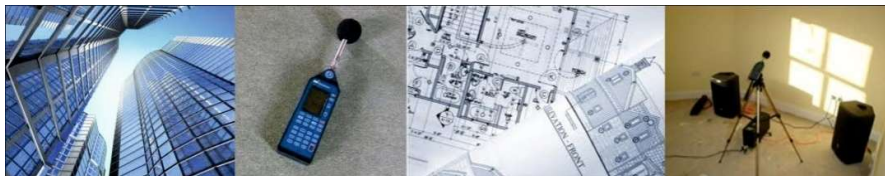


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SUSSEXDOWN CARE HOME WASHINGTON ROAD PULBOROUGH WEST SUSSEX RH20 4DA

ASSESSMENT OF PLANT NOISE TO DISCHARGE CONDITION 13 OF PLANNING CONSENT

v.3

Client:

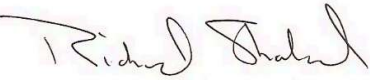
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1 July 2026
Ref: M5734

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Project Reference	M5734
Issue No.	3
Reviewed	Eddie Oxborough MSc MIOA
Signature	
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Signature	
Date	1 July 2026

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1. SUMMARY

- 1.1 An acoustic assessment has been prepared by Ian Sharland Limited, to consider the noise emitted by new building services plant at the Sussexdown Care Home and Apartments¹, Pulborough.
- 1.2 Condition 13 of the planning consent requires that noise be limited to a level 10 dB below the BS4142 assessed background sound levels in the vicinity.
- 1.3 A survey of environmental noise levels has been undertaken to confirm typical values. These were found to be very low, particularly at night.
- 1.4 The proposed plant comprises kitchen extract fan, heat pumps and air conditioning units. Of these, only the heat pumps will operate overnight (on a reduced night-mode setting), and the assessment is based on this operational constraint. It is also noted that the kitchen extract fan will be fitted with attenuators, as detailed in Table 5.1 of this report.
- 1.5 The table below confirms the measured background levels, the derived noise limits for Condition 13 compliance, and the predicted noise levels from the new plant.

	Day 0700 – 2300	Night 2300 – 0700
Assessed Background Sound Levels, L _{A90}	39	22
Condition 13 Limits, L _{Ar, tr}	≤29	≤12
Predicted Rating Level, L _{Ar, tr}	24	8

Table 1.1 – Project Noise Levels

- 1.6 It can be seen that the proposed plant design will meet the requirements of Condition 13.

¹ Noting, however, that the new plant is limited to the care home only.

2. INTRODUCTION

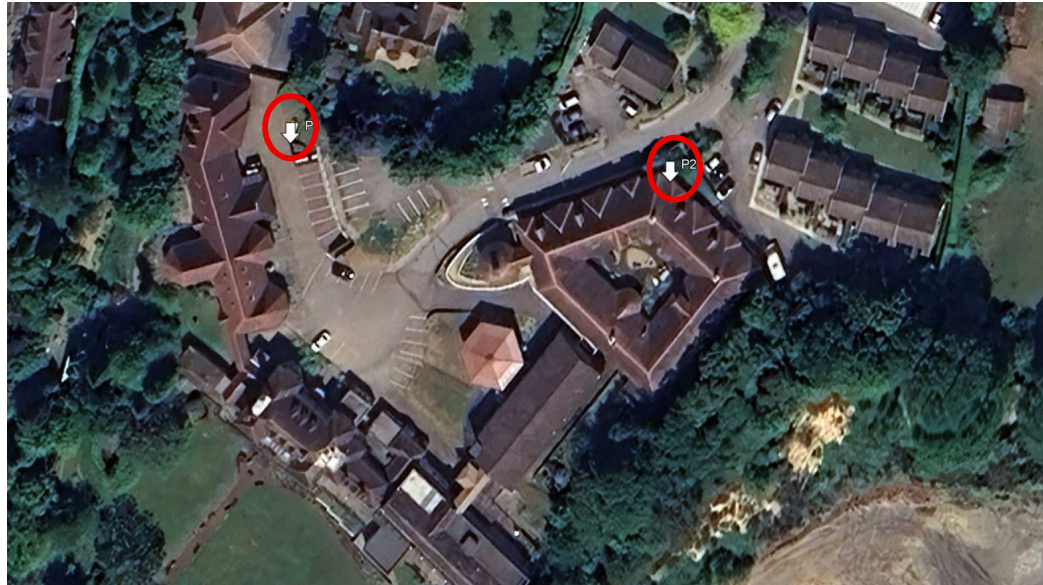
- 2.1 Ian Sharland Limited has been instructed to prepare a formal noise assessment, to demonstrate that noise associated with new building services plant will be designed to meet the acoustic requirements of the planning consent.
- 2.2 The project here involves the redevelopment of existing buildings at the Sussexdown Care Village, to create a 42-bedroom care home, 14 assisted care units, 23 close apartments, and ancillary accommodation with associated external works and landscaping.
- 2.3 The consent for the planning application, DC/24/0543, included a pre-occupation condition setting out the limits for any new plant noise sources. Condition 13 states:

