Date: 10th July 2026

OLD MOAT SURE START, MANCHESTER
AIR SOURCE HEAT PUMP NOISE TEST

1. INTRODUCTION

1.1. BACKGROUND & OBJECTIVES

E3P has undertaken a post-completion noise test of the installed Air Source Heat Pumps (ASHPs) at Old Moat Sure Start, Manchester.

The purpose of the testing was to verify the noise levels associated with the completed ASHP installation and to compare the measured results and site observations against the predictions and mitigation measures presented within the Noise Impact Assessment, reference 51-440, dated 31 March 2025.

The Noise Impact Assessment considered noise from the proposed ASHP installation using the manufacturer's supplied noise data and included a 2.4 m high acoustic barrier as part of the proposed mitigation strategy.

Following the application of the recommended mitigation measures, the Noise Impact Assessment predicted sound levels of approximately 38 to 40 dB at a distance of 3 m from the ASHP installation.

E3P therefore attended the site once the ASHPs were operational to undertake source-proximal measurements and subjective observations of the completed installation. The results have been reviewed against the predicted noise levels presented within the Noise Impact Assessment to determine whether the installed plant is operating in general accordance with the assumptions and conclusions of that assessment.

This Technical Note has been prepared by Ollie Harrison, Acoustic Consultant at E3P, and reviewed and authorised by Lee Faulkner, Associate Director at E3P and a full corporate member of the Institute of Acoustics.

2. APPROVED DETAILS AND NIA OUTCOME

The previous Noise Impact Assessment evaluated noise from the proposed ASHP installation using manufacturer-supplied noise data. The assessment considered mitigation in the form of 2.4 m high acoustic barriers around the ASHP units.

During the post-completion visit, E3P confirmed that the ASHPs had been installed within an acoustic enclosure incorporating acoustic louvred panels. This differs from the barrier arrangement considered within the Noise Impact Assessment; however, the completed enclosure provides physical acoustic screening to the ASHPs and would be expected to provide a comparable, and potentially greater, level of acoustic mitigation than the barrier arrangement assessed, subject to the final construction details.

The Noise Impact Assessment concluded that, with the proposed mitigation measures in place, adverse impact at nearby non-associated receptors was unlikely.

The noise model presented within Figure 4 on page 11 of the Noise Impact Assessment predicted sound levels of approximately 38 to 40 dB at positions around 3 m from the ASHP installation, following the inclusion of the proposed 2.4 m high acoustic barriers as detailed below.



The purpose of the post-completion testing was therefore to determine whether the completed ASHP installation displayed any evidence of operating materially above the levels and impacts anticipated within the Noise Impact Assessment.

3. NOISE TEST RESULTS

E3P visited site during a typical weekday period when the site is open. The operator of the site ensured that heating and/cooling was activated in multiple rooms in order to engage all ASHPs within the enclosure.

It was confirmed that all six units were active at the same time which is considered worst-case.

The survey was conducted between the following periods:

- 06:53 – 07:15 Thursday 2nd July 2026.

The following noise measurement position was chosen for the Noise Survey:

- Noise Measurement Position 1 (NMP1): Located approximately 3 m from the façade/doors of the enclosure on the northern elevation. The microphone was located at a height of 1.4 m above ground level and in free-field conditions. The sound climate was dominated by road traffic on the local road network, birdsong and very low-level noise from the ASHPs.

A summary of the measured sound pressure levels is presented in Table 3.1. The measured $L_{Aeq,T}$ values include contributions from the ASHP installation and the prevailing residual sound environment.

Table 3.1 Attended ASHP Noise Measurement Results

MEASUREMENT PERIOD	DOOR TO ENCLOSURE	MEASURED SOUND PRESSURE LEVEL, $L_{Aeq,T}$ (dB)	COMMENTARY
06:53 – 07:04	Door open	52.5	Surrounding traffic, birdsong, low level plant barely audible
07:04 – 07:15	Door closed	49.3	

The surveyor attended the boundary with the residential dwellings, and ASHP noise was not audible. Indeed, these levels equal that measured during the background sound survey conducted as part of the planning application which measured ambient sound levels of between 47 and 55 dB during the morning periods.

The equipment outlined in Table 3.2 was used for the noise survey.

Table 3.2 Noise Measurement Equipment and Calibration Dates

MEASUREMENT POSITION	EQUIPMENT DESCRIPTION	MANUFACTURER AND TYPE NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
NMP1	Sound Level Meter	Fusion	14226	17/12/2027
	Pre-amplifier	Pre22	2135072	
	Microphone	40CD	470570	
	Calibrator	CR 515	99204	13/08/2026

The sound level meter was field calibrated before and after measurements with no significant drift witness.

4. ASSESSMENT

The measured sound levels at NMP1 were 52.5 dB $L_{Aeq,T}$ with the enclosure door open and 49.3 dB $L_{Aeq,T}$ with the enclosure door closed.

These measured levels should not be interpreted as the source-specific sound level of the ASHP installation, as they include contributions from all sound sources present during the survey, including road traffic, birdsong and other residual environmental sound. Indeed, the door closure should result in a significant reduction given the acoustic properties of the enclosure.

The measured levels should instead be regarded as ambient sound levels at NMP1 and, consequently, as an upper bound for the contribution from the ASHP installation.

Throughout the survey, the measured sound environment was controlled primarily by surrounding road traffic, birdsong and other residual environmental sources. Although the ASHPs were operational, their contribution was subjectively low and could not be reliably distinguished from the prevailing residual sound environment at approximately 3 m from the enclosure.

At the boundary with the neighbouring residential dwellings, noise from the ASHP installation was not audible.

The absence of audible ASHP noise at the residential boundary indicates that the completed installation is not producing a material noise impact at the nearest noise-sensitive receptors.

The Noise Impact Assessment predicted sound levels of approximately 38 to 40 dB at 3 m from the ASHP installation following the inclusion of mitigation. The attended measurements were higher than this range; however, the measured values were controlled by the prevailing residual sound environment and do not represent the ASHP source-specific level. The ASHP contribution could not be separated from the residual sound environment because it was not readily distinguishable during the survey.

On this basis, the site observations do not indicate that the completed ASHP installation is operating materially above the levels or impacts anticipated within the Noise Impact Assessment.

E3P therefore considers that the noise-related requirements of the provided NIA have been satisfactorily addressed.

I trust the information provided in this letter report is satisfactory however if there is anything further, please do not hesitate to contact me.

Yours sincerely,
For and on behalf of E3P Ltd

Ollie Harrison
Acoustic Consultant