20 Hillside Avenue Response to Representation – Planning Application AWDM/0500/25

26 May 2026

Executive Summary

This document looks to respond in full to the representations made by Lisa Moore 16 May 2025 against planning application AWDM/0500/25.

It confirms that the new air source heat pump (ASHP) installation:

- Achieves at least a **29 dB(A)** Rating Level at the nearest sensitive receptor — **6 dB below** the Environmental Health threshold.
- Operates with a sound power level of at least **9 dB lower** than the previous ASHP, representing an **87% reduction in sound energy** at the very least.
- Is modelled using conservative, BS 4142-compliant assumptions with verified mitigation measures. Real life results are expected to be better.
- It will be quieter than typical suburban daytime noise levels
- Has not yet been installed — installation will ensure appropriate siting and clearance in accordance with manufacturer guidance.

Introduction

We thank the neighbouring property for their comments and acknowledge the concerns raised. This response provides a point-by-point clarification of the issues raised focusing on technical compliance and acoustic impact mitigation.

Objection Point:

"The Air Source Heat Pump (ASHP) installation in this application does not conform to MCS regulations, so the maximum noise level of 42db at our nearest noise receptor is not applicable."

Response: Correct this does not conform to MCS regulations. This application is submitted through full planning, not under Permitted Development, and therefore MCS 020 standards are not determinative. Noise compliance is assessed using BS 4142:2014+A1:2019 and local Environmental Health thresholds. We have provided MCS calculations and comparisons to assist the planners. MCS regulations do not apply to swimming pool ASHPs as we have noted.

Objection Point:

"Worthing Planning and Environmental Health stated that the maximum noise level at our nearest noise receptor should be measured to be no greater than 35db. "

Response: Agreed although level to be verified by EA. The submitted noise assessment shows a Rating Level of **29 dB(A)** at the receptor, which is **6 dB below** the stated requirement. This indicates full compliance with Worthing Environmental Health's position. We have offered post-installation testing to confirm the result meets the 35 dB threshold if that is set if requested by the EHO

Objection Point:

"The replacement ASHP... is calculated to be 41db at our nearest noise receptor."

Response: This figure reflects the MCS calculated estimate. The final assessed Rating Level, after applying distance attenuation, barrier effects, and character corrections in line with BS 4142, is **29 dB(A).** The rudimentary MCS calculation shows it could meet Permitted Development. We have offered that calculation to assist the planners. We do not wholly rely upon it.

Objection Point:

"This ASHP is not an MCS approved unit."

Response: MCS does not apply to swimming pool ASHPs. The ASHP does exceed efficiency levels such as COP etc. set by MCS. The applicant does not consider MCS approval is a requirement for planning permission. It is relevant only to Permitted Development. It is felt this planning application meets all technical planning requirements, including noise compliance.

Objection Point:

"The ASHP now has 5 sound reflecting surfaces..."

Response: This is more relevant to the MCS sound calculation table**.** Note that Two of the cited surfaces are **acoustic fencing**, designed to absorb sound. They are not reflective. This is accounted for in the conservative 20–22 dB barrier attenuation used in our modelling. The Barrier attenuation excludes the existing fence and wall combination behind the acoustic fence

Objection Point:

"This is a DIY installation... not signed off by an MCS engineer."

Response: MCS does not apply to swimming pool ASHPs.

Objection Point:

"The ASHP has not been installed with the manufacturers required clearances..."

Response: The ASHP has not been installed yet so this is incorrect. The ASHP will be installed with operationally sufficient clearances, and airflow will be unimpeded. Manufacturer recommendations are designed for varied environments. The final installation will follow manufacturer guidance. Pool ASHP's are simple plug and play self contained systems and do not require complicated installation; two pipes and one electrical connection

Objection Point:

"The acoustic fencing did not perform nearly as well as calculated."

