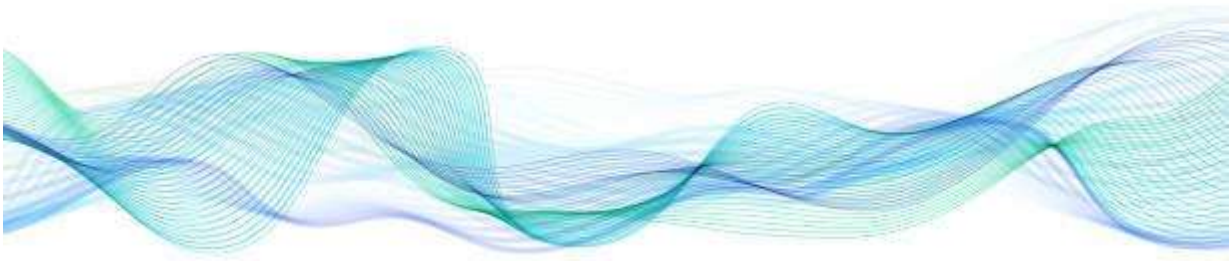
RS Acoustic Engineering

63-65 Upper Chorlton Road
Noise Validation Report



Project: 63-65 Upper Chorlton Road

Client: J Greenwood (Builders) Ltd

Project Reference: RSA467A/2024

Report Date: 16 June 2025

Document History

Version	Date	Comments	Initials
1	16 June 2025	Issue for planning	RS / LT

Authorised by	Ryan Swales, BSc, MIOA Director & Principal Consultant
Signature	[redacted]

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1. Introduction

1.1 RS Acoustic Engineering Ltd has been appointed by J Greenwood (Builders) Ltd to undertake a noise survey and provide a validation report with regard to a new residential development at No.63-65 Upper Chorlton Road, Whalley Range, Manchester, M16.

1.2 The existing detached property has been refurbished and extended to provide 12 self-contained apartments.

1.3 Planning permission was granted for the development in February 2024, subject to several conditions. There is a noise related planning condition which states that a noise validation survey and report needs to be submitted to the Local Planning Authority.

1.4 The dominant source of noise at the site is road traffic on Upper Chorlton Road (B5218).

1.5 Continuous sound level monitoring was conducted in June 2025 within a fully complete and part furnished apartment. Measurements were conducted within the ground floor lounge/kitchen on the front elevation facing Upper Chorlton Road and also within the bedroom on the rear elevation.

1.6 The survey and assessment were conducted by Mr Ryan Swales ($BSc_{(Hons)}$, MIOA), Principal Acoustic Consultant and Member of the Institute of Acoustics.

1.7 The results of the noise survey have been presented, along with a discussion of the results with respect to the appropriate planning condition and acoustic performance targets.

2. Assessment Guidance & Design Criteria

Manchester City Council Planning Conditions

2.1 Manchester City Council granted full planning permission for the development subject to several conditions (ref: 138589/FO/2023).

2.2 With regard to noise, the following condition was stipulated:

9b). 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.

British Standard 8233:2014: Guidance on sound insulation and noise reduction for buildings

2.3 BS 8233 provides guidance regarding acoustic criteria and noise levels appropriate for various types of space that have different functions.

2.4 With regard to dwellings, appropriate internal ambient sound levels are given in Table 2.1 for bedrooms, living rooms and dining rooms. The guidelines take into consideration the effect of internal noise on sleep and also the effect of noise on resting, listening and communicating.

Table 2.1 - Indoor ambient noise levels for dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	---
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	---
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

2.5 BS 8233 (Note 7) also suggests that in some circumstances, it is appropriate to relax the indoor ambient noise level targets by up to 5 dB:

Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.

World Health Organisation: Guidelines for community noise (1999)

2.6 The guidelines and corresponding sound level targets within this historical document corroborate those given within BS 8233:2014. The guideline values are to help avoid speech interference, annoyance and sleep disturbance within dwellings.