No phase of the development hereby permitted shall be first occupied, or the operation of any building services plant within that phase, until an assessment of the cumulative acoustic impact arising from the operation of all internally and externally indicated plant has been submitted to and approved in writing by the local planning authority. The assessment of the acoustic impact shall be undertaken in accordance with BS4142:2014 (or subsequent superseding equivalent) and other relevant measured and shall include a scheme of attenuation measures to ensure the cumulative rating level of noise emitted from the proposed building services plant is 10 dB(A) less than background.

- 2.4 This report will describe how this condition will be satisfied.

3. EXISTING NOISE CLIMATE

- 3.1 An assessment of environmental noise was undertaken prior to the construction works.
- 3.2 Two Rion NL52 sound level meters were set up on the site, and left for a period of 48 hrs, to record the normal variation of noise experienced locally.
- 3.3 The figure below confirms the locations of each meter. In each case, the microphone was set on a tripod 1.5m above ground level, in a free field position.



- 3.4 The equipment was calibrated before and after the survey and showed no significant variance.
- 3.5 The equipment was configured to measure 5minute samples of the following acoustic parameters:

L_{Aeq} The A-weighted equivalent continuous sound pressure level which, over the sample period, contains the same acoustic energy as the time-varying signal being recorded.

L_{Amax} The A-weighted maximum sound pressure level recorded during each sample period (as measured on fast response).

L_{A90} A statistical parameter representing the A-Weighted noise level exceeded for 90% of each sample period. This is commonly used to describe the underlying background noise levels.

- 3.6 The survey ran from Tuesday 27th May 2025 to Thursday 29th May 2025. Weather conditions during the survey were as follows:

Date	Ave Temp °C	Events	Ave Wind Speed m/s	Prevailing Direction
Tuesday 27/5/25	15	Showers pm	7	SW
Wednesday 28/5/25	17	None	5	W
Thursday 29/5/25	17	None	4	SW

Table 3.1 – Weather Conditions

- 3.7 Figures 2 and 3 shown the variation of noise at each position, across the duration of the survey. It can be seen that the first 24 hours were noticeably louder than the second, and this is attributed to the raised wind speeds in the earlier part of the survey.
- 3.8 An analysis of the underlying background sound levels has been conducted, based on the second 24 hours period only, and this has yielded the following results:

Measure of L _{A90}	Position P1		Position P2	
	Day 0700 – 2300	Night 2300 – 0700	Day 0700 – 2300	Night 2300 – 0700
Mean	38	27	46	30
Modal	39	19	48	19
Median	39	23	46	25
Assessed Value	39	22	47	22

Table 3.2 – Assessment of Background Sound Levels, dB(A)

- 3.9 The signifcnace of these assessed values will be discussed below.

4. PLANT NOISE TARGETS

- 4.1 Condition 13 indicates that the impact of noise from the new plant should be conducted in accordance with BS4142:2014, and should demonstrate that Rating levels are 10 dB below the assessed background sound levels.
- 4.2 In brief, this rating method determines "specific sound level" generated by the new plant, assessed immediately outside the residential properties most likely to be affected. For daytime (07.00 – 23.00hrs) only operation of the new plant, this would be the equivalent continuous noise level of the new noise, evaluated over a 1hr sampling period, its $L_{Aeq,1hr}$. For plant operating during the night-time (23.00 – 07.00hrs) only the reference time interval is 15mins.
- 4.3 Corrections of up to + 9 dB (A) are then made to this "specific sound level" if the new noise has certain acoustic features such as tonality, impulsivity, intermittency and any other sound characteristics, to give the "rating level".
- 4.4 An assessment of the impact of the specific sound level can be determined by subtracting the measured background level from the rating level, and consider the following,
- a) Typically, the greater this difference, the greater the magnitude of the impact.
 - b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
 - d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.
- 4.5 From survey results and the wording of the condition, the following limits are proposed for the new plant:

