SANDY BROWN

Consultants in Acoustics, Noise & Vibration

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Centre Point

Revised plant arrangement CPW block

An application has been submitted for a non-material amendment to the planning application for the Centre Point project. The changes relate to roof top plant located on the new residential block, White Lion House, located between Earnshaw Street and St Giles High Street.

Sandy Brown have reviewed the noise from the revised rooftop plant with regard to the impact on the adjacent noise sensitive receivers, which are considered to be the Mathilda Apartments on the opposite side of Earnshaw Street.

The revisions to the roof top plant can be summarised as:

- omission of tumble dryer extract fan
- relocation and reselection of Lobby Smoke extract fans (emergency use only)
- reselection of laundry extract fan.

Attenuators are to be provided to all fans.

Planning condition 20 for the development relates to the noise from plant and states:

Noise levels at a point 1 metre external to sensitive facades shall be at least 5dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 10dB(A) below the LA90, expressed in dB(A).

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Based on the previous noise survey undertaken at the site and Camden's requirement for all plant not to exceed a level 5 dB below the background noise level 1 m from the facade of the nearest noise sensitive receiver the maximum plant noise levels are given in Table 1. The plant noise limit applies to the total noise from all plant associated with the development. The levels are given as free-field sound pressure levels

Table 1 Maximum cumulative noise egress levels from new plant measured/calculated at 1m from nearest receiver windows

Time	Maximum cumulative noise egress level from plant
Daytime (07:00 to 23:00)	$L_{Aeq,15min}$ 49 dB
Night-time (23:00 to 07:00)	$L_{Aeq,15min}$ 48 dB

The noise data for the revised fan selections as well as the rooftop air handling unit (AHU) are given in Table 2.

Table 2 Fan and air handling unit induct sound power levels (dB re 10^{-12} W)

	Octave-band centre frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Lobby smoke extract fans (2 off.)	92	91	85	85	86	83	78	75
Laundry Extract fan	78	74	73	74	73	67	63	57
CPW AHU	68	67	62	71	62	50	44	34

The insertion losses for the attenuators associated with the above fans are given in Table 3.

Table 3 Attenuator insertion losses (dB)

	Octave-band centre frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Lobby smoke extract fans (2 off.)	7	10	18	37	54	36	23	14
Laundry Extract fan	3	5	12	22	20	15	14	11
CPW AHU	10	15	23	32	38	36	29	22

The noise levels generated as a result of the operation of the above plant have been determined 1 m from the facade of the Mathilda Apartments accounting for the specified attenuators, duct losses and the hemispherical spreading of sound power. The predicted noise levels from the proposed fans and attenuators are compatible with achieving the overall plant noise limits for the development, with allowance for contribution from other plant items.

The noise levels within the residential dwellings in White Lion House have been designed not to exceed internal noise levels of $L_{Aeq,16hour}$ 35 dB and $L_{Aeq,8hour}$ 30 dB in living rooms and bedrooms, respectively, as a result of external noise ingress during a normal ventilation condition. This is achieved through the specification of the facade construction and the use of mechanical ventilation to control noise ingress via ventilation openings. The amendment to the plant arrangement will not increase the noise levels within the residences.