2.7 With regard to sleep disturbance and maximum L_{AFmax} sound levels, the study undertaken by Vallet & Vernet (1991) suggests that for good sleep, indoor sound pressure levels should not exceed approximately 45 dB L_{Amax} more than 10-15 times per night.

Professional Practice Guidance on Planning & Noise (2017)

2.8 Professional Practice Guidance on Planning and Noise (ProPG) has been produced in order to provide practitioners with guidance on a recommended approach to the management of noise within the planning system in England.

2.9 The NPPF encourages improved standards of design. This guidance document encourages better acoustic design for new residential development and aims to protect people from the harmful effects of noise.

2.10 The scope of ProPG is restricted to the consideration of new residential development that will be exposed predominantly to airborne noise from transportation sources.

2.11 The recommended ProPG internal noise level guidelines are presented in Table 2.2. The guidelines reflect and extend current practice contained within BS 8233:2014.

Table 2.2 - ProPG internal noise level guidelines

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	---
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	---
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$ 45 dB $L_{Amax,F}$

3. Internal Noise Survey

Survey methodology

3.1 Continuous sound level monitoring was conducted over a 24-hour period within the ground floor lounge/kitchen of flat 1 on the front elevation. Measurements were performed from 12:30 hours on Thursday 12th through to 12:30 hours on Friday 13th June 2025.

3.2 Continuous sound level monitoring was also conducted over a 24-hour period within the ground floor bedroom on the rear elevation. Measurements were again performed from 12:30 hours on Thursday 12th through to 12:30 hours on Friday 13th June 2025.

3.3 All windows were closed during the survey and the frame-mounted acoustic ventilator units were fully open. Subjectively, the noise ingress via the trickle vents was relatively low.

3.4 The property location and survey measurement positions are shown in Figure 3.1 and Figure 3.2. The measurement rooms and equipment are shown in the photographs overleaf.

