ACOUSTIC ENCLOSURES

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28th May 2020.

Fabric-Space Architects.

For the attention of Mr Aurimas Bartkus

Project: 11, Briardale Gardens.

Acoustic Assessment of Repositioning of AC Condenser.

General:

Initially the condenser was to be installed at high level on the wall between the dwellings. This presented a number of problems regarding the control of noise, the size and weight of the enclosure required, the difficulty for maintenance access and the general aesthetic appearance.

In order to circumvent these problems, it was suggested that the condenser be repositioned at low level within the garden area. The condenser has now been designed within the garden outhouse. Aesthetically all that is seen now is the air inlet and outlet grilles. Maintenance is now possible. Acoustically the condenser is now 10m away from the above dwelling, and also 10m distant from any other dwellings. I have detailed below the recalculations based on the new position.

Calculations:

Condenser.....Daikin RXYSCQ4TV1

Sound Pressure Level Spectrum used as published by Daikin on machine data sheet.

Frequency	63	125	250	500	1k	2k	4k	8k
Unweighted m/c spectrum "A" Weighting	49 -26	53 -16	49 -9	52 -3	47 0	40 +1	33 +1	25 -1
"A" Weighted Spectrum	23	37	40	49	47	41	34	24
Distance correction for 10m	-20	-20	-20	-20	-20	-20	-20	-20
Level at Nearest Receptor	3	17	20	29	27	21	14	4

In order to meet the target level it is proposed to fit 300mm deep standard acoustic louvres with the following performance.

300mm Louvre Mitigation	-6	-6	-9	-13	-20	-20	-10	-15
Spectrum at NSR	-	11	11	16	7	1	4	-

Single figure representation at NSR......19dB(A)

In order to check that the condenser would not impact on the adjacent garden a calculation was made removing the distance correction.

The generally accepted level set by the WHO for maximum noise levels in gardens is 55dB(A). It is therefore apparent that the above installation will not impact on any of the neighbouring gardens.

I hope this meets your requirements for the moment.

Yours faithfully,

Jim Shaw. C.Eng. MIMech.E MIOA.