EDWARDS RENSEN ARCHITECTS

CERTIFICATE OF LAWFULNESS APPLICATION FOR **ASHP INSTALLATION**

3 BROOKFIELD PARK, NW5 1ES
21.08.2024

APPENDIX A – PROOF OF COMPLIANCE CALCUATIONS
P.T.O.

Date calculation undertaken: *21 August 2024*

Note: for the purposes of this calculation procedure:

- **Assessment position** means a position one metre external to the centre point of any door or window to a habitable room of a neighbouring property as measured perpendicular to the plane of the door or window.
- **Habitable room** means a room other than a bathroom, shower room, water closet or kitchen.
- **Neighbouring property.** Means any building used for any of the purposes of Class C of the Town and Country Planning (Use Classes) Order 1987 (as amended) (includes dwellings, houses, hotels, residential institutions and houses in multiple occupation). In instances where the air source heat pump would be installed on block of flats, neighbouring property includes flats within the same block of flats (excluding the flat of the "owner(s)" of the air source heat pump.

Description of assessment position tested

(This must be detailed enough to allow for identification, including property address and exact location of window / door opening and floor level. It is recommended that a map, sketch, photo or other record be attached to these workings.)

This calculation is undertaken to assess the proposed sound pressure impact of the proposed ASHP installation at 3 Brookfield Park on neighbouring properties

We assessed the nearest window of 5 Brookfield Park (NW1) which is screened by the existing solid fence. We also assessed the next nearest window of the same house (NW2) because it is unscreened. Both complied with this standards. We also assessed the nearest window of 1 Brookfield Park (NW3), which is unscreened. This window also complied. All other windows are further away from the ASHP.

This calculation shows that the resulting sound pressure level at these three windows is lower then the upper limit of 42dB, as set by the MCS standard for the chosen type and location of ASHP.

This proves that the proposed ASHP installation complies with this standards.

Example: The assessment position is the first floor bedroom window of 1 Oak Street and it is 4 metres away from the location of the proposed air source heat pump.

Step	Instructions	MCS contractor results / notes
1.	**From manufacturer's data, obtain the A-weighted 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).*	STEP 1 RESULT = *60dBA*
2.	**Use 'Note 2: Sound pressure level' and 'Note 3: 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.*	STEP 2 RESULT = *Q=2*
3.	**Measure the distance from the heat pump to the assessment position in metres.** *Example: Distance between heat pump and assessment position is 4 metres.*	STEP 3 RESULT = *NW 1: 4.9m* *NW 2: 8.7m* *NW3: 10.8m*
4.	**Use table in 'Note 4: dB distance reduction' below to obtain a dB reduction.** *Example: 4metres @ Q4 = -17 db.*	STEP 4 RESULT = *NW1: -20dB* *NW2: -26dB* *NW3: -28dB*

5.	**Establish whether there is a solid barrier between the 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.*	STEP 5 RESULT = *NW1: -5dB* *NW2: 0* *NW3: 0*
6.	**Calculate the sound pressure level (see 'Note 2: 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*	STEP 6 RESULT = NW1: 35dB NW2: 34dB NW3: 32dB
7.	**Background noise level. For the purposes of the MCS Planning Standard for air source heat pumps 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).*	STEP 7 RESULT = 40 dB(A)
8.	**Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation:** (STEP 7) – (STEP 6)	STEP 8 RESULT = NW1: 5dB NW2: 6dB NW3: 8dB

	Example: 40 dB(A) (background) – 33 dB(A) (heat pump) = 7dB(A).	
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 0.8 dB and the higher figure is 40 dB(A).* *40 + 0.8 = 40.8 dB(A).* *Rounded up to 41 dB(A)* *Final result at this assessment position is 41 dB(A).*	FINAL RESULT= NW1 Decibel correction: 1.2 40 + 1.2 = 41.2 Rounded: 41dB NW2 Decibel correction: 1 40 + 1 = 41dB NW3 Decibel correction: 0.8 40 + 0.8 = 40.8 Rounded = 41 dB
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 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.** *Example: 41 dB(A) is equal to or lower than 42.0 dB(A).*	Final result is equal to or lower than 42.0 dB(A) NW1: Yes NW2: Yes NW3: Yes