REBECCA HARDY-WOODS

7 MAROON ROAD, WYTHENSHAWE

NOISE ASSESSMENT FOR PLANNING PURPOSES

07 August 2026

AEC REPORT: P6065/R01/TLC

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CONTENTS

		Page
1.0	INTRODUCTION	3
2.0	SITE LOCATION AND NOISE CONTOURS	3
3.0	ASSESSMENT OF EXTERNAL ENVELOPE	5
APPENDIX A – Acoustic Terminology in Brief		6

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1.0 INTRODUCTION

1.1 Acoustic & Engineering consultants Limited (AEC) has been instructed by Rebecca Hardy-Woods to undertake a noise assessment to demonstrate compliance with the pre-commencement condition requested by Manchester City Council (MCC) in relation to the proposed single story extension to an existing residential property at 7 Maroon Road, Wythenshawe.

1.2 Based on a previous scheme undertaken by AEC on Maroon Road, Wythenshawe, MCC requested that a noise impact assessment shall include the following in their Pre-Commencement Conditions document:

a. Confirm the aviation noise exposure of the site using the most recent Manchester Airport noise contours for LAeq,16hr (day) and LAeq,8hr (night).
b. Identify and justify all reasonable and necessary mitigation measures required to ensure that internal noise levels within bedrooms and living rooms meet the standards in BS 8233:2014 (or any updated, nationally recognised equivalent).
c. Demonstrate that, with mitigation in place, future occupiers will not be exposed to unacceptable aviation noise and that internal noise levels will be achieved under closed window conditions with a suitable alternative means of ventilation. The development must be carried out in full accordance with the approved NIA and mitigation measures prior to first occupation of the extension and shall be retained and maintained thereafter.

1.3 The daytime and night-time ambient noise limit levels to be achieved in habitable rooms, based on British Standard 8233:2014 '*Guidance on sound insulation and noise reduction for buildings*' (BS8233), due to sources such as aircraft noise are presented in Table 1.1, below.

Table 1.1 – Internal Noise Level Limits within Habitable Rooms

Activity	Location	Noise Level Limit, dB	
		Daytime 0700 – 2300h $L_{Aeq,16h}$	Night-Time 2300 – 0700h $L_{Aeq,8h}$
Resting	Living Room	35	-
Dining	Dining Room/Area	40	-
Sleeping (daytime resting)	Bedroom	35	30

1.4 Acoustic terminology is discussed in brief in Appendix A.

2.0 SITE LOCATION AND NOISE CONTOURS

2.1 The site is located at 7 Maroon Road, Wythenshawe, as shown on Figure 2.1, below. The site is located under the flight path into Manchester Airport.

2.2 The proposed scheme consists of a single storey extension consisting of a cloakroom, toilet and shower room, and a kitchen/dining room.

2.3 As there is no specific requirement to be achieved within a cloakroom and toilet and shower room, this report assess noise breaking into the kitchen/dining room during the daytime only.

Figure 2.1 – Site Location Plan

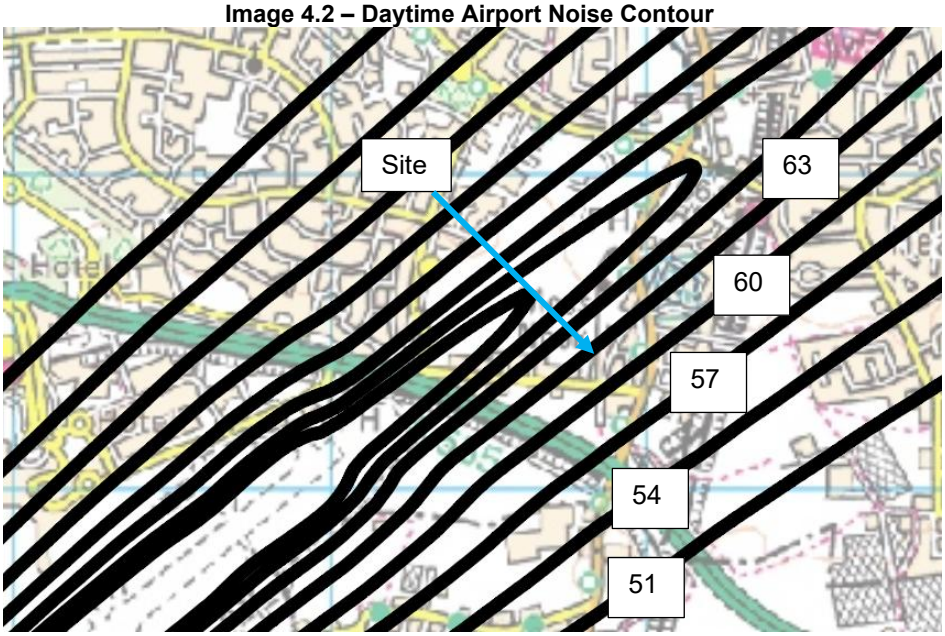


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Noise Contours

2.4 The Noise Contours issued by Manchester Airport in 2024/25 have been used in the assessment of noise affecting the site. Image 1.1, below, shows that the site falls between the 60/63dB$L_{Aeq,16h}$ contours during the daytime period.

