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Dear Nas,

UCL FOSTER COURT – ACOUSTICS REVIEW OF PLANT NOISE

As requested, we are writing with our confirmation that the noise due to the new fan extract and condenser unit proposed for UCL Foster Court has been predicted to be sufficiently low as to not create a nuisance for the nearby residents.

We understand the new equipment is to be installed in the roof of the building, to the eastern side, in the site of the defunct "bell tower". The closest residential buildings are situated approximately 70m away from the plant location under consideration: some houses are present on Gordon Square, and on Byng Place, next to the Church of Christ the King. We understand that the building which previously was the Quaker international centre now houses student accommodation. We have therefore considered the acoustic noise emission of the proposed plant in relation to these residential locations.

A planning condition typically used by London Borough of Camden is used as guidance:

"In practice, design measures should be taken to ensure that noise levels predicted at a point one metre external to sensitive facades are at least 5 dB(A) less than the existing background measurement (LA90) when the equipment is in operation.

Where it is anticipated that equipment will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses in the noise (bangs, clicks, clatters, thumps), special attention should be given to reducing the noise levels from plant and equipment at any sensitive façade to at least 10 dB(A) below the LA90 level".

This is consistent with the guidance from British Standard 4142: if the noise experienced is 5dB(A) under the background noise level, it is not likely there will be complaints.

To evaluate the relevant existing background noise levels, we considered a noise survey which was made previously around the same location (Malet Place/Byng Place), around mid-day on the 27th of April 2006. This measurement was also compared with 24-hour surveys conducted in the neighbourhood for other UCL buildings. It is considered unlikely that the noise environment would have changed significantly since the measurement. On the pavement next to Byng Place, the ambient noise level was generally dominated by road traffic with a typical background noise level of L_{A90} 64 dB. In the access way to the Church of Christ the King, the noise level reduced typically to L_{A90} 56 dB, which is considered representative of local quieter conditions likely to be experienced by some local residents during daytime.

The plant items mentioned above are designed to serve some the UCL building during normal office hours and therefore only the daytime noise impact needs to be considered. Following the guidance outlined above, it is desirable that the plant installed does not create noise levels of more than 51dB(A) at 1m from the residential façades considered.

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The specification for the fan extract system considered has been provided by Flaktwoods for the 71JM/20/4/6/24 Aerofoil fan, with exhaust sound power levels data, as well as the attenuation of the silencer unit considered. The specification for the condenser unit considered, a REYQ16M VRV Heat recovery unit, was given by Daikin.

Calculations were undertaken to determine the resulting noise level at the nearest affected residential façade, due to the exhaust from the fan extract system, and the condenser unit. The predicted worst case noise level at the nearest residence is 40 dB(A), which is below the environmental noise criterion and therefore can be deemed to be unlikely to create a noise nuisance.

Yours sincerely,
For and on behalf of
HOARE LEA ACOUSTICS



MATTHEW CAND
ENGINEER