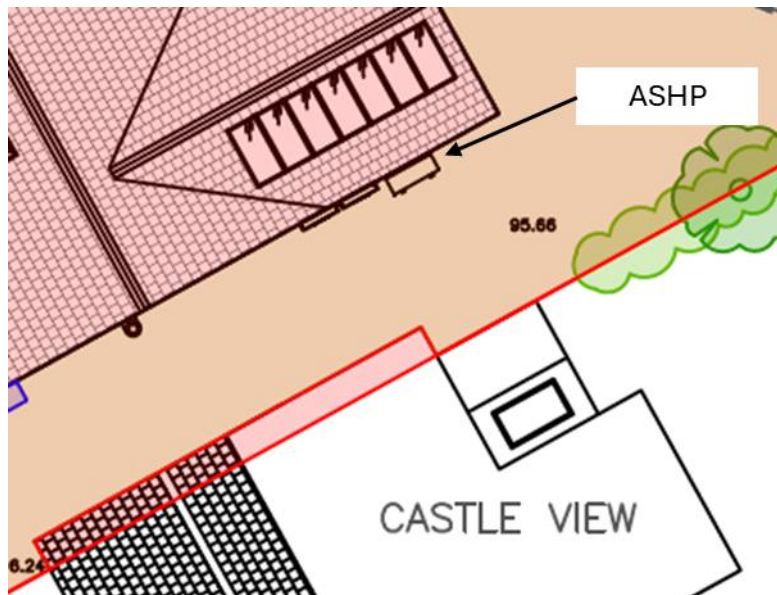


Air Source Heat Pump Noise Assessment (MCS 020(a))

Selected Unit - Mitsubishi Ecodan R290, 8.5kW. Manufacturer details provided in supporting document: *NP263AA The Grove MEUK_R290_8.5kW_10kW_12kW_Product_Information_Sheet*

A-weighted Sound Power Level (L_w): 54 dB(A)



Nearest window of a habitable room – Back bedroom of Castle View.

Distance from unit (r): 7.38 metres

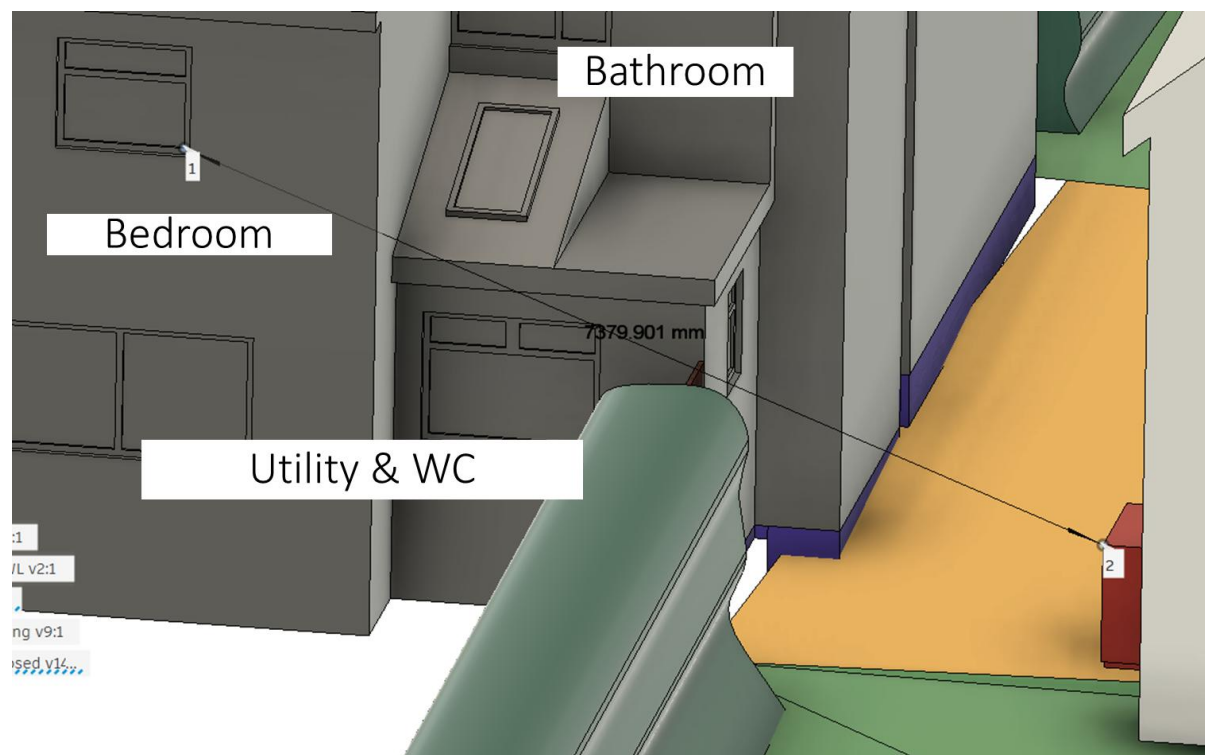


Figure 1 - Distance to window of nearest habitable room 7.38m

The noise assessment has been carried out in accordance with MCS 020(a).

The sound pressure level at the assessment position is calculated using:

$$L_p = L_w + 10 \log_{10}(Q / (4\pi r^2)) - AB$$

Where:

- L_p = Sound pressure level at receptor (dB(A))
- L_w = Sound power level (dB(A))
- Q = Directivity factor (4 for unit adjacent to one wall and ground)
- r = Distance to receptor (m)
- AB = Barrier attenuation (zero)

Description	Value
Heat Pump Sound Power Level (dB)	54
Directivity	4
Distance to neighbours habitable window (m)	7.38
Barrier between heat pump and neighbours window	No barrier
Calculated Sound (dB)	31.7

Conclusion

The proposed air source heat pump installation achieves a predicted sound pressure level of 31.7 dB(A) at the nearest noise-sensitive receptor.

This level is considered low and unlikely to result in adverse noise impact on neighbouring occupiers. The assessment has been undertaken in accordance with MCS 020(a) methodology, which is widely recognised as an appropriate standard for evaluating domestic heat pump noise.

On this basis, the proposed installation is acceptable in terms of noise impact and is not expected to give rise to any significant adverse effects on residential amenity.