

Point A Hotel, King's Cross

Statement on Acoustic Implications of Relocating Servicing Plant

prepared for:

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Control of Building Services Noise

Introduction

The Point A Hotel was created in 2011 following the refurbishment and extension of the Iron and Steel Trades Confederation building which lies at the junction of Grays Inn Road and Swinton Street, both of which carry very heavy traffic flows.

The hotel rooms fall into two distinct groups; those facing onto the two main roads and those facing onto a more internal courtyard/lightwell space shared largely with the premises of the Royal National Throat Nose and Ear Hospital. The differing noise climates of those two environments lead to differing patterns of noise exposure affecting the hotel bedrooms.

This report is concerned with those bedrooms which face into the courtyard/lightwell space shared with the hospital. The functions of the hospital are supported by a number of building services installations which emit significant amounts of noise to the courtyard/lightwell. Some noisy mechanical plant machinery is mounted externally to the buildings and there are also intake and discharge terminals which emit noise at various locations. It is believed that the hospital operates effectively under “Crown Immunity” which prevents local authorities from imposing the noise control measures which would normally be applied.

The hotel has building services installations installed externally within the courtyard/lightwell, comprising principally inverter-driven heat pumps and air handling plant. Within the period that the hotel has been operating the configuration of the plant within the space has been modified several times to adapt to changing circumstances and to incorporate newer technology in the interests of environmental protection, which includes noise reduction. The acoustic design and layout of the plant within the lightwell has in each configuration been predicated on the principle that the noise output of the hotel plant should be inaudible at a distance of two metres from any guest bedroom window.

It must be stressed in the context of this report that the largely unvarying noise output of the hospital plant places an absolute lower limit on the amount of external noise exposure affecting hotel bedrooms. There is no more that the hotel management can do to reduce that noise exposure. That principle is of fundamental importance in the discussion which follows.

Control of Hotel Noise Emissions Affecting Guest Bedrooms

This issue concerns only the hotel bedrooms facing into the enclosed lightwell/courtyard. Bedrooms facing onto Swinton Street and Grays Inn Road are not affected in any way by hotel services, the dominant noise source is traffic noise.

The configuration of hotel rooms facing into the lightwell/courtyard has altered over the period of occupancy as a consequence of approved redevelopment schemes. In the original services configuration some items of external plant were located on rooftops lying at relatively low levels. The configuration of the services was designed acoustically to ensure that the noise output of the plant would be inaudible at 2m from any guest bedroom window. The acoustic criterion used in the calculations was that the sound level should be at least 5dB below the background level produced by the hospital services.

Subsequent phases of development predicated additional modifications to the services installation. An important aspect of the changes was that each change moved some components of the servicing system to higher levels within the courtyard. The most significant acoustic effect of each change was that the already small level of noise output of the heat pumps affected fewer hotel bedrooms - the noise output is largely directed upwards, and rooms on lower floors would be less affected by noise than previously.

The Current Configuration of Hotel Plant

The recently-completed development has produced a single unified plant space serving the hotel. This is located on the roof at level six. Geometrically this layout is high enough to be out of sight of all hotel bedrooms; it is simply not possible to reduce further the noise which is received at any hotel bedroom elevation as a result of noise emission from installed hotel plant.

Noise Control Measures Requested by Camden Public Health Department

The recent request by the local authority must be viewed in the light of the discussion above. It appears to ask for the hotel to take action to reduce further the noise level from hotel services affecting hotel bedrooms. The suggestion would appear impossible to meet; the noise environment affecting all the bedrooms facing into the lightwell/courtyard space is created entirely by the services systems of the neighbouring hospital over which the hotel has no control whatsoever.