Day 0700 – 2300	Night 2300 – 0700
29	12

Table 4.1 – Maximum Acceptable Rating Level, $L_{Ar,tr}$, at Noise Sensitive Neighbours dB(A)

5. PREDICTIONS OF PLANT NOISE

- 5.1 The plant under consideration here is located externally, on the south-east elevation of the new care home building (see Figure 1): The schedule includes:

*2 No. Mitsubishi FDC560KXZRE2 A/C Heat Pumps
Confirmed 63 dB(A) @1m, est Sound Power 82 dB(A)*

*2 No. Clade AW290 Heat Pumps
Est 53 dB(A) @1m, Confirmed Sound Power, 72 dB(A)*

*Kitchen Extract System , Ruck EL355 E2 fan
Inlet Sound Power 81 dB(A), Outlet Sound Power 85 dB(A)*

- 5.2 The nearest noise sensitive receptors (outside of the care home), shown on Figure 1, is a row of terrace houses some 40m to the north-east.
- 5.3 The plant is located at a significantly lower level than the houses, with a significant retaining wall (effectively about 4.5m high) acting as an acoustic barrier to the plant area.
- 5.4 All plant will operate during the day, but only the 2 Clade heat pumps will operate overnight – on a reduced power night-mode setting.
- 5.5 The kitchen extract system is fitted with silencers on each side of the fan, these silencers offering the following performance:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000
Atmospheric Side Silencer SIL	dB	4	7	12	20	21	22	16	14
Room Side Silencer SIL	dB	4	7	12	20	21	22	16	14

Table 5.1 – Kitchen Extract System Attenuator Performance, Static Insertion Loss dB

- 5.6 Appendix 1 provides calculations of the noise transmission from the 5 units, and gives a predicted noise level at the receptor.
- 5.7 The noise will be essentially constant in nature, and the attenuated frequency spectra do not indicate any tonal significance. It is also noted that the absolute levels of noise are so low – in both absolute and relative terms – that it is unlikely to be perceptible in any event. On that basis, no BS4142 character corrections are applied.

- 5.8 Table 5.2 summarises the predicted Rating Levels, $L_{A, tr}$, alongside the limits derived from the planning condition:

	Day 0700 – 2300	Night 2300 – 0700
Predicted Rating Level	24	8
Condition 13 Limits	≤ 29	≤ 12

Table 5.2 – Predicted Rating Levels, $L_{A, tr}$, at Noise Sensitive Neighbours dB(A)

- 5.9 It can be seen that the proposed plant will be fully compliant, therefore.

