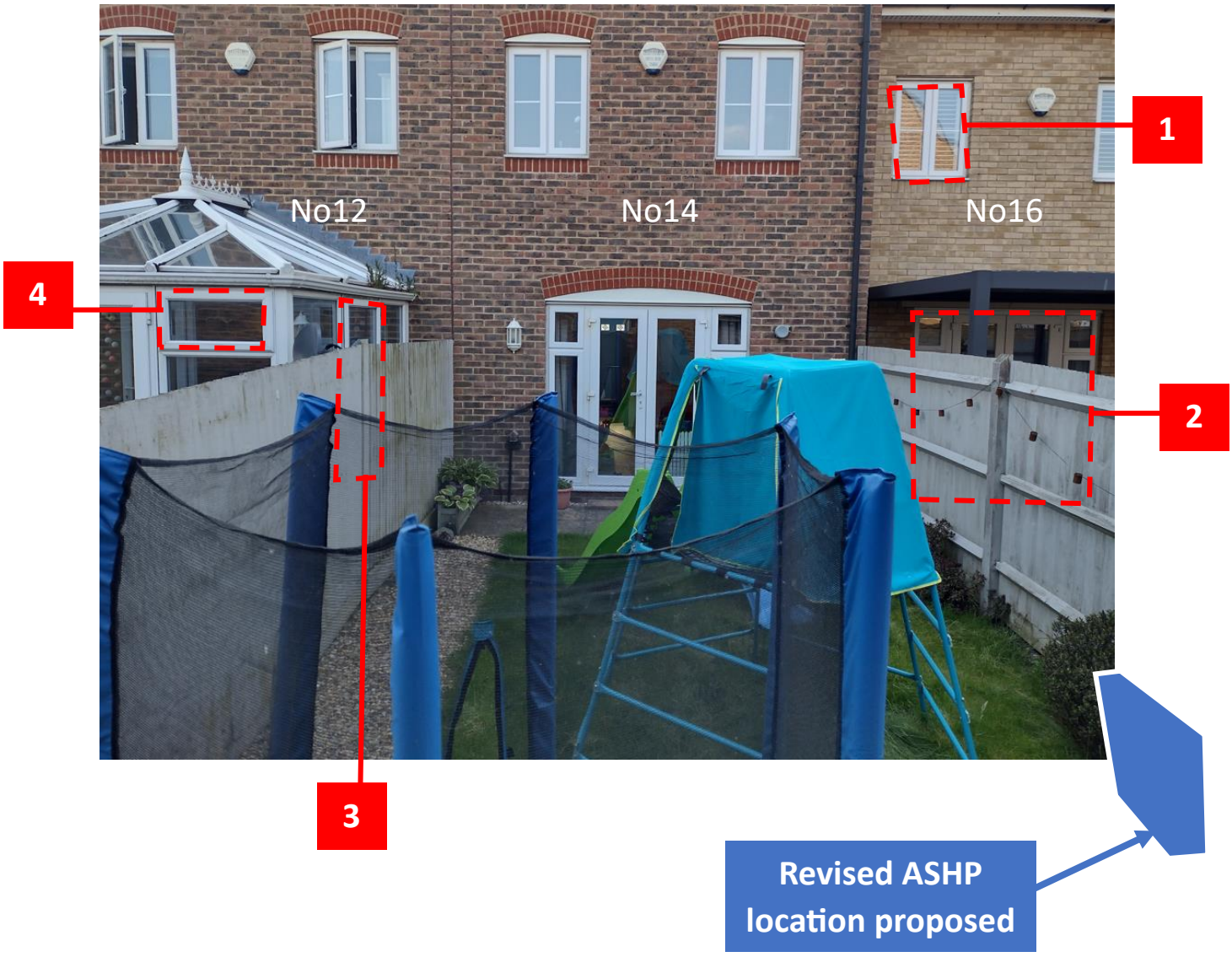
Supplementary document 3 of 3 for planning application:

MCS 020 Sound assessment for revised ASHP location proposed: ASHP at end of garden adjacent fence to No16 and garage wall.