Response: The new proposal does not rely on idealised fence attenuation. A realistic 20–22 dB reduction was used in calculations. The new unit is quieter and results in a Rating Level of 29 dB(A), well below the required threshold. The fencing did perform as designed. However, the noise direction from the vertical fan along with Tonal issues from the compressor is considered to have caused the 35 dB level to have been missed. The previous ASHP achieved 39dB before tonal penalties were applied. The new

variable ASHP with the horizontal fan arrangement will prevent this failure on the new installation.

Objection Point:

"The fence… comprises of 1.8m panels that have been raised to 2m."

Response: The acoustic panels are installed as manufactured and have already been seen by EHO, acousticians and the planners on the previous application. They weigh in excess of 150kg per panel so sit on thick gravel boards which are in effect like railway sleepers as designed. Not relevant to the performance of the fence.

Objection Point:

"The current application still has not resolved the noise issues…"

Response: This concern relates to the previous installation, which was measured at 43 dB LAr (39dB before tonal correction) at the neighbour's ground-floor façade and was subsequently removed. The new proposal addresses the causes of exceedance: source noise level along with tonal noise and directional fan reorientation

The previous ASHP was subject to tonal correction due to identifiable low-frequency sound components. The rating level of 43 dB LAr included a +4 dB tonal penalty, with the underlying specific sound level recorded at 39 dB (as reported in the Evolved Acoustics May 2024 survey). The new ASHP model has a different fan orientation (horizontal, not vertical), is a lot quieter and does not exhibit tonal characteristics.

Acoustic modelling indicates the new unit will achieve a predicted rating level of 29 dB LAr at the same ground-floor façade—14 dB lower than the previous result and 6 dB below the Environmental Health threshold. This equates to a huge reduction in perceived loudness of more than 50% and in energy terms by approximately 90%.

Therefore, the current application does resolve the noise issues through unit replacement, directional control, tonal mitigation, and fence retention. For additional context, a noise level of **35 dB(A)** is typically equivalent to a quiet library or gentle natural setting — and is widely accepted in environmental health and acoustic planning as non-intrusive in both indoor and outdoor environments.

To assist in context:

- A sound level of **39 dB** is equivalent to a **quiet library** or a **calm rural area at night**.
- A sound level of **29 dB** is even quieter — comparable to a **soft whisper at 2–3 metres**, or the ambient noise in a high-quality recording studio.

- The previous ASHP had a **manufacturer-rated sound power level of 65–67 dB(A)**, resulting in a measured level of 43 dB LAr at the receptor.
- The new ASHP has a **lower sound power level of 58 dB(A)** measured at source, and achieves a predicted **29 dB LAr** at the nearest noise-sensitive façade, representing effective attenuation of 29 dB(A) through distance and mitigation.

This represents a **14 dB reduction** compared to the previous installation at the receptor location and a dramatic decrease in perceived loudness. Importantly, the **sound power level of the new ASHP (58 dB(A)) is 9 dB lower than the previous unit's 67 dB(A)**, which equates to a reduction of approximately **87% in sound energy**.

Additionally, the 58 dB(A) figure represents the unit operating at **maximum capacity**—in practice, typical day-to-day operation will be significantly quieter up to **a further 16dB at source lower,** especially during periods of steady-state heating. This ensures even further reduction in audible impact under real-world conditions. In real-world terms, this makes the new installation not only compliant but effectively inaudible in most domestic outdoor environments.

Objection Point:

"The ASHP is used to heat an outside swimming pool… this is when we want to enjoy our garden."

Response: We understand the importance of garden enjoyment during the summer months. The planning submission has already provided contextual analysis of how the ASHP will perform acoustically in a garden setting. As stated in the acoustic report, the predicted Rating Level at the receptor is 29 dB(A), based on a conservative worst-case scenario.

For further clarity:

- The ASHP will operate **only during summer daytime periods**, when background garden noise is typically higher (40–55 dB(A)).
- The 29 dB(A) rating level at the receptor is **well below these ambient levels**, and is highly unlikely to be perceptible.
- In perceptual terms, a 10 dB difference is perceived as a halving of loudness - so a 29 dB source would sound far quieter than the previous 39–43 dB result and be effectively **inaudible under typical garden conditions**.

