

Ref: 50-477-TN3-1
Date: 6th January 2025

CASEY GROUP

BY Email

DISCHARGE OF CONDITIONS 21 AND 22 CHARLESTOWN, BENMORE ROAD

1. BACKGROUND & OBJECTIVES

E3P have been commissioned to produce a technical note that provides information sufficient in order to discharge conditions 21 and 22 of the planning approval (135788/FO/2022). The conditions are given below. Only part a of condition 21 is addressed here, part b is to be addressed following completion:

21 a) Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. Prior to commencement of the use hereby approved the scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning authority.

b) Prior to the operation of the scheme a verification report shall be submitted to and approved in writing by the City Council as local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post completion testing to confirm that the 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 agreed noise criteria. Reason - To minimise the impact of the development and to prevent a general increase in pre-existing background noise levels around the site, pursuant to policies SP1 and DM1 of the Manchester Core Strategy (2012) and saved policy DC26 of the Unitary Development Plan for the City of Manchester (1995).



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22) Prior to any above ground works, details of any locations of enclosures and samples of the materials, design and colouration to be used for any acoustic enclosures of the development hereby permitted shall be submitted to and approved in writing by the local planning authority. The development shall be constructed only using the approved materials and shall be retained as such at all times thereafter. Reason - To ensure that the appearance of the development is acceptable to the City Council as local planning authority in the interests of the visual amenity of the area within which the site is located, pursuant to policy DM1 of Manchester's Core Strategy

As such, E3P have drawn upon the previously completed Noise Assessment (50-477-R1-1 dated November 2021) which was undertaken by E3P in order to consider the above conditions.

The completed NIA included two separate sites, one close to Whitemoss Road and one at the former Whitemoss Day Care, this site. The layout is shown below:



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Figure 1 Site Layout



2. NOISE SURVEY DATA – JANUARY 2024

In addition to the findings and surveys of the original reports, E3P have conducted additional noise surveys in order to satisfy the requirements of the planning condition, specifically to include rush hour and night-time measurements.

An additional noise survey was conducted in order to capture road traffic sound from White Moss Road during rush hour and night-time periods. As such, the following survey was conducted:

The survey was undertaken during the following period:

 16:30 Wednesday 24th January to 09:00 Thursday 25th January 2023.

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

 Noise Measurement Position: Located in a position considered representative of the proposed facades of blocks 7, 8 and 9, as shown in Figure 1. The microphone was located at a height of 1.5 m above ground level and in free-field conditions. Sound sources consisted of road traffic along White Moss Road.

Table 1 details the measured sound pressure levels.

TABLE 1 MEASURED ROAD TRAFFIC SOUND LEVELS – WHITE MOSS ROAD

MEASUREMENT START TIME	MEASURED SOUND PRESSURE LEVELS (dB)			
	$L_{Aeq,T}$	10th Highest $L_{Amax,fast}$	$L_{A90,T}$	$L_{A10,T}$
17:00	50.9	N/A	48.7	52.6
18:00	49.8		48.2	50.8
19:00	47.9		46.0	49.3
20:00	46.0		44.3	47.0
21:00	44.7		43.0	45.3
22:00	44.0		41.9	44.7
23:00	41.7	54.4	38.8	43.1
00:00	38.5		35.7	40.1
01:00	35.2		33.2	36.8
02:00	34.9		33.2	36.1
03:00	36.8		34.8	38.4
04:00	37.5		35.0	39.4
05:00	41.3		38.5	42.8



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MEASUREMENT START TIME	MEASURED SOUND PRESSURE LEVELS (dB)			
	$L_{Aeq,T}$	10th Highest $L_{Amax,fast}$	$L_{A90,T}$	$L_{A10,T}$
06:00	45.9	N/A	42.5	47.8
07:00	46.7		44.8	48.1
08:00	48.0		45.3	49.3

To inform the ASHP noise assessment, the median daytime and night-time background sound levels from the measured values above are used. Specifically, a daytime background sound level of 45 dB $L_{A90,1hr}$ and a night-time background sound level of 40 dB $L_{A90,15mins}$. The daytime background is taken as the median value over the full daytime period. The night-time is the median measured value between the hours of 23:00-00:00 and 05:00-07:00, 15-minute periods when the heating systems at the majority of plots are likely to be in use.