FIGURE 1 – SITE LOCATION

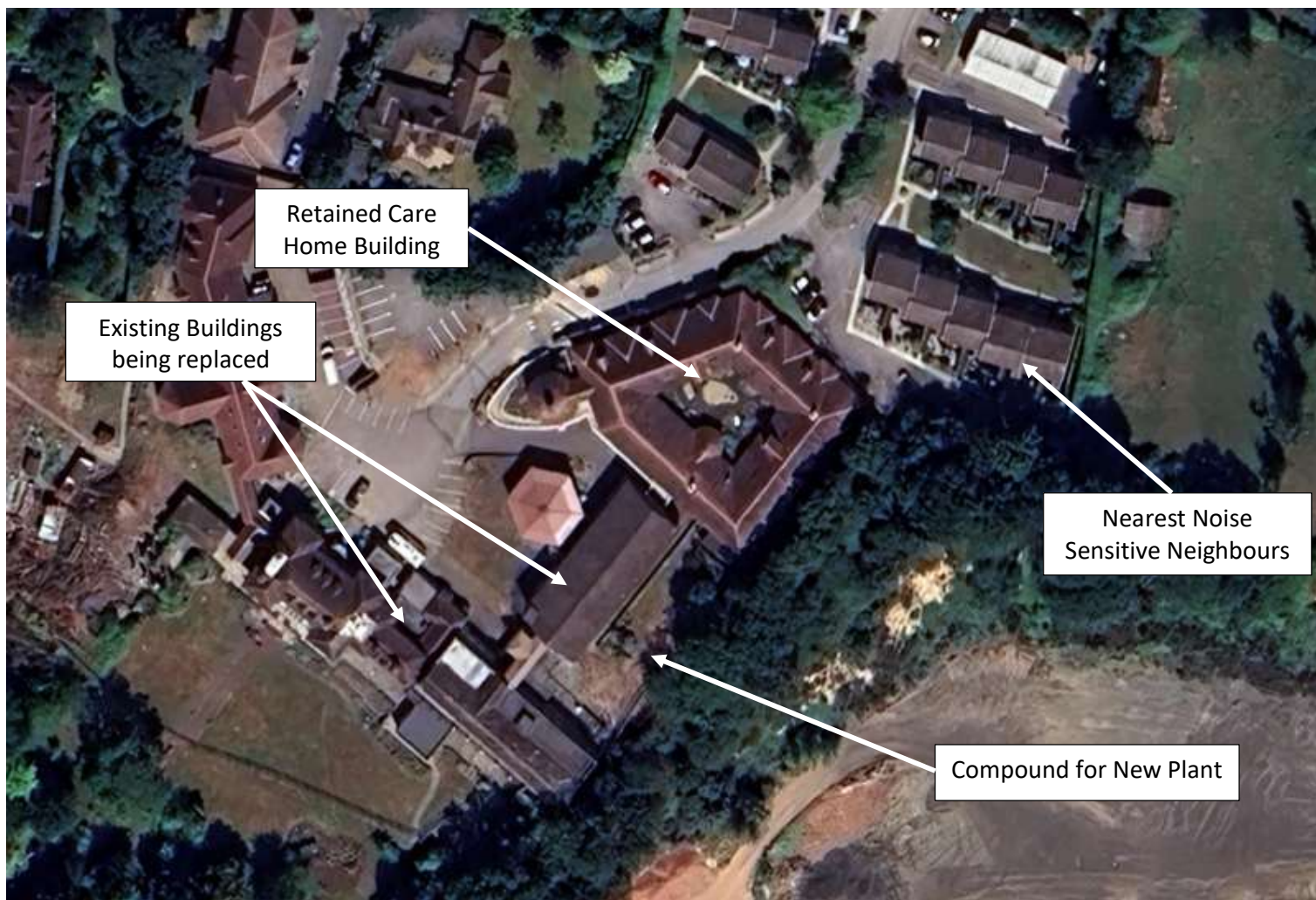


FIGURE 2 – MEASURED NOISE LEVELS