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## Michael Clay, Texas Music Project Tupps Brewery Venue, McKinney, Texas

Dear Mr. Clay,,

Epicenter Productions is both knowledgeable and experienced with the mitigation of excessive noise from both permanent and temporary live music venues and events. Controlling excessive noise requires a multi-faceted approach to properly achieve optimal results. Below are a few of the common techniques that should be considered "Best Practices", and which we deploy in our projects.

Control- The first step in preventing excessive noise from entering sensitive areas is to control the coverage of the deployed speaker systems. Modern technology allows systems such as line array speaker clusters to be flown, aimed, and shaded to cover a specific area, while achieving significant SPL reductions in areas outside the focus zone. Focusing the energy into the intended crowd, and eliminating reflections off hard surfaces, or waves to leave the venue space uncontrolled, are the primary goals of a line array style system. In addition, low frequency energy, can also be controlled by deploying cardioid sub-arrays- allowing an increased level of low frequency energy to the intended audience, while reducing unwanted low frequency energy behind the stage and in non-spectator areas. We utilize modeling software and prediction analysis software to determine how a specific system will perform inside the venue, allowing for adjustments to achieve the best possible design before equipment is purchased or installed.

Operation- The second step is to ensure that installed systems are operated as they were intended. This includes crucial training for personnel, and proper settings for key components of the installed system, including Equalization, Delay, Compression and Limiting. Additionally, monitoring systems can be deployed to measure the real time



Acoustic Treatments and Controls- The third step is to deploy technologies within the venue to help reduce reflections, absorb excessive energy and specific frequencies, and to re-direct sound energy away from sensitive areas. Surface absorption materials, angles of incidence, sound barriers and standing wave analysis are all items to consider to help control unwanted noise energy. Such treatments and controls can include walls, landscaping, and specialized foams and battens.

Proper Programming- The fourth and final step is to program the space as it was intended to be used. The equipment installed and the mitigations deployed must reflect the size and type of production that will be booked in the space. If an area is designed for acoustic music, the technologies incorporated into the design may not provide enough control for a full band on a special event night. If the intent of the space is to have an occasional large event, then the systems should be designed to mitigate the worst-case scenario.

The Tupps Brewery project is an exciting opportunity for McKinney and will be a catalyst for tourism and development. It is my belief, that with proper planning and execution, the project can be a good neighbor to nearby residents by following these proven methods. I look forward to working with you on this project.

Warm regards,

Jeff Krebs Partner

**Epicenter Productions** 