Figure 3.1 - Site location and survey measurement positions

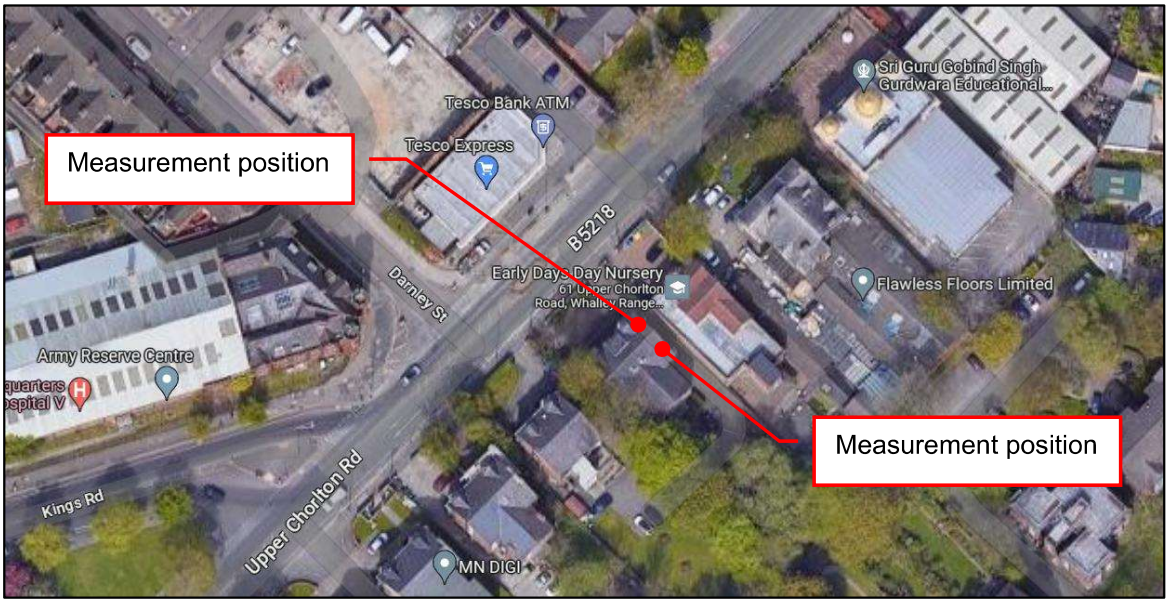


Figure 3.2 - Ground floor layout showing survey measurement positions

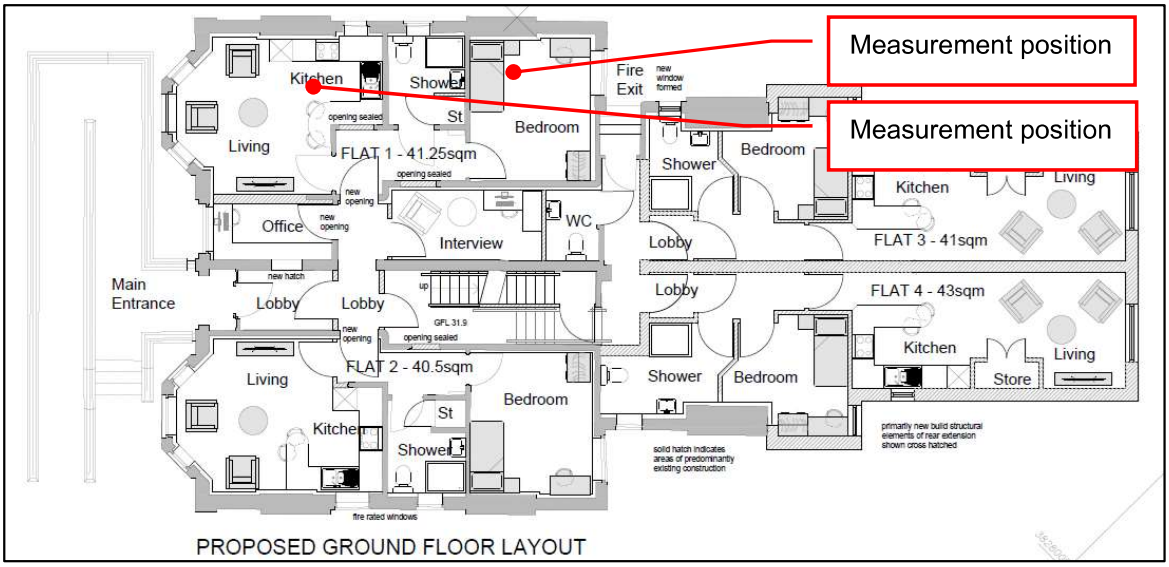


Figure 3.3 - Photographs showing measurement rooms and survey equipment



Survey equipment

3.5 The survey was conducted using the following Class-1 specification equipment:

- Brüel & Kjaer 2250 sound level meter, microphone type 4189, preamplifier type ZC0032.
- Brüel & Kjaer 2260 sound level meter, microphone type 4189, preamplifier type ZC0032.
- CEL-120/1 Acoustic calibrator.

3.6 Calibration of the sound level meter and microphone used for the measurements are traceable to UKAS accredited laboratories (calibration certificates can be provided upon request).

3.7 The calibration of both sound level meter and microphone was checked using a 1 kHz tone at 94 dB prior to and following the measurements performed. Calibration drift was less than 0.1 dB.

Measured indices

3.8 Although a wide range of statistical sound level data was recorded during the survey, the L_{Aeq} and L_{AFmax} indices are of most interest in this instance:

- $L_{Aeq,T}$ - The A-weighted equivalent continuous sound pressure level over a period of time, T. Representative of the 'average' sound pressure level over a given period (commonly used to describe the 'ambient' sound level).
- $L_{AFmax,T}$ - The A-weighted 'maximum' sound pressure level that occurred during a given period, T (commonly used for the assessment of occasional loud noises).

3.9 Sound pressure level measurements are taken with an A-weighting (denoted by a subscript 'A', e.g. L_{Aeq}) to approximate the frequency response of the human ear.