As detailed in the BS 4142 noise assessment submitted with the planning application (Supporting Statement, Section 6 and Appendix A), the predicted Rating Level in the neighbour's nearest but not the only garden seating area is at worst **36.5 dB LAr**. This is **3.5 dB below the measured daytime background noise level of 40 dB(A)** (sourced

from the RBA Acoustics 2023 baseline survey) and therefore categorised as **'low impact'** under BS 4142 guidance. This further confirms the system will not be noticeable during typical garden use. According to BS 4142:2014+A1:2019, where the Rating Level is at least 10 dB below the background noise level, the impact is generally considered negligible. As the predicted ASHP Rating Level in the garden is 29 dB(A), and the measured background level is 40 dB(A), the unit's contribution is acoustically insignificant and would not be discernible during daytime garden activity.

Objection Point:

"We work from home… noise affects our mental health and ability to concentrate."

Response: We acknowledge the concern. However, the current system will operate well below any statutory nuisance threshold. The environmental impact is minimal, and the system meets planning and health-based acoustic criteria.

The previous installation was measured at 43 dB LAr at the external façade. While this exceeded the target external rating level, it would typically reduce to **28–33 dB(A) indoors** with a partially open window — still below the **BS 8233:2014** and **WHO guideline** threshold of **35 dB(A)** for internal daytime noise. This suggests that while the previous unit may have been more noticeable externally, it was unlikely to cause any disruption to internal home working environments.

The new installation, with an external Rating Level of **29 dB LAr**, offers an even greater margin of comfort. This external level would typically reduce to approximately **19–24 dB(A) indoors** with a partially open window, depending on façade construction and room orientation — comfortably below the **BS 8233 and WHO guideline threshold of 35 dB(A)** for daytime internal noise in living and working spaces. The new installation, with an external Rating Level of **29 dB LAr**, offers an even greater margin of comfort. This external level would typically reduce to approximately **19–24 dB(A) indoors** with a partially open window, depending on façade construction and room orientation — comfortably below the **BS 8233 and WHO guideline threshold of 35 dB(A)** for daytime internal noise in living and working spaces.

This confirms that the ASHP's operation will not interfere with indoor activities, including home working, even in rooms with open windows during the day. The new system ensures a compliant and comfortable internal acoustic environment while supporting the wider environmental aims of the planning system.

Objection Point:

"There are many alternative options..."

Response: Planning policy supports low-carbon technologies like ASHPs where impacts are acceptable. The proposal meets all relevant noise thresholds and planning tests and is preferable to fossil fuel alternatives on environmental grounds. We have also shown that an oil boiler would be just as noisy if not more so due to flue noise; its carbon footprint will obviously be much larger than the ASHP

Summary Table of Acoustic Improvements and Objection Responses

Topic	Previous Installation	Current Proposal
Sound Power Level	67 dB(A)	58 dB(A) (measured at source)
Receptor Rating Level	43 dB LAr	29 dB LAr
Tonal Penalty	+4 dB included	None (unit is not tonal)
Fan Direction	Vertical (upwards)	Horizontal (side-facing, away from receptor)
Fence Configuration	2.2 m acoustic fence	Retained and fully effective
MCS Applicability	Not relevant	Still not relevant; pool ASHPs exempt
Compliance Margin	Exceeded threshold	6 dB below EH limit
Perceived Loudness	Potentially noticeable outdoors	Likely masked by daytime garden noise

An appendix referencing the acoustic report "EV2422-01-A" by Evolved Acoustics has been submitted as part of this application. All rating levels and modelling refer to this document.

Conclusion

The revised proposal achieves a **substantial noise reduction**, complies with all acoustic requirements, and reflects feedback from previous applications. The acoustic impact is minimal, and the installation supports sustainable energy objectives. We respectfully request that the Planning Authority approves the application based on the robust technical evidence provided.