AT POSITION P1

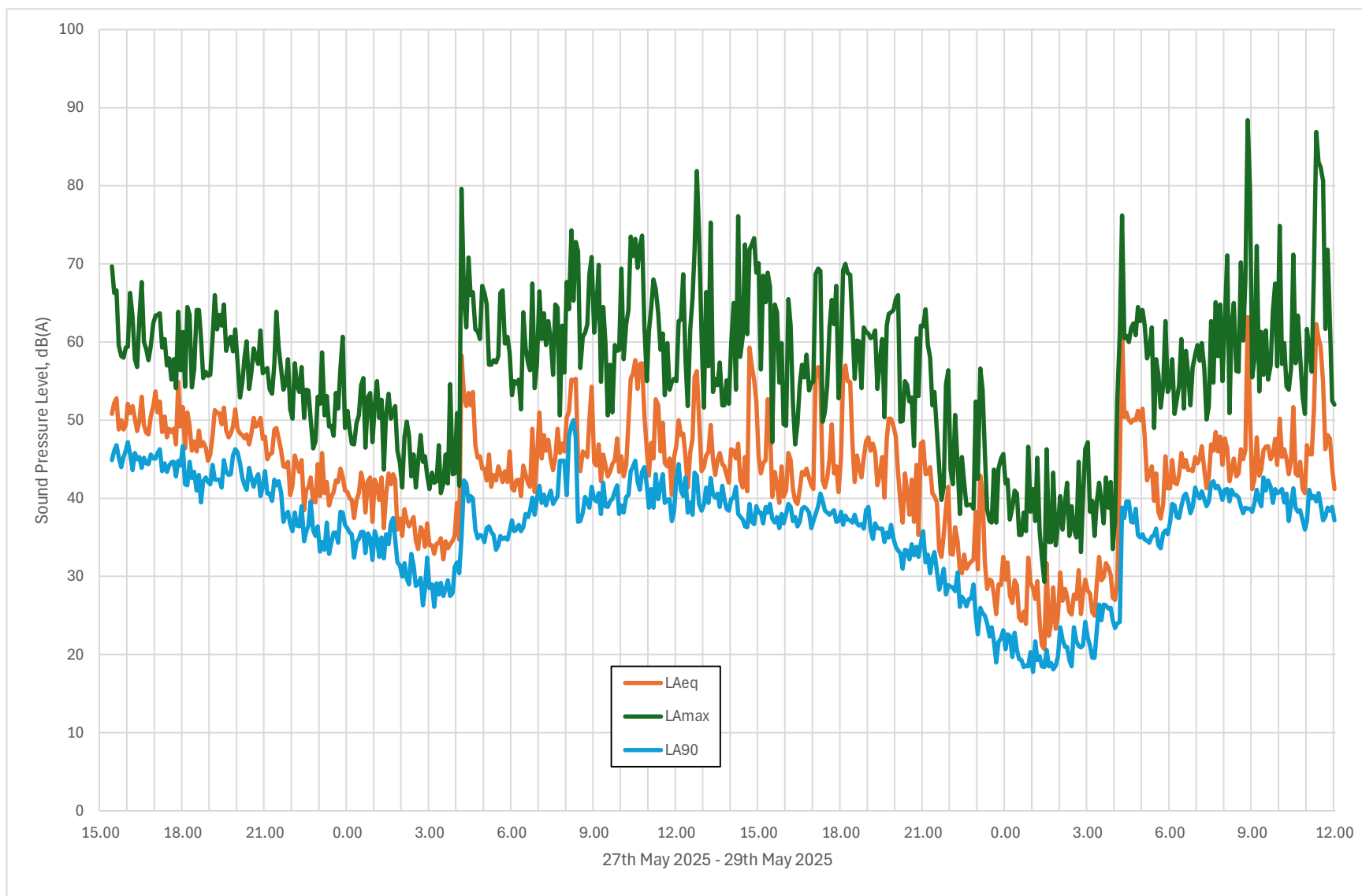
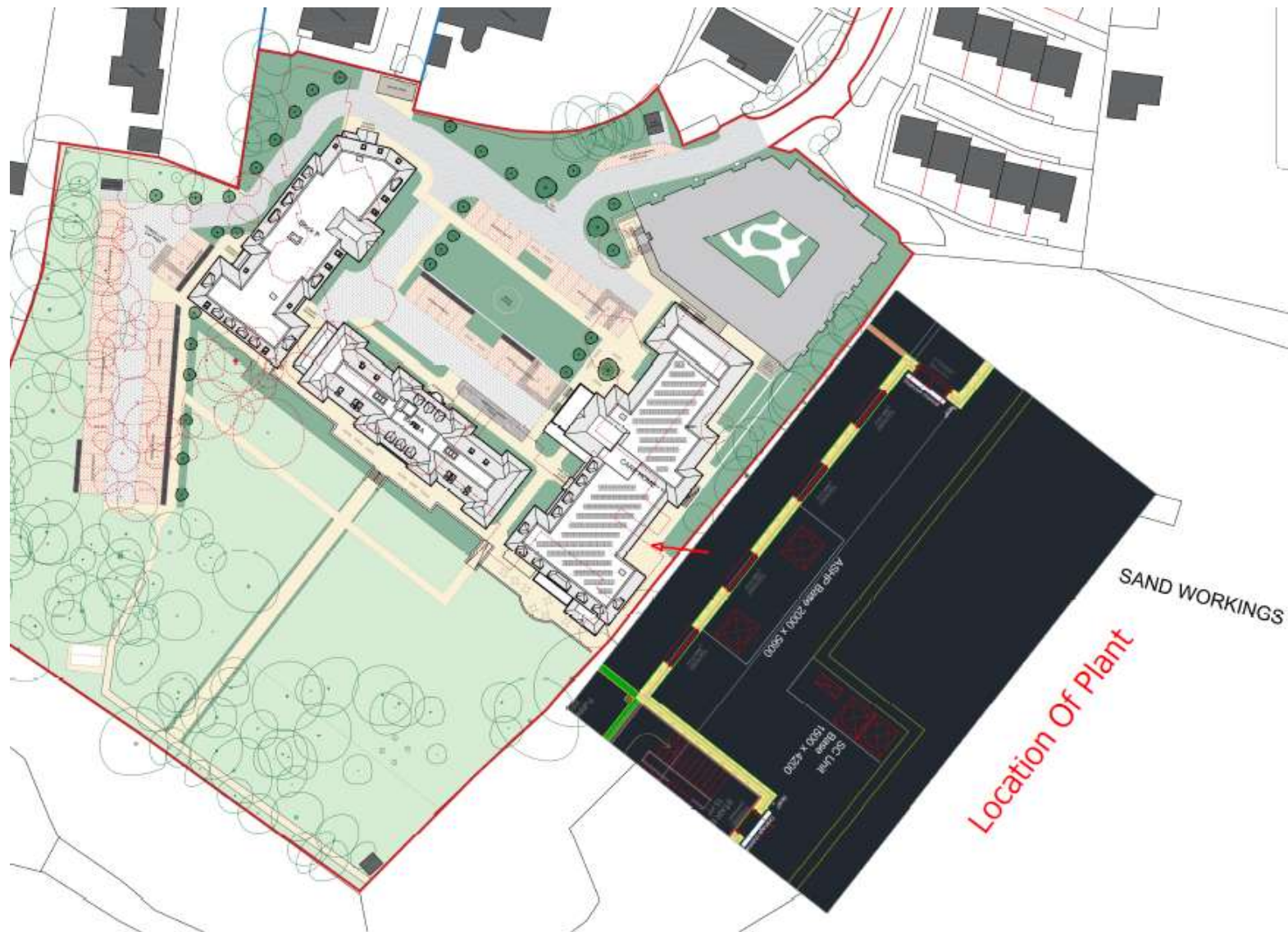