3.10 Further information regarding the basic quantities used for the description of noise in community environments can be found within BS 7445-1:2003.

Results summary

3.11 Table 3.1 presents the survey results for the ground floor lounge/kitchen. Measured values have been rounded to the nearest whole number.

Table 3.1 - Summary of measured ambient sound pressure levels, lounge/kitchen

Date	Period	Duration, T (hours)	$L_{Aeq,T}$ dB	10th highest[1] $L_{AFmax,T}$ dB
Thursday 12/06/2025 to Friday 13/06/2025	Daytime (07:00-23:00)	16	34	---
	Night-time (23:00-07:00)	8	29	45

[1]The 10th highest measured value (indoor sound levels should ideally not exceed 45 dB L_{Amax} more than 10-15 times per night within bedrooms) ---Daytime values are not presented since there is no daytime L_{AFmax} criterion.

3.12 Within the lounge/kitchen the daytime sound pressure level was 34 dB $L_{Aeq,16hour}$ and the night-time sound pressure level was 29 dB $L_{Aeq,8hour}$.

3.13 Table 3.2 presents the survey results for the ground floor bedroom. Measured values have again been rounded to the nearest whole number.

Table 3.2 - Summary of measured ambient sound pressure levels, bedroom

Date	Period	Duration, T (hours)	$L_{Aeq,T}$ dB	10th highest[1] $L_{AFmax,T}$ dB
Thursday 12/06/2025 to Friday 13/06/2025	Daytime (07:00-23:00)	16	24	---
	Night-time (23:00-07:00)	8	22	36

[1]The 10th highest measured value (indoor sound levels should ideally not exceed 45 dB L_{Amax} more than 10-15 times per night within bedrooms) ---Daytime values are not presented since there is no daytime L_{AFmax} criterion.

3.14 Within the bedroom the daytime sound pressure level was 24 dB $L_{Aeq,16hour}$ and the night-time sound pressure level was 22 dB $L_{Aeq,8hour}$.

3.15 The measured sound pressure levels are notably lower within the rear bedroom due to being acoustically screened from passing road traffic.

3.16 The daytime sound level target of 35 dB $L_{Aeq,16hour}$ for living rooms/lounges and the night-time target of 30 dB $L_{Aeq,8hour}$ for bedrooms are therefore being easily achieved. The recommended target of 45 dB $L_{AFmax,T}$ is also being achieved within bedrooms during the night.

3.17 The measured sound pressure levels are presented graphically in Figure 3.4 and Figure 3.5 overleaf.

Figure 3.4 - Graph showing measured ambient sound pressure levels, lounge/kitchen

