

To: Richard Pratt
From: Roger Barrett
Date: 29 December 2020
Subject: Butlin's Temporary venues – audio systems

Introduction

The systems to be installed feature the L'Acoustic brand of loudspeakers and amplifiers. These systems are designed for the individual cabinets to couple together as a 'line-array' system to provide accurate control over the sound dispersion.

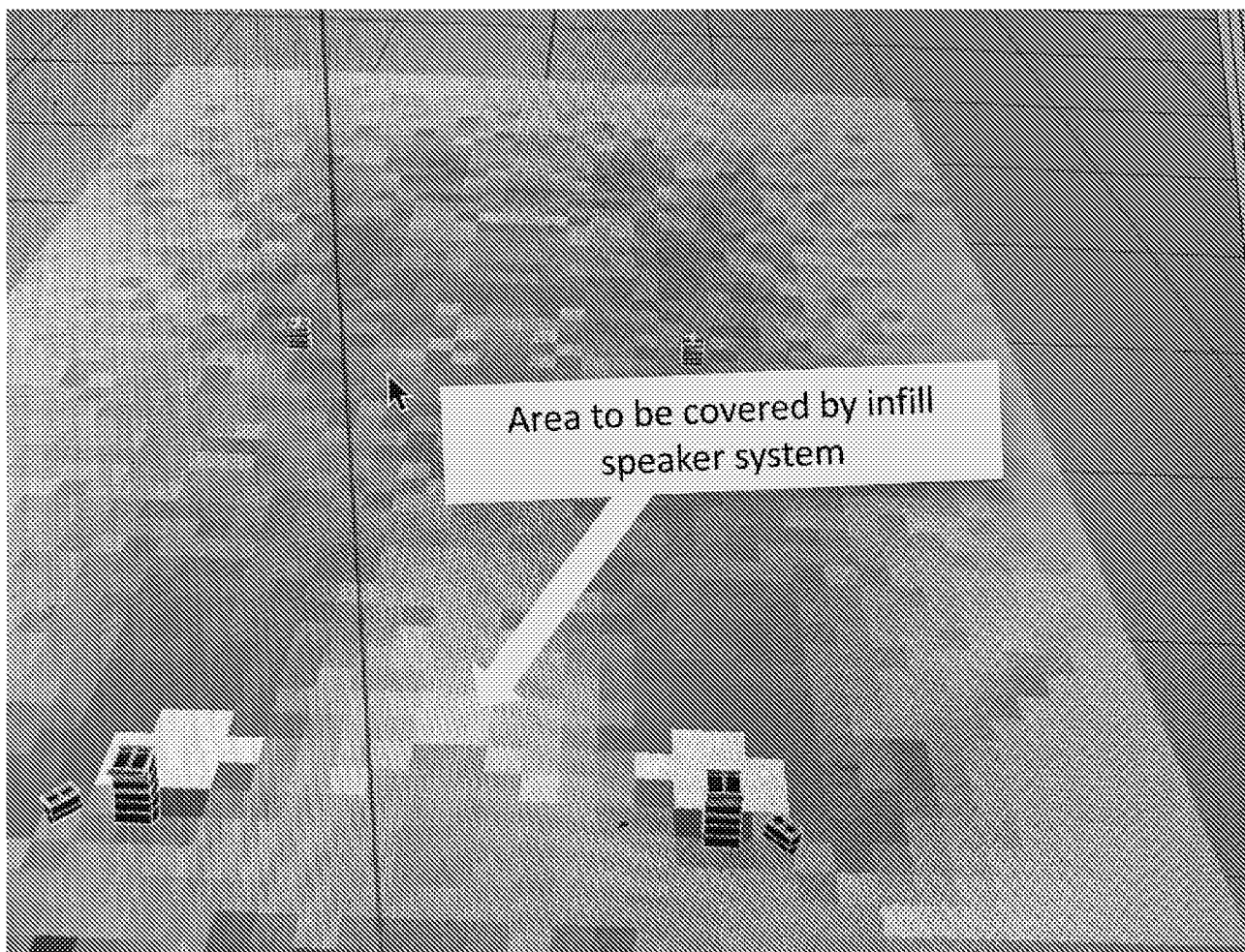
This is a typical line-array system using the products specified:



Dispersion

The design of the speaker boxes controls the horizontal dispersion very accurately (to 110°). The boxes are positioned so that the horizontal radiation has dropped off by the time it gets to the side walls, with another set of speakers taking over for the rear half of the venue.

By hanging all the speakers as high as possible and carefully angling down into the audience, the vertical dispersion can be accurately tailored to the venue. Using two main arrays and two smaller 'delay' arrays, a typical distribution pattern like this can be achieved (looking from the stage end towards the rear of the venue):



A common problem due to the tight horizontal coverage is a lack of sound in the middle of the audience, close to the speakers. To avoid users turning the volume up to cover this problem, we have specified additional small infill speakers across the front of the stage which can be volume controlled separately.

Full sound 'heat maps' will be produced for the final system specification.

Sound level limiting

There was a trend a few years ago for entertainment venues to have devices that cut the power to the audio equipment if the sound volume exceeded a pre-set level. That technique is now largely abandoned for modern installed systems in venues as once the power is cut, it takes some time to get a system up and running again (analogous to re-booting a PC after a power cut).

For that period there is no means of communicating with the audience, which could be catastrophic in the event of a crowd disorder or emergency evacuation situation.

The systems specified for the Butlin's Temporary venues will have signal limiting devices which 'compress' the sound if pre-set levels are about to be exceeded. They do not shut down or prevent the systems from operating other than to limit the volume. There are no controls on these units that can be accessed by a sound engineer without dismantling part of the equipment.

Signed for Star Group Live Ltd



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