



+ INFOGRAPHICS INCLUDED

EXPERT ADVICE

# TIPS AND TRICKS: ACOUSTIC PANEL PLACEMENT IN YOUR MUSIC STUDIO

DECIBEL

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FROM OUR ACOUSTICIANS**



Music is the strongest  
form of magic.

Marilyn Manson



# TIPS AND TRICKS: ACOUSTIC PANEL PLACEMENT IN YOUR MUSIC STUDIO

When it comes to transforming the acoustics of your space, acoustic panels are a powerful tool. These panels work wonders in taming echoes, reducing noise buildup, and enhancing sound clarity. However, to unlock their full potential, proper placement is key. In this guide, we'll delve into the art of optimal acoustic panel placement to help you create a harmonious auditory environment that truly resonates.

# Identify Reflection Points

Begin by identifying reflection points – surfaces where sound waves bounce off and create echoes. These reflection points, including areas like walls, ceilings, and corners, are where sound waves bounce off surfaces, creating echoes.



Focusing on three key reflection points can greatly enhance acoustics: the mirror point, positioned between the loudspeaker and listening seat; the side walls hosting the speakers; and the ceiling area between the speakers and listening spot.

Placing acoustic panels at these points will intercept and absorb these reflections, preventing sound from becoming muddy and indistinct.

*See the infographics at the end of the article.*



# The First Reflection Point

## for Speakers

For optimal sound quality, address the first reflection point for your speakers.

This point is where a direct line runs between your speakers and ears.

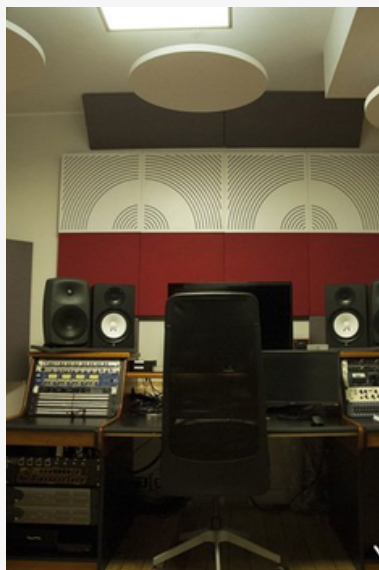
To pinpoint this crucial area, sit at your listening position and envision where the sound emitted from your speakers strikes the side walls before returning to you.

Placing acoustic panels at this intersection, ideally at ear level, minimizes the impact of reflected sound waves, and ensures you hear music or dialogue clearly without interference.



# The Ceiling

Don't forget about the ceiling! Vertical reflections are a crucial consideration in any recording space, and managing sound that bounces back and forth overhead can significantly impact the clarity and precision of your audio productions. By strategically suspending Echo Moon Acoustic Hanging Textile Baffles from the ceiling, you can significantly reduce the unwanted bounce of sound waves, leading to improved audio accuracy during recording and mixing sessions.



In addition to the Echo Moon, the Echo Cloud Acoustic Hanging Textile Baffles provide yet another innovative solution for managing sound reflections from the ceiling. Similarly, the Echo Cloud baffles scatter and diffuse sound waves, preventing them from connecting and causing an echo in your studio. Plus, you can easily transform your ceiling into a dynamic and engaging aspect of your studio's design.



Place **CEILING BAFFLES**  
to absorb sound in the  
mid and high-frequency  
range from both its front  
and back sides and  
eliminate the echo.

# Corners Matter



Corners are notorious for trapping sound and creating boomy bass. Placing bass traps in room corners helps prevent low-frequency buildup, providing a cleaner and more defined audio profile. High-frequency panels can also be added to corners to maintain balanced sound dispersion.