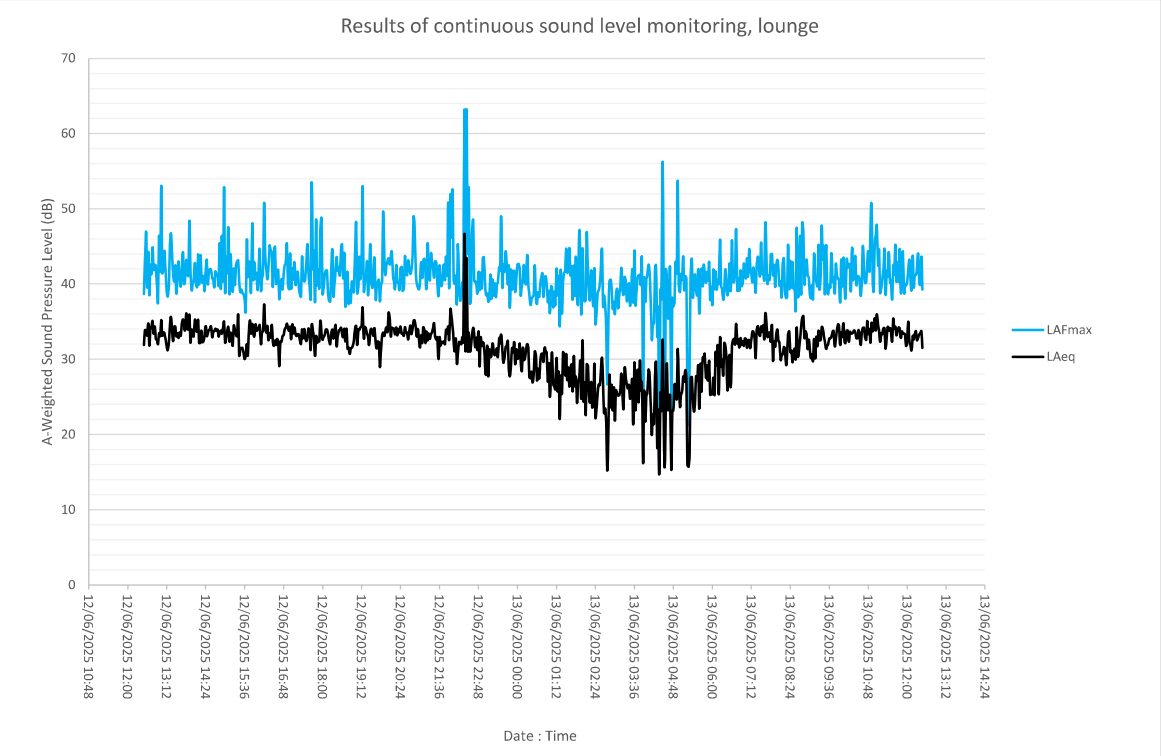
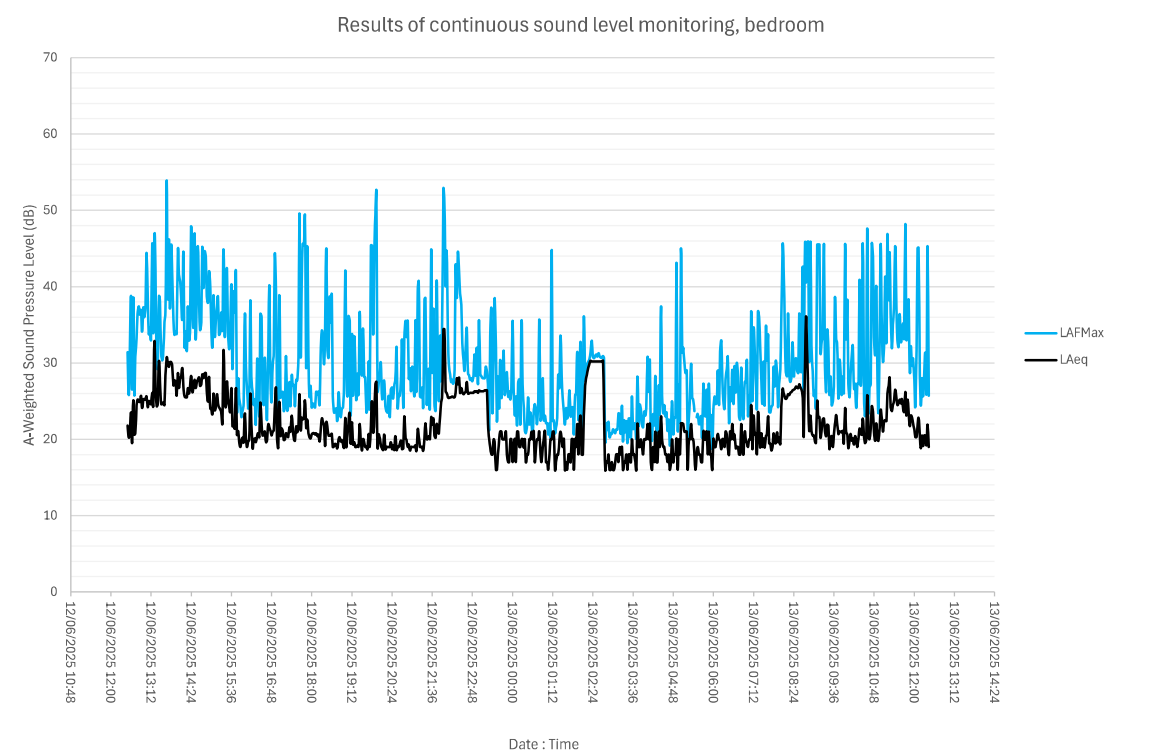


