Meyer Sound Uses Innovative Sound Steering Technique for Cirque du Soleil

IMAGES

Over the years, Meyer Sound and Cirque du Soleil have worked together to craft a superior sound system for Cirque's phenomenal theatrical productions. The goal has always been to provide high quality audio that performs consistently from venue to venue. After all, the audience should be concentrating on the amazing visual feats of the "circus," not on any shortcomings from the loudspeaker system.

Recently, while performing "Quidam" at the Orange County Fairgrounds, Cirque approached us with a dilemma. It seems that people from the adjacent community were complaining ardently about the noise reaching their houses during performances, and they wanted it to stop. Cirque wasn't sure how to solve the noise problem, but with due concern for their neighbors, they assured them an answer would be found...quickly. Upon hearing of the situation, Meyer flew down to the Fairgrounds and immediately set to task finding a remedy.

Following is some information about the steering technique, a beautiful representation of the Cirque's committment to serving the needs of the communities they visit.

Q: How is Meyer decreasing the sound?
A: We're using a new, electro-acoustical "steering technique" to create a "virtual wall" that shepherds the sound waves away from the local community. We're not canceling the sound like some people assume; we're actually tightening the control over the bass frequencies so that the Cirque du Soleil can stop it from spilling into the neighborhoods.

Q: How does this differ from sound cancellation?
A: Well, rather than masking the sound or canceling it out, we're directing it out and away from the section where the houses sit. Since most of the area around the Big Top is empty fairground, we're concentrating instead on curbing the sound in a very tight area of housing, basically an 80° arc to the left of the Big Top. Within this space, we redirect the bothersome sound power so that it circulates around the perimeter of the Big Top. It's a simple concept but the mathematical precision it requires is intensive.

Q: What impact does this technology have on the sound level?
A. With Meyer's equipment installed and analyzed for accuracy, the sound power reaching neighborhoods decreases by ten times.

Q: What specific equipment are you using?
A: We're using ten powerful Meyer 650-P Subwoofers to move the sound, an SPL meter, and then SIM ("Source Independent Measurement") System II, our proprietary acoustical measurement system, to measure, analyze and then adjust the system as it requires.

Q: What about alternative solutions like building thicker walls to block the sound?
A: It's really not economical or even practical to build a huge wall. It would be really expensive and labor-intensive, and it wouldn't even block the low frequency waves- the bass sounds- which are creating the bulk of the problem.

Q: Only the bass sounds are the problem?
A: The bass sounds are the predominant problem. There's a wall on the other side of the freeway that blocks some sound from the houses, but especially the high frequency waves. It's not much of a barrier to the very long bass waves. That's where Meyer comes in.

Q: Is this a brand-new technology?
A: No, in fact, we used a similar technique back in 1995 for the Grateful Dead in Las Vegas. They were putting on a live performance at the UNLV Silverbowl and were having problems with excess bass energy onstage. We used this same steering technique to create a wavefront that suppressed the low frequencies. It was extremely effective.

Q: Do you envision using this technology in other applications in the future?

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A: Definitely. It's the perfect solution for any live venue like concerts, fairgrounds or festivals where the need to curb the sound power for urban areas. It would certainly make for easier relations between promoters and the communities they serve.

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