FIGURE 3 – MEASURED NOISE LEVELS AT POSITION P2



FIGURE 5 – PART PLAN INDICATING PLANT LOCATION



APPENDIX 1 – PLANT CALCULATIONS

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Kitchen Extract Fan										
Exhaust SWL	SWL	64	71	80	82	80	78	74	67	85
Atmospheric Side Silencer SIL	dB	4	7	12	20	21	22	16	14	
Directivity	dB	-8	-8	-8	-8	-8	-8	-8	-8	
Screening of Existing Blocks & Retaining Walls	dB	-12	-15	-18	-21	-24	-26	-29	-32	
Distance, 40m	dB	-32	-32	-32	-32	-32	-32	-32	-32	
Net SPL	dB	8	9	10	1	-5	-11	-12	-20	5
Suction SWL	dB	62	65	77	76	76	74	74	68	81
Room Side Silencer SIL	dB	4	7	12	20	21	22	16	14	
Room Correction	dB	8	8	8	8	8	8	8	8	
Net spl in kitcehn	dB	50	50	57	48	47	44	50	46	55
Louvre size and loss	dB	0	0	0	0	0	0	0	0	
directivity+	dB	-14	-14	-14	-14	-14	-14	-14	-14	
Screening of Existing Blocks & Retaining Walls	dB	-12	-15	-18	-21	-24	-26	-29	-32	
Distance, 40m	dB	-32	-32	-32	-32	-32	-32	-32	-32	
Net SPL	dB	-8	-11	-7	-19	-23	-29	-26	-33	-13
Mitsubishi FDC560KXZRE2 A/C units										
SWL	dB	88	78	78	81	76	73	71	65	82
No of Units, 2	dB	3	3	3	3	3	3	3	3	
Directivity	dB	-8	-8	-8	-8	-8	-8	-8	-8	
Screening of Existing Blocks & Retaining Walls	dB	-12	-15	-18	-21	-24	-26	-29	-32	
Distance, 40m	dB	-32	-32	-32	-32	-32	-32	-32	-32	
Net SPL	dB	39	26	23	23	15	9	4	-5	23
AW290 Heat Pumps										
SWL	dB	78	68	68	71	66	63	61	55	72
No of Units, 2	dB	3	3	3	3	3	3	3	3	
Directivity	dB	-8	-8	-8	-8	-8	-8	-8	-8	
Screening of Existing Blocks & Retaining Walls	dB	-12	-15	-18	-21	-24	-26	-29	-32	
Distance, 40m	dB	-32	-32	-32	-32	-32	-32	-32	-32	
Net SPL	dB	29	16	13	13	5	-1	-6	-15	13
Day Time	dB	39	27	24	24	16	11	7	4	24
Night Time (Heat Pumps on night Mode Setting)	dB	24	11	8	8	0	-6	-11	-20	8