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Noise Report

Proposed work to eliminate noise breakout from Venue "18"

Report undertaken by: Neil Carpenter, Future Technical Solutions Ltd

Main Walls

The main walls of the venues structure are nearly 1m thick and reduce sound levels by some 65db. The venue is situated in a basement which means the roof structure isn't an issue. There are other weaknesses observed and addressed below.

Fire Exit Doors

All fire exit doors will be incandescently lined with each exit having two sets of doors creating a "sound lobby". Each exit door will also have a programmable access lock linked to the fire alarm system to stop unwanted opening of these areas. This will maintain the sound lobby at all times removing the previous main weak link in the venue. Below are figures taken before this action taken and proposed figures after.

Internal measurement at 1m	98db LAeq
External measurement with only single fire door closed	67db LAeq
External measurement with both fire doors closed	58db LAeq

This level will be reduced again once the incandescent strips are installed but the main reduction will be in keeping both fire doors shut at all times.

Existing Extract System

All existing extract fans and ducting will be removed and replaced with a new air conditioning system. We measured 10db hotspots observed at the point where the extract ducting breaks through to the outside grill.

We proposed to have the below work carried out:

The existing grills will be removed both internally and externally.

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REGISTERED OFFICE: SIGMA HOUSE, OAK VIEW CLOSE, EDGINSWELL PARK, TORQUAY TQ2 7FF

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Internal works

The existing ducting hole will be filled with Acoustic mineral wool and then the ducting hole covered with firstly a layer of 15mm acoustic plasterboard with a layer of Technosound and another layer of 15mm acoustic plasterboard.

External works

The existing ducting grill will be removed the hole will then again be filled with acoustic mineral wool. The external hole will then be filled with a layer of marine plywood sandwiching two layers of 15mm acoustic plasterboard with then another layer of marine plywood. This will reduce the noise levels emitting from here by 55db.

Stage/DJ Position

The DJ box will be positioned behind the new stage area, which backs on to the office. This will direct the sound towards the internal services area in the rest of the basement including the cellar. This action will allow us to reduce sound levels exposed to the weaker rear area and thus reducing levels escaping from the venue.

Sound System

The sound system will consist of two mid high speakers ceiling mounted at mid stage position. There will be two additional sub bass speakers fitted to the rear of these giving full control to the sound setup. These sub bass units will be fixed onto sound absorbing springs reducing resonation from the units and giving control.

There will also be two additional controlled zones acting as infill both consisting small 6” full range speakers. All speakers will be controlled via a DBX drive rack digital processor enable full control/limiting of the frequency spectrum as well as crossover, delays etc.

The processor will be installed in the amplifier rack which will be installed in the office area and locked with password protection.

All entertainment will be routed through the in-house sound system via an audio patch panel, giving full control of all types of requirements via the in-house limiter. This limiter will be setup with the local EHO department and set and lock to the agreed levels.

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Results from proposed works

It is always difficult to predict results on a schedule of works, but I have been involved with this building for over ten years. We have proposed these actions many times before to previous operators but none of the works were acted on. Parts were introduced, such as the sound limiter but this could not protect residents from fire exit doors being left open and such. If all actions are taken, then we would expect a reduction of leakage from 78db existing to 60db minimal.

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