Image 4.2 – Daytime Airport Noise Contour



2.5 It has been observed on previous assessments undertaken by AEC in locations where planes fly over properties into airports that noise levels on the facades facing the incoming aircraft are generally 5dB higher than the façade facing away. In this development, that equates to the northern and western elevations being 5dB higher than the eastern and southern elevations.

2.6 Therefore, as the extension is to the east of the property and the windows serving the kitchen would have no direct line of sight of the aircraft flying into Manchester Airport, it is expected that ambient noise levels would be below 60dB$L_{Aeq,16h}$.

3.0 ASSESSMENT OF EXTERNAL ENVELOPE

3.1 The sound insulation requirements of the external envelope (walls and roof), glazing and ventilators to meet the internal noise level of 40dB$L_{Aeq,16h}$ as stated in BS8233 have been calculated based on:

- The methodology presented in BS 8233:2014
- A single trickle vent per room (in the open position)

3.2 Table 3.1 below provides in principle mitigation measures to achieve suitable internal noise levels within the kitchen/dining room.

Table 3.1 – Sound Insulation Performances of the External Envelope

Element	Acoustic Performance	Build-Up	Comment
Glazing	35dBR_w / 32dBR_w + C_{tr}	10mm Glass / 16mm Argon / 6mm Glass	Including bifold doors and sky lights.
Ventilation	38dB$D_{n,e,w}$	acoustic trickle vents	Throught the frame vents or, through the wall ventilators would be suitbale.
External Walls	≥ 50dBR'_w	102.5 mm facing brick, 100 mm cavity with mineral wool, 100 mm dense block inner leaf Or 102.5 mm facing brick, Kingspan thermal insulation, 100 mm dense block inner leaf, a layer of 15mm thick SoundBloc supported off a resilient bar	Designed to be 10dB above the glazing.
Roof	≥50dBR'_w	roof tiles, a large cavity, with at least 100mm mineral fibre in the cavity, two layers of 15mm dense plasterboard supported off resilient bars	Designed to be 10dB above the glazing.

3.3 Frames and seals should be selected in order that the above performances are not downgraded.

3.4 The mitigation measures presented in Table 3.1 are not onerous and are in line with similar developments AEC has worked on in the Wythenshawe area adjacent to the airport.

APPENDIX A – Acoustic Terminology in Brief

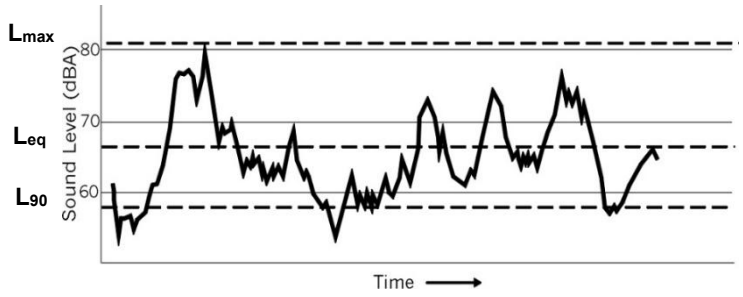
General

Sound is produced by mechanical vibration of a surface, which sets up rapid pressure fluctuations in the surrounding air. The rate at which the pressure fluctuations occur determines the pitch or *frequency* of the sound. The frequency is expressed in Hertz *(Hz)*, that is, cycles per second. The human ear is sensitive to sounds from about 20 Hertz to 20,000 Hertz. Although sound can be of one discreet frequency - a 'pure tone' - most noise is made up of many different frequencies.

The human ear is more sensitive to some frequencies than others, and modern instruments can measure sound in the same subjective way. This is the basis of the A-weighted sound pressure level *dBA,* normally used to assess the effect of noise on people. The dBA weighting emphasizes or reduces the importance of certain frequencies within the audible range

Sound / Noise Units

The figure below shows an example of sound level varying with time. Because of this variation over time the same period of noise can be described by several different levels. The most common of these are described below.



Commonly Used Descriptors for Sound / Noise	
$L_{Amax,F/S}$	The maximum (A-weighted) sound level measured during a given time. 'Fast' or 'Slow' meter response should be cited.
$L_{Aeq,T}$	The equivalent continuous (A-weighted) sound level. It may be thought of as the "average" sound level over a given time, T. It is used for assessing noise from various sources: industrial and commercial premises, construction sites, railways and other intermittent noises. **It can be considered as the "ambient" noise level.**
Free-field Level	This refers to the sound level measured outside, away from reflecting surfaces.
R_w	Single number rating used to describe the laboratory airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz.
R'_w	Apparent sound reduction index - Single number rating used to describe the sound reduction index of an on-site construction over a range of frequencies, typically 100-3150Hz.
$+C_{tr}$	A road traffic spectrum adaptation term which is used to describe the low frequency sound insulation performance of building elements.