From: Rebekah Smith <rebekah.hincke@adur-worthing.gov.uk>
Sent: 23 June 2025 14:29:28 UTC+01:00
To: "Rebekah Hincke" <rebekah.hincke@adur-worthing.gov.uk>
Subject: Fwd: AWDM/0500/25: 20 Hillside Avenue

Rebekah Hincke
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---------- Forwarded message ---------
From: **Michael Lavender** <michael.lavender@adur-worthing.gov.uk>
Date: Mon, 23 Jun 2025 at 11:37
Subject: AWDM/0500/25: 20 Hillside Avenue
To: Rebekah Hincke <rebekah.hincke@adur-worthing.gov.uk>

Hi Rebekah,

I am sorry for the delay in responding, there was substantial case history to review in order to put the application into context.

Let me start by covering some of the points raised by the applicant and the neighbour.

MSC020

MSC020 was updated on the 20th March 2025 with a simplified assessment method, it also increased the size limit of the Air Source Heat Pump (ASHP) for dwelling houses up to 1.5m^3 and removed the 1m boundary rule, enabling heat pumps to be installed within 1m of the property boundary. The simplified calculation sets a noise limit of 37dBL$(A)_{eq\ 5\ mins}$ at the assessment positions ignoring the effect of the façade.

The proposed unit for this application is larger than 1.5m^3 so MCS020 does not apply in this case, which is acknowledged by the applicant. I have attached the new guidance for your information.

Maximum Noise Level of 35dB(A)

Environmental health set a façade noise level of 35dB(A) based on IOA/CIEH briefing note. (Attached to this e-mail). My understanding is that this figure was meant as a design criterion for the noise enclosure. This is reported in the RBA Acoustic report dated the 4th March 2024, which I have attached for easy reference. RBA Acoustics used 35dB(A) as the nighttime objective at the nearest bedroom façade.

Noise Enclosure

RBA Acoustics carried out a BS4142 assessment for the ASHP installed at the time and produced a Rating level of 41dB(A) at the rear façade of the neighbouring property. They calculated that with their acoustic enclosure in place the rating level would be reduced to 27dB(A), which matched the lowest nighttime background level taken during the survey. This suggests to me that they expected the noise enclosure to provide around 14dB(A) of sound reduction.

The subsequent acoustic assessment carried out by Evolved Acoustics, report dated 22nd May 2024, (Attached) measured the specific sound from the ASHP at 39dB(A), but this measurement was taken at a nearer façade and not at the first floor bedroom façade the original acoustic assessment was assessed at. Furthermore, the noise the ASHP was making at the time of this measurement was most likely different to the manufacturers figures RBA Acoustics used in the initial assessment. I say this because the Council's own noise measurements changed over time from the first and second recordings. The latter recordings detected a low frequency hum at 50Hz that was not present when we first made noise recordings. There are too many variables for me to accurately assess the effectiveness of the enclosure from the existing information, i.e I cannot say with any certainty whether the acoustic enclosure met the initial design brief.

Noise Impact Report

The Noise Impact Report for this application has been carried out by the applicant. In his report and BS4142 calculations he is suggesting the enclosure will provide 20dB(A) sound reduction in noise levels, way above what the RBA Acoustic report suggested. I believe this is because the applicant has used the sound reduction index for the materials used in the enclosure to assess the barriers effectiveness. This is wrong.

Noise barriers are designed to interrupt the direct line of sight between a sound source (ASHP) and a receiver (The neighbouring house). When sound waves encounter an obstacle, like a noise barrier, they bend or diffract around the edges of the barrier. This diffraction is a key mechanism by which sound gets around the barrier and reaches the receiver.
By blocking the direct path, the barrier forces sound to travel further, either over the top or around the sides of the barrier, before reaching the receiver. This longer path length results in

attenuation, a reduction of the sound. Regardless of how dense you make the barrier, the pathway will remain the same so there is a limit to how much sound reduction a barrier will provide regardless of how high the sound reduction index is. The Noise Impact Report provides no barrier calculations to justify using the 20dB(A) reduction.

Conclusion

Regrettably, we cannot rely on the applicants calculations and for this reason I would request an acoustic report from a suitably qualified acoustician so that we can make an informed decision. Suitably qualified means someone who has met the education criteria to be a member of the Institute of Acoustics or a member of the Association of Noise Consultants.

Kind Regards

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