to Scale





Photograph 2

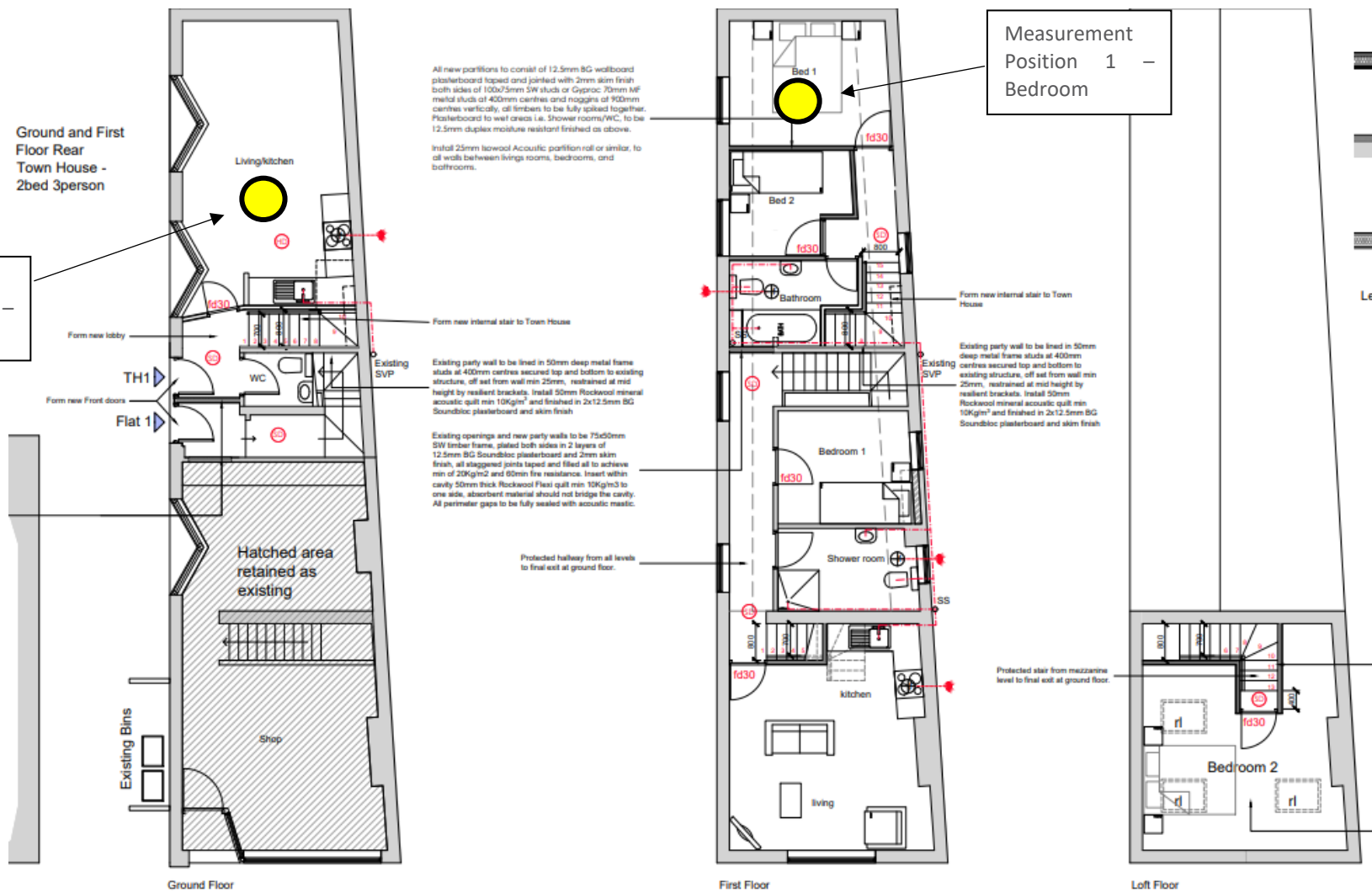


Photograph 3

115 Beech Road, Chorlton
Ground Floor Living Room
Project 13394

Photographs 2 & 3
05 July 2024
Not to Scale





115 Beech Road, Chorlton
 Post development GAs and Measurement Positions in Bedroom and Living Room
 Project 13394

Drawing 1
 05 July 2024
 Not to Scale



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