Figure 2 shows the measurement position chosen.

Figure 2 January 2024 survey measurement position



3. PROPOSED ASHPS

E3P understands that The Casey Group intend to install Daikin 4kW Altherma LT Monobloc units to the rear of each plot at ground level.

The following Daikin ASHP models are proposed:

-  Daikin Altherma Monobloc 4 kW EDLA04EV3 – Sound Power of 58 dB L_w.

The above sound power level relates to normal typical operations.

The typical arrangement is shown below in Figure 3.

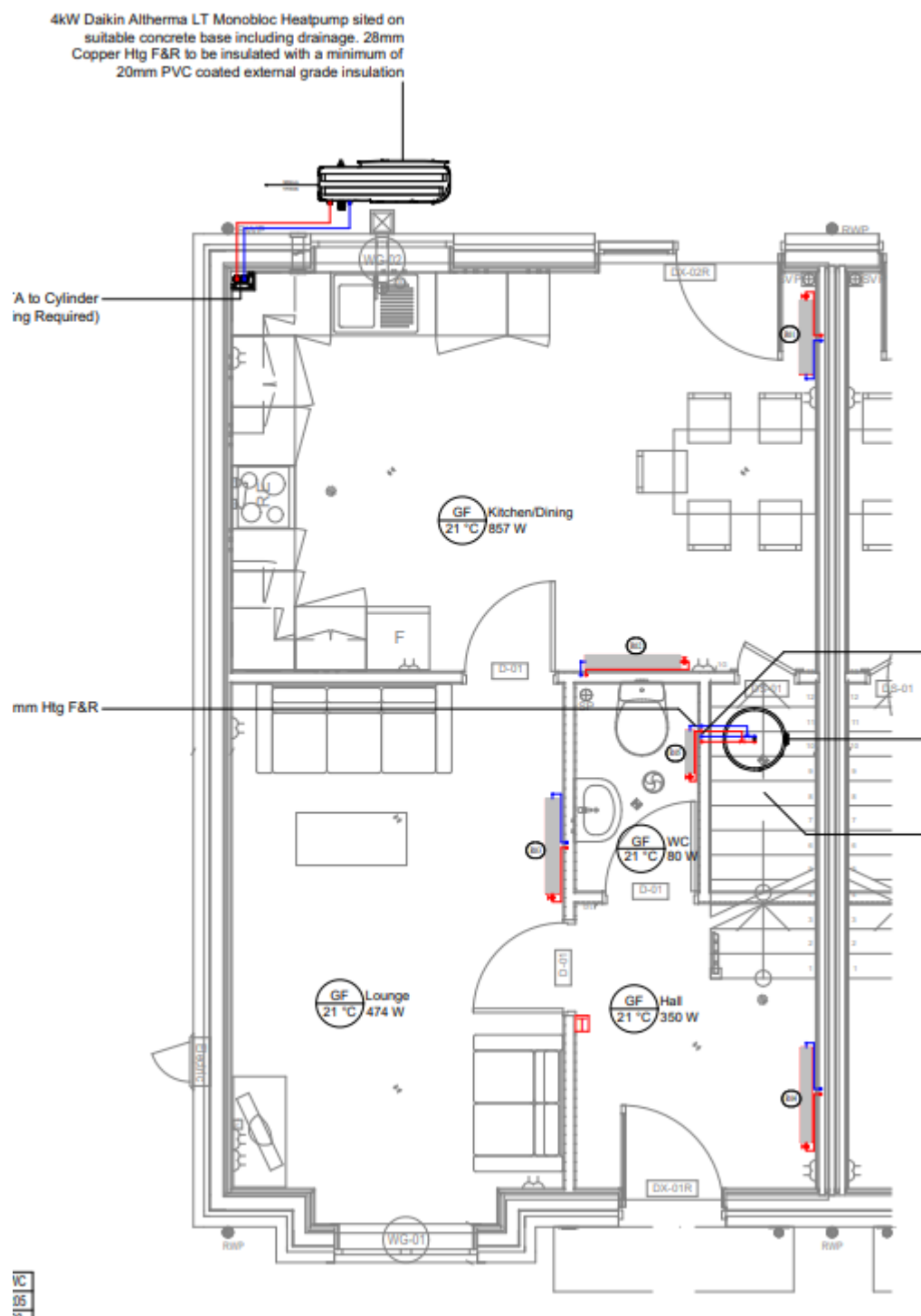


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Figure 3 ASHP arrangement



4. CONSIDERATION OF POTENTIAL NOISE IMPACT

The assessment that is usually applied for potential noise from fixed installations (i.e., externally mounted plant) to give rise to community response is contained in BS 4142. This standard assesses the likely effects of such sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

BS 4142 describes a method for determining the specific sound level and background sound levels outside residential buildings and for assessing whether the noise is likely to give rise to adverse impact. The specific noise level from the commercial source is rated based on any tonal or intermittent characteristics of the sound.

BS 4142 assessment methodology involves comparing the existing background sound level with the predicted rating level from the new development. The difference between the two levels can be used to indicate the likelihood of adverse impact.

4.1. BS 4142 ASSESSMENT

For the purposes of this assessment, E3P has used noise modelling software, CadnaA 2024 MR1, to determine the impact of noise from the ASHPs.

The following inputs have been included in the model:

-  Proposed Site Plan Rev H.
-  A feature correction of +2 dB for just perceptible tonality is applied to the noise model. Given that these are personal ASHPs and the context of the development and receptors, this level of correction is considered robust.
-  Each ASHP is input as a point source with the unit drawn in to resemble the directional output of the ASHP from the fan only.
-  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 1 has been used in all calculations.
-  Noise levels generated using ISO 9613-1 and ISO 9613-2 "*Acoustics – Attenuation of sound during propagation outdoors*" as incorporated into CadnaA software.

