

Noise Impact Assessment Report for Planning Application

Planning application number: 250036

Site address: 44 Woodward Close, Winnersh, Berks RG41 5NW

1. Introduction

This report has been prepared to assess the noise impact of the proposed installation of an air source heat pump (ASHP) and an air conditioning unit (ACU) at a residential property located within an urban housing estate. The assessment follows BS 4142:2014+A1:2019 guidance for rating and assessing industrial and commercial sound, comparing the operational noise levels of the units with background noise at the nearest receptors.

This document is intended for submission as part of the planning application and provides evidence that the proposed installations will not cause significant noise disturbance to neighbouring properties.

2. Site Description

The proposed installation site is in an urban residential estate with the following characteristics:

- Houses on both sides are approximately 3 m away from the subject property.
- House to the rear is approximately 15 m away.
- Front garden and footpath, followed by a road.
- Electric railway line at 75 m.
- Motorway at 250 m.
- 6-foot close-board fences enclose the rear and both sides of the property, providing additional noise attenuation.

3. Equipment Details & Manufacturer Noise Data

3.1 Air Source Heat Pump (ASHP)

Model: Mitsubishi Ecodan PUZ-WM60VAA(-BS)

- Sound Pressure Level at 1m: 45 dBA
- Sound Power Level: 58 dBA (BS EN12102 tested)

3.2 Air Conditioning Unit (ACU)

Model: Fujitsu AOYG36KBTA5

- Sound Pressure Level - Cooling (High): 52 dBA
- Sound Pressure Level - Heating (High): 55 dBA

4. Noise Propagation & Attenuation

Noise levels decrease with distance due to geometric spreading and environmental screening. The expected attenuation for both units is as follows:

Distance	ASHP Noise Level (dBA)	ACU Noise Level (dBA)
1 m	45 dBA	52-55 dBA
3 m	33.5 dBA	40.5-43.5 dBA
5 m	30 dBA	36.5-39.5 dBA
15 m	24 dBA	28.5-31.5 dBA

4.1 Barrier & Screening Effects

- The 6-foot close-board fences around the property can reduce noise levels by 5-10 dB, further lowering the perceived noise at neighbouring properties.
- The housing estate environment already has existing background noise from traffic and rail activity, which will further mask the noise from the ASHP and ACU.

5. Background Noise & Compliance with BS 4142:2014+A1:2019

Typical background noise levels in urban residential areas are:

- Nighttime: 35-45 dBA
- Daytime: 45-55 dBA

The operational noise levels at 3-5 m after attenuation are lower than the background noise levels, meaning the likelihood of complaints is low.

BS 4142 Guidance:

- +10 dB or more above background noise → Significant adverse impact.
- +5 dB above background → Adverse impact.
- Equal to or below background → Low impact.

Since both units operate at or below background noise levels at receptor distances, they are unlikely to cause a significant impact.

6. Mitigation Measures (if required)

If additional mitigation is necessary, the following options can be considered:

- Acoustic enclosure around the units to provide 5-10 dB further noise reduction.
- Relocation of the units further from windows or sensitive areas.
- Anti-vibration mounts to prevent structure-borne noise transmission.

7. Conclusion & Planning Compliance

Based on the assessment, the Mitsubishi Ecodan PUZ-WM60VAA(-BS) air source heat pump and Fujitsu AOYG36KBTA5 air conditioning unit are not expected to cause significant noise disturbance to neighbouring properties.

- Noise propagation calculations confirm that operational noise levels at 3-5 m are below typical background levels.
- 6-foot close-board fencing provides additional 5-10 dB attenuation, further reducing any potential noise impact.
- Compliance with BS 4142:2014+A1:2019 suggests that noise emissions are unlikely to result in complaints.

As such, the proposed installation is expected to meet UK planning requirements

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For Submission with Planning Application