14 Sea Spray Avenue, Shoreham by sea, BN43 5PR
April 2024

Photo showing assessment positions ref. 1-4 are shown below.



Only assessment position 4 is considered in this document for the revised ASHP location because it is the worst-case assessment position for the Daikin heat pump at this new location.

Assessment position 4:

The assessment position is one metre external to centre point of conservatory window at No12 Sea Spray Avenue. The conservatory window is on the ground floor on the rear elevation of the conservatory.

Step	Instructions	MCS contractor results/notes
1	From manufacturer's data, obtain the A-weighted STEP 1 RESULT= sound power level of the heat pump. See 'Note 1: Sound power level'. The highest sound power level specified should be used (the power in "low noise mode" should not be used). *Example.· Manufacturer's data states the sound power level of the heat pump is 55 dB(A)*	**58dB** Daikin heat pump datasheet states sound power level of the heat pump is 58dB.
2	Use 'Note 2: Sound pressure level' and 'Note 3: STEP 2 RESULT= Determination of directivity' below to establish the directivity 'Q' of the heat pump noise. *Example. The heat pump is to be installed on the ground and against a single wall hence the directivity (Q) of the heat pump noise is Q4*	**Q=8** Heat pump is to be installed on the ground against a fence and the rear wall of the garage.
3	Measure the distance from the heat pump to the STEP 3 RESULT= assessment position in metres. *Example. Distance between heat pump and assessment position is 4 metres*	**5m** 5 to 6m from ASHP. Rounded down to 5m.
4	Use table in 'Note 4: dB distance reduction' below to STEP 4 RESULT= obtain a dB reduction. *Example. 4metres@ Q4 = -17 db.*	**-16dB** 5m @ Q8.
5	Establish whether there is a solid barrier between the STEP 5 RESULT= heat pump and the assessment position using 'Note 5: Barriers between the heat pump and the assessment position' and note any dB reduction. *Example. There is a brick wall between the heat pump and the assessment position Moving less than 25cm enables the assessment position to be seen dB reduction = -5 dB*	**0dB** The heat pump can be seen from the assessment position.
6	Calculate the sound pressure level (see 'Note 2: STEP 6 RESULT= Sound pressure level') from the heat pump at the assessment position using the following calculation: (STEP 1) + (STEP 4) + (STEP 5) *Example (55) + (-17) + (-5)=55 -17- 5 =33 dB(A) Lp*	**42dB** 58+(-)16+0=42.
7	Background noise level. For the purposes of the STEP 7 RESULT= MCS Planning Standard for air source heat pumps 40 dB(A) the background noise level is assumed to be 40 dB(A) Lp. For information see 'Note 6: MCS Planning Standard for air source heat pumps background noise level'. *Example. Background noise level is 40 dB(A)*	**40dB**
8	Determine the difference between STEP 7 STEP 8 RESULT= background noise level and the heat pump noise level using the following calculation: (STEP 7) - (STEP 6) *Example: 40dB(A) (background) -33dB(A) (heat pump) = 7dB(A)*	**-2dB** 40dB (background) – 42dB (heat pump) = -2dB.
9	Using the table in 'Note 7: Decibel correction' obtain an adjustment figure and then add this to whichever is the higher dB figure from STEP 6 and STEP 7. Round this number up to the nearest whole number. *Example: Adjustment figure is 0.8dB and the higher figure is 40dB(A).* *40 = 0.8 = 40.8dB(A)* *Rounded up t0 41dB(A)* *Final result at this assessment position is 41dB(A).*	**45dB** Adjustment figure is 2.1dB and the higher figure is 42dB, so 42+2.1 = 44.1, rounded up is 45dB.
10	Is the FINAL RESULT in STEP 9 equal to or lower than the permitted development noise limit of 42.0 dB(A)? If YES - the air source heat pump will comply with the permitted development noise limit for this assessment position and may be permitted development (subject to the compliance with other permitted development limitations/conditions and parts of this standard). NOTE - Other assessment positions may also need to be tested. If NO - the air source heat pump will not be permitted development. This installation may still go ahead if planning permission is granted by the local planning authority.	**No, so planning permission is required.** 45dB is not equal to or lower than 42dB.