Date: 27th July 2026

BLACKLEY CREMATORIUM, MANCHESTER
AIR SOURCE HEAT PUMP NOISE VALIDATION

1. INTRODUCTION

1.1. BACKGROUND & OBJECTIVES

E3P has undertaken a post-completion noise test of the installed Air Source Heat Pump (ASHP) at the office and yard of Blackley Crematorium.

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 presented within the Noise Impact Assessment referenced "R2332-REP01A-JW" provided by Red Acoustics on the 2nd June 2025.

The Noise Impact Assessment considered noise from the proposed ASHP installation using the manufacturer's supplied noise data.

Following the installation of the proposed ASHP, the Noise Impact Assessment predicted sound levels of approximately 65 dBA at a distance of 1 m from the ASHP without mitigation in place.

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

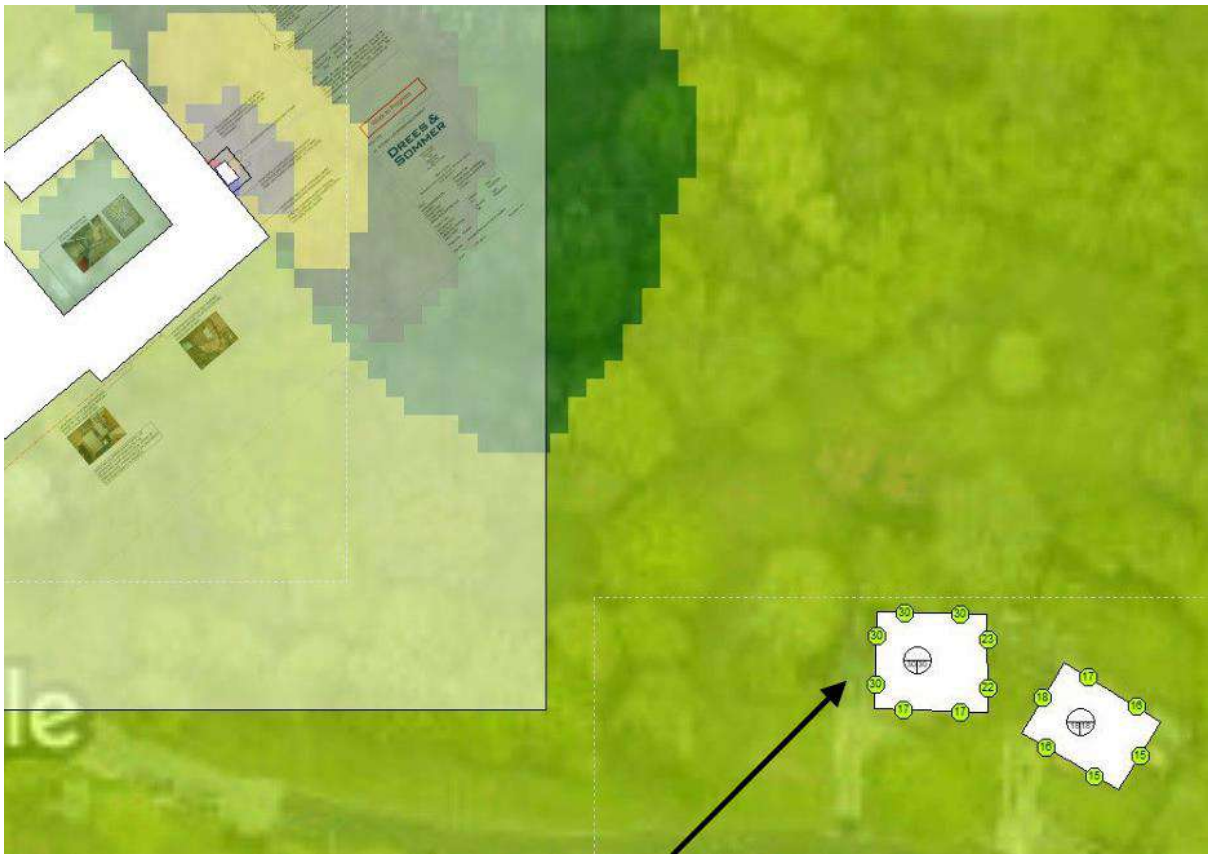
The previous Noise Impact Assessment evaluated noise from the proposed ASHP installation using manufacturer-supplied noise data. The assessment considered mitigation in the form of 3.0 m high acoustic barriers around the ASHP units.