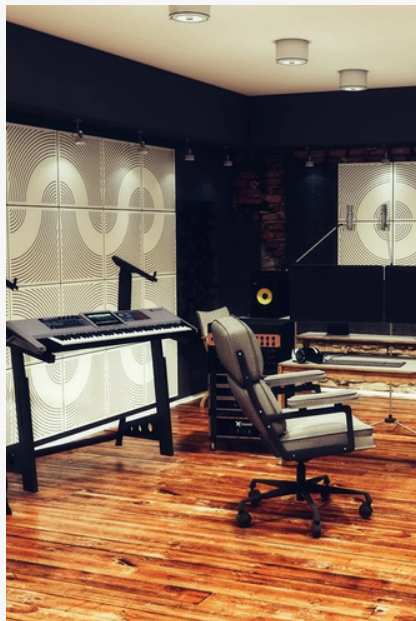




Place the **BAS TRAPS** in the corners of your studio to absorb low-frequency sounds between 125-250Hz and **DIFFUSERS** at the back to cover the medium and high-frequency range.

# 5

## Using and Diffusing



When aiming to achieve optimal acoustics in your music studio, the placement of diffusers is a key consideration.

As a general guideline, consider placing diffusers on surfaces where sound reflections are most prominent, such as walls behind speakers or recording areas.

This strategic placement can help scatter sound waves, reducing problematic reflections and enhancing the overall sonic clarity of your space.

*See the infographics at the end of the article.*

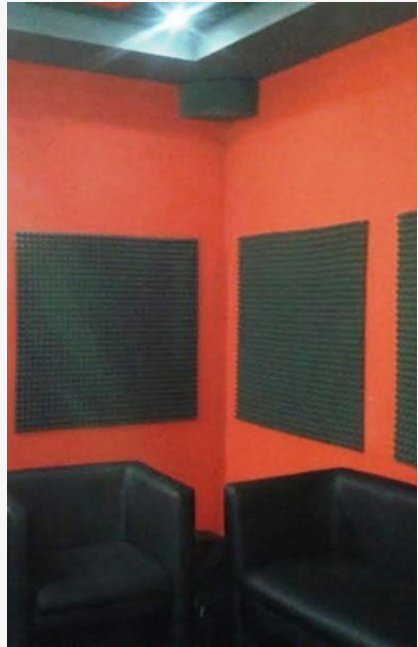




The **SOUND**  
**DIFFUSER PANELS**  
can be installed on  
both, walls and ceilings  
and find their place in  
an array of settings.

# 6 Behind You

Addressing the area behind you is equally important. Placing panels behind your listening position can help absorb sound that escapes. This enhances overall sound clarity while ensuring a comfortable listening experience for everyone.



# 7 Wall-to-Wall Placement

Consider placing panels across the entire length of a wall for uniform sound absorption. This is especially effective in larger spaces where sound waves can easily bounce around. Wall-to-wall placement ensures a consistent auditory experience, minimising variations in sound quality.



Place **ACOUSTIC**  
**PANELS** on the side walls  
to catch sound reflections.  
For best performance,  
combine **WOOD** and  
**TEXTILE** acoustic panels.

# Mixing and Matching

Different panels serve different purposes. Foam sound absorbers are excellent for controlling overall sound reflections, while diffusers scatter sound waves for a more natural ambience.



Mixing and matching panel types can strike a balance between absorbing excess sound and maintaining a lively auditory atmosphere. Consider the powerful combination of wood acoustic panels, textile acoustic panels, and bass traps.



Balance your acoustics  
with the right panels:  
FOAM for reflection  
control, and DIFFUSERS  
for natural ambiance.

# 9

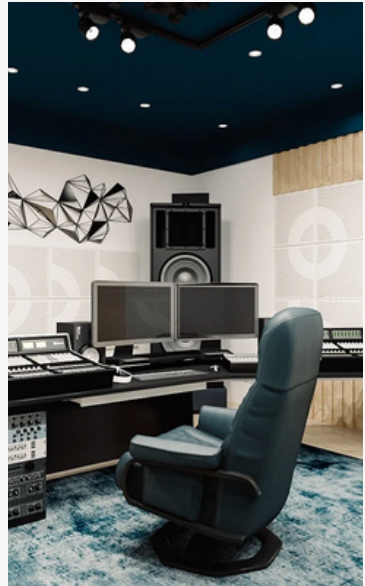
## Test and Adjust



Acoustic panel placement is not an exact science. It's important to test different arrangements and listen to the changes in sound. Start with a few panels and gradually add more while assessing the sonic improvements. Your ears are your best guide in finding the perfect arrangement. Let your ears lead the way as you experiment with panel placement for the ideal sound.