Figure 3.5 - Graph showing measured ambient sound pressure levels, bedroom



4. Building envelope construction

4.1 The external wall consists of a double leaf brickwork construction. The sound insulation performance of the wall is expected to be in the region of 45 to 55 dB R_w+C_{tr}.

4.2 The roof is of a traditional timber construction, tiled, with loft insulation and an internal plasterboard finish. The sound insulation performance is expected to be in the region of 39 to 43 dB R_w+C_{tr}.

4.3 Triple glazed units have been installed to habitable rooms. The construction appears to be 4 mm glass/12 mm cavity/4 mm glass/12 mm cavity/4 mm glass. Triple glazed units typically provide a sound insulation performance in the region of 26 to 29 dB R_w+C_{tr}.

4.4 Ventilation of the property is achieved via opening windows and via sound attenuating (acoustic) frame-mounted trickle vents (Glazpart Link Vents Mk2).

Figure 4.1 - Photographs showing front elevation, glazing and acoustic ventilator units



4.5 The original noise assessment identified that standard thermal double glazing consisting of 4 mm glass/16 – 20 mm cavity/4 mm glass would provide sufficient sound insulation. The installed triple glazed units achieve a marginally greater acoustic performance than those assumed in the previous noise assessment.

4.6 The previous noise assessment also identified that the ventilator unit should provide a sound insulation performance of at least 38 dB ($D_{n,e,w}$) in the open position. According to the manufacturer's literature, the new units achieve the recommended acoustic performance in the open position and achieve 51 dB ($D_{n,e,w}$) in the closed position.

4.7 The glazing and ventilator units are in accordance with the recommendations given within the noise assessment report dated October 2023.

5. Conclusion

5.1 Continuous sound level monitoring has been conducted within a fully complete part furnished ground floor flat.

5.2 The daytime and night-time sound level targets have been easily achieved within two habitable rooms with the windows closed and the frame-mounted trickle vents fully open.

5.3 The survey results indicate that the building envelope construction, glazed units and acoustic trickle vents provide sufficient sound insulation.