During the post-completion visit, E3P confirmed that the ASHPs had been installed within an open-top enclosure with an access door on the northern elevation.

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 5.1 on page 14 of the Noise Impact Assessment predicted sound levels of approximately 30 dB at the closest receptor to the development, with the inclusion of a proposed barrier arrangement with height of 3 m, as shown below.

The ASHPs are confirmed to be active between 06:30 to 15:30 Monday to Friday.



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 the ASHP within the barrier arrangement.

The survey was conducted between the following periods:

- 09:58-10:15 Monday 15th 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 the ASHP.

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
09:58-10:01	Door open	62.1	Dominated by the ASHP during its worst-case period of maximum load.
10:11-10:15	Door closed	53.8	

As the NIA did not provide an expected noise level at a certain distance and nor can E3P measure the ASHP at the receptors, due to extraneous noise sources, confirmation of source output is not possible from measurement alone. As such, the above will be used to predict noise levels at the receptors.
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	Svantek SV 971A	154342	08/01/2027
	Microphone	Svantek 7152	93784	
	Calibrator	Cirrus CR:515	109471	20/11/2026

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

4. ASSESSMENT

For the purposes of this technical note, E3P has used noise modelling software, CadnaA 2026 MR1, to determine the impact of noise from the ASHP upon nearby non-associated noise sensitive receptors.

The following inputs have been included in the model:

- ASHP noise levels have been calibrated using data measured at NMP1.
- Site elevations have been taken as existing by way of a 2 m grid Digital Terrain Model (DTM) which contains public sector information licensed under the Open Government License v3.0.
- Existing buildings are included.
- A reflection order of 2 has been used in all calculations.
- Noise levels generated using ISO 9613-2:2024 “Acoustics – Attenuation of sound during propagation outdoors” as incorporated into CadnaA software.

Figures 3 and 4 present the levels of noise associated with the installed ASHP at the Office & Yard location at Blackley Crematorium.

The predicted noise levels at the closest receptors based on the measured data captured at NMP1 are detailed in Figures 3 and 4 as 29 dB and 28 dB with the enclosure door open and closed, respectively.

The referenced Noise Impact Assessment predicted a specific sound level of 30 dB at these receptors and concluded that a low impact is predicted in accordance with BS 4142.

Given the background sound levels were measured to be 50 dB in the daytime and 45 dB in the nighttime, a rating level with +5 dB of corrections falls comfortably below the measured background sound level for the measured data with the enclosure door open and closed.