Figure 4, appended to the rear of the report, shows noise levels at 1.5 m height across the Site to show garden noise levels. Numbers noted in the circle on the buildings are façade noise levels, left being daytime and right being night-time.



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The background sound levels to be applied here are 45 dB during the day and 40 dB at night as measured at NMP1.

This results in a criteria of 40 dB during the day in rear gardens and 35 dB at 1st floor bedrooms windows.

Table 1 below details the expected noise levels in gardens during the day and at 1st floor windows at night. For garden noise levels, the noise level in the centre of the proposed garden is used for an average assessment. Furthermore, it is considered reasonable to assume that were residents outside to experience the noise, its unlikely heating would be required inside and that residents would sit or socialise within close proximity of the unit.

The grid noise map is appended to the rear and shows 1st floor façade levels and coloured grid at 1.5 m height. Bold values are in exceedance of the -5 dB criterion.

Table 1 **BS 4142 Assessment**

Plot	Predicted rating level in garden (daytime), $L_{A,r}$ (dB)	Daytime criterion (dB)	Predicted rating level at façade (night-time), $L_{A,r}$ (dB)	Night-time criterion (dB)
Unit 1 and 2	37	40	35	35
Unit 3 and 4	38	40	35	35
Unit 5 and 6	38	40	35	35
Unit 7 and 8	38	40	35	35
Unit 9 and 10	39	40	35	35
Unit 11 and 12	37	40	35	35
Unit 13 and 14	37	40	35	35
Unit 15 and 16	38	40	34	35
Unit 17 and 18	38	40	34	35
Unit 19 and 20	39	40	35	35
Existing NW	36	40	29	35
Existing NE	39	40	27	35

In accordance with the guidance in BS4142 and MCCs criterion, the rating levels during the day and night achieve or fall below the required criterion.

It is worth noting, that all criteria are achieved at existing plots that surround the site.

I trust the report is clear and concise but please do not hesitate to contact me should you require further information.

Yours sincerely,
For and on behalf of E3P Ltd

Lee Faulkner
Associate Director



Figure 4 - ASHP Grid Noise Map - Grid calculated at a height of 1.5 m above ground level



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