



PROBLEM

When a leading Edinburgh Hotel experienced unwarranted environmental noise levels following the installation of externally mounted condensing units and chiller items, they turned to acoustic specialists Wakefield Acoustics for an effective solution.

Whilst the condensing and chiller units were entirely necessary to provide adequate cooling for the hotel, the owners understood that failure to address high levels of environmental noise transmissions could result in the hotel being in breach of UK legislation, such as BS4142:2014 'Methods for rating and assessing industrial and commercial sound', which covers noise from fixed plant items.

SOLUTION

Wakefield Acoustics worked closely with the hotel to accurately analyse, diagnose and put in place innovative noise control measures to address issues with excessive noise from the plant items.

Following initial consultation, a range of noise control solutions were considered, with the agreed outcome being a series of double-bank acoustic louvres that were positioned around the side of an acoustic enclosure which housed the plant items.

The acoustic louvres contained acoustically absorbent media, contained within a series of horizontal steel blades, and allowed air to be drawn into the plant area.

As well as noise reductions, efficient plant room operation was an essential requirement for the project. A series of acoustic baffles were also installed to allow warm air to be discharged up through the 'roof' of the enclosure. In order to prevent warm air circulation, which would impact upon the operational efficiency of

the plant, the roof-mounted baffles were fitted close to the discharge air point of the plant.

Due to the overall size and weight of the plant, a support steelwork structure was required to be installed in conjunction with the noise control items, which was designed and installed by the noise control specialists.

RESULTS

The installation was designed to reduce noise by 10dBA, when assessed in line with BS4142:2014 'Methods for rating and assessing industrial and commercial sound'.

As well as noise attenuation benefits, the louvred screens also act as a visual barrier, offering an aesthetically pleasing appearance, along with enhanced security for the hotel's condensing units and chiller plant items.