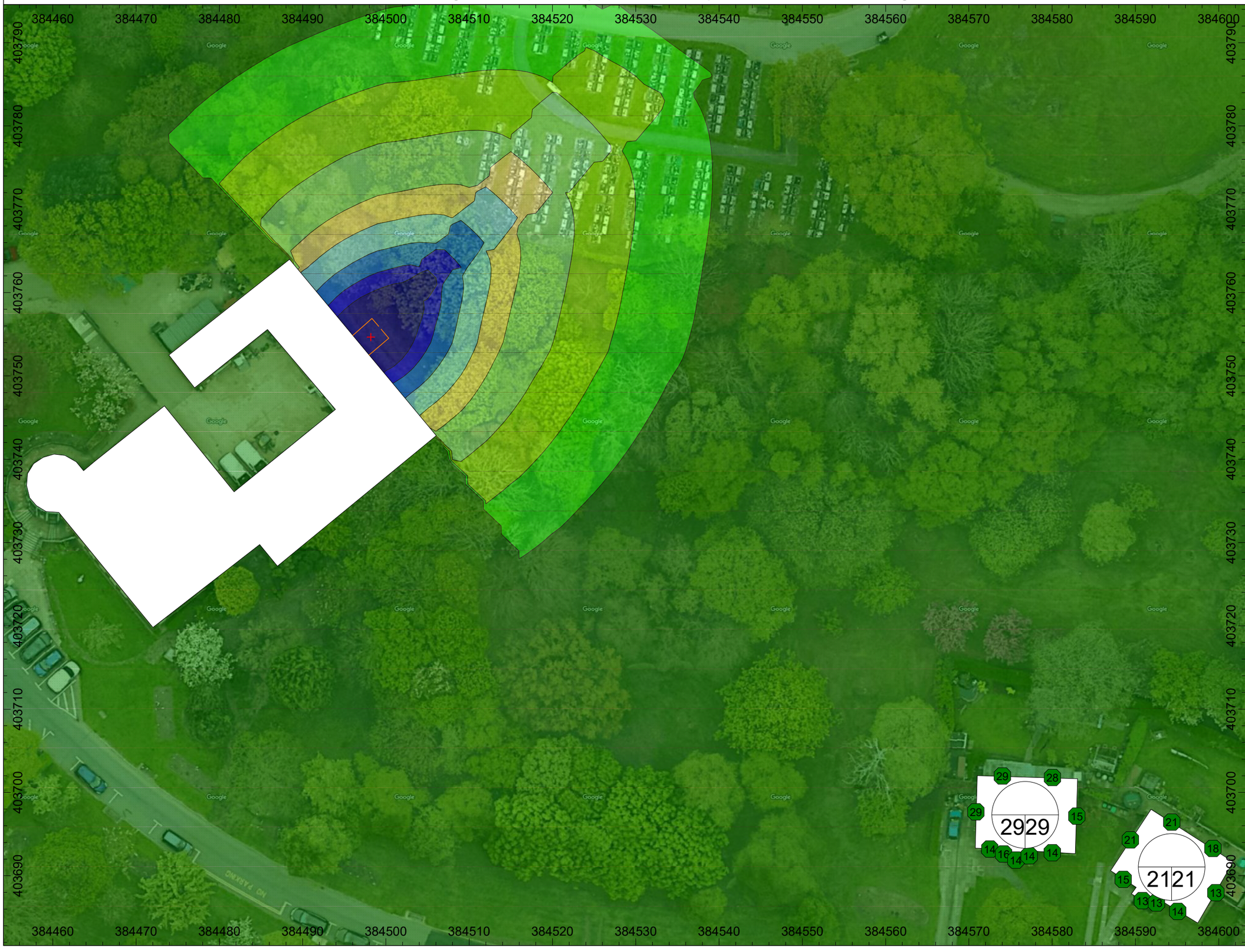
E3P therefore considers that the noise-related requirements of the provided NIA have been satisfactorily addressed.

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

Figure 3 - Grid Noise Map Enclosure Door Open - Calculation at 1.5m above ground level



Project:
Blackley Crematorium Office & Yard

Project-No:
52-084

Client:
Equans Regeneration Limited

Predicted Noise Level, LAeq,T (dB)

- ... <= 38
- 38 < ... <= 40
- 40 < ... <= 42
- 42 < ... <= 45
- 45 < ... <= 48
- 48 < ... <= 50
- 50 < ... <= 52
- 52 < ... <= 55
- 55 < ...

Noise Map Objects

- Point Source
- Building
- Barrier
- Building Evaluation
- Calculation Area

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Project Engineer: Ollie Harrison
Date: 27/07/26

Figure 4 - Grid Noise Map Enclosure Door Closed - Calculation at 1.5m above ground level



Project:
Blackley Crematorium Office & Yard

Project-No:
52-084

Client:
Equans Regeneration Limited

Predicted Noise Level, LAeq,T (dB)

- ... <= 38
- 38 < ... <= 40
- 40 < ... <= 42
- 42 < ... <= 45
- 45 < ... <= 48
- 48 < ... <= 50
- 50 < ... <= 52
- 52 < ... <= 55
- 55 < ...

Noise Map Objects

- Point Source
- Building
- Barrier
- Building Evaluation
- Calculation Area

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