5.4 The noise related planning condition stipulated by Manchester City Council has been satisfied in this instance.

Appendix A
Floor plans and elevations

Figure A.1 - Proposed floor plans

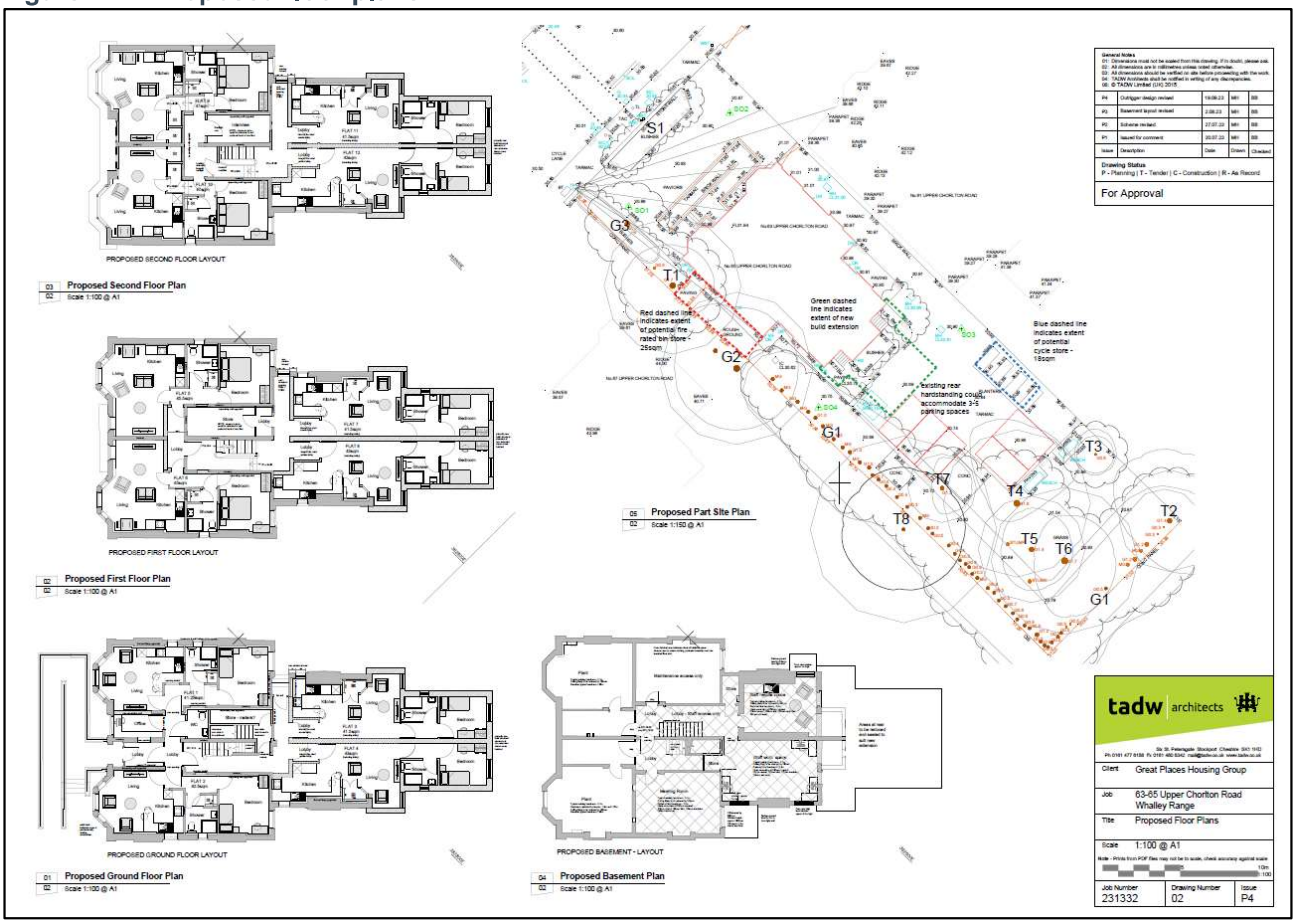


Figure A.2 - Existing and proposed elevations



Appendix B
Assessment terminology

Assessment terminology

Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$Pa).
dB(A)	The most widely used weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or L_{Aeq}, L_{A90} etc, according to the parameter being measured.
Acoustic environment	Sound from all sources as modified by the environment.
Ambient sound level	The totally encompassing sound in a given situation at a given time; it is usually composed of sound from many sources, near and far.
Equivalent continuous sound level - $L_{Aeq,T}$	The A-weighted equivalent continuous sound pressure level over a period of time, T. Representative of the 'average' sound pressure level over a given period (commonly used to describe the 'ambient' sound level).
Maximum sound level - $L_{AFmax,T}$	The A-weighted 'maximum' sound pressure level that occurred during a given period, T (commonly used for the assessment of intermittent loud noises).
Background sound level - $L_{A90,T}$	The sound pressure level that is exceeded for 90% of the measurement time interval, T. $L_{A90,T}$ is often used to describe the 'background' sound level.
Habitable room	Any room used or intended to be used for sleeping, cooking, living or eating purposes (enclosed spaces such as bath or toilet facilities, service rooms, corridors, laundries, hallways, utility rooms or similar spaces are excluded from this definition).
R_w	The weighted sound reduction index expressed in dB. A single number quantity for airborne sound insulation rating.
R_w+C_{tr}	The 'C_{tr}' term is added to the single number rating R_w to take account of the characteristics of particular sound spectra (e.g. road traffic).