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ACCOUSTIC REPORT
SNAPPY SNAPS 189 Finchley Road
London NW3 6LB

SCOPE OF REPORT

To assess the sound levels arising from the relocation of air conditioning condensing units with regard to the nearest residential property.

PLANT INVOLVED

Two small Fujitsu Condensing Units currently located within the premises of 189 Finchley Road which discharge at pavement level.

LOCATION INVOLVED

The Plant is to be relocated to the rear of the premises and specifically to the first floor walkway, which runs the rear of Nos 179-189 Finchley Road. The positions of the Plant are as shown on the marked up copy of Haddon Few Montuschi's drawing No 111 of 14.12.05.

SPECIAL FACTORS APPLYING TO LOCATION

Attention is expressly drawn to the existence, along the walkway concerned, of 8 number Marstair CU280 Condensing Units. Attached photograph shows the dispositions of these Units.

The proposed relocated units from Snappy Snaps will replace two of these Marstair Condensing Units.

It is understood that Planning Approval already applies to these existing Marstair systems, which were installed some 10 years ago to serve the Offices, which take all the floors above the ground level.

It is also understood that the Landlord/Tenants of these Offices will, at some stage in the near future, be replacing these Marstair Systems, which will be of far greater capacity and size.

The relocation of these Snappy Snaps Condensing Units is with the full knowledge and approval of the Landlord and tenant above, subject to local authority planning approval.

RESIDENTIAL PREMISES

The closest residential property is on the topmost floor of No 179-189 Finchley Road and the nearest noise sensitive window would be above the first floor walkway a distance estimated in

excess of 10 meters. The attached photograph shows the top floor rear windows. There are no properties with facing windows opposite the area concerned.

SOUND LEVELS

The Plant to be relocated has a Sound level of: -

53dBA

It has an Octave Band analysis of: -

Hertz	63	125	250	500	1K	2K	4K
dB	64	60	52	51	47	43	38

The figures are sound pressure levels at the fan discharge (ref 0.0002 micro bars) as recorded by the Makers and published by them, in accord with standards including AR1 and Eurovent standards.

EXISTING SOUND LEVELS

The existing Marstair Condensing Units, according to makers published data, have a sound level of 48dBA measured at 3 meters from the fan casing. This equates to a sound pressure of 59dBA at a distance of 1 meter.

The actual sound levels were monitored over a period of two days in mid October of 2006 during the early afternoon. Weather conditions were mild with above average temperatures. Using a Briel and Kjoer sound meter overall sound levels of 62-66dBA were recorded along the walkway in the position indicated on drawing no 111. Background levels were recorded of 55dBA.

PREDICTED SOUND LEVELS

The predicted sound level 1-meter above the existing Marstair Condensing Units, for which approval applies, is 63dBA. This is arrived at by the logarithmic addition of 4 no Marstair systems spaced 200mm apart (each unit 850mm long). The estimated sound level one meter from the nearest residential window will therefore be: -

32dBA (63-31)

The predicted sound level at such a window with two of the Marstair Condensing Units removed and in their stead the Snappy Snaps relocated Condensing Units would be: -

29dBA (60dBA-31)

If the proposed relocated units were to stand alone then the predicted sound level at the residents window would be: -

24dBA (55dBA-31)

If the future removal of the Marstair systems and replacement with four larger Multi systems

Condensing Units takes place then the predicted sound level, based on a typical Makers published figure of 58dBA, would be: -

33dBA (61dBA-28)

The combination of Multi systems with the two small units relocated from Snappy Snaps would not alter this predicted level because of their much lower height, lower sound level and because of their distance away.

CONCLUSIONS

The existing Marstair Condensing Units arrayed across the rear first floor walkway gave rise to higher sound level than that predicted by calculation. This was probably due to the reverberant effect created by machines of characteristically high low frequency noise being entirely surrounded by the building and outer parapet wall. Also the wear and tear of 10 years use will have reduced performance and the resulting hotter compressor running temperatures would inevitably have added decibels.

The higher fan on the Snappy Snap system will mean no such increment. On the contrary being the latest Inverter technology time will be spent at lower modulating speeds instead of stop/starts at full speed. Accordingly noise levels should be equal or better than those predicted.

A difference of –3dBA would subjectively be half the noise level to the ear. Therefore, obviously Plant, which is 6dBA less than the existing, inevitably must be a significant improvement. Nevertheless, to make no contribution at all to the overall sound level there must be more than 9dBA difference. The calculations show that irrespective of whether the proposal Plant is alongside the existing Authority Approval Plant, the Plant which may replace the existing, or it just stands by itself, there would be absolutely no discernable differences, other than an improvement, at the nearest residential window. This is because at that point the resultant generated level would be more than 9dBA below that of the background.

The Plant will only be operated during business hours, namely 8.30am to 6pm, to enable the processes that are undertaken in Snappy Snaps to be completed. It, therefore, would not be operated during times when the background might fall to within 9dBA of that generated by the Plant.

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