## 10 Consider Aesthetics

Acoustic panels don't have to be unattractive or visually displeasing. DECIBEL offers customisable panels that can blend seamlessly with your decor. By integrating these panels as design elements, you achieve both acoustic enhancement and visual appeal.





Elevate aesthetics with ACER perforated wood acoustic panels. Select White Veneer colour for a modern look. And Natural Oak Veneer colour for a cosy atmosphere.



# Experiment and Enjoy

Acoustic panel placement is a dynamic process. As you experiment with arrangements, remember that the goal is to create an auditory space that resonates with your preferences.

With time and effort, you'll discover the arrangement that brings out the best in your space's acoustics.

## BONUS: Exclusive Pro Tip From Our Acousticians

When it comes to crafting the perfect acoustic environment in your music studio, one concept that has gained popularity among both listeners and directors is LEDE - Live End Dead End.

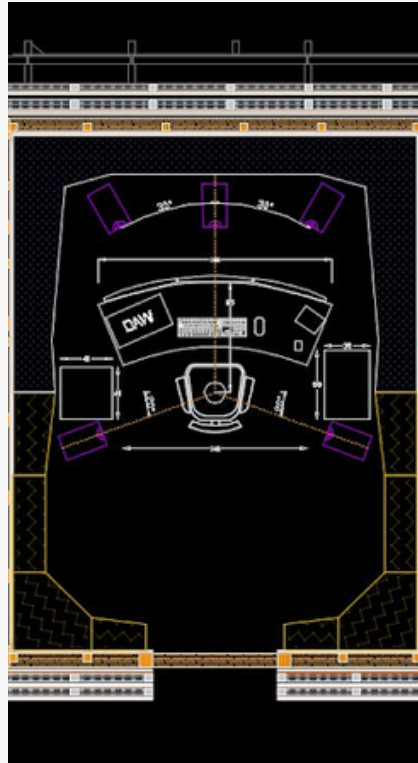




LEDE - Live End  
Dead End, a  
concept that's  
changing the game  
for sound quality.

This innovative approach divides your studio space into two distinct halves, each serving a unique purpose in optimising sound quality.

In the first half, known as the "Dead End," you'll find carefully placed acoustic panels and bass traps, creating a tightly absorbed area near the speakers. This absorption zone is strategically designed to capture and eliminate any unwanted reflections from your speakers. By doing so, it ensures that the sound remains pure and unaltered, free from distortion.



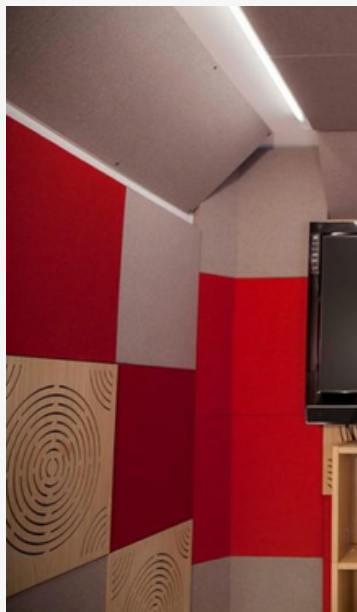
On the other side, we have the "Live End." This half of the room, starting from the midpoint between your ears and extending towards the rear, incorporates diffusers. These diffusers are responsible for scattering sound waves in a way that mimics the natural acoustics of everyday living spaces like a cosy living room or a bedroom.



This diffusion effect imparts a soft and pleasant volume to the sound, ensuring it doesn't come across as dry or overly controlled.

The genius of the LEDE concept lies in its ability to create a surround sound experience while completely eliminating any disruptive reflections. It's the perfect harmony between absorption and diffusion, delivering optimal acoustic conditions for your music studio.

To take your LEDE setup to the next level, consider experimenting with the placement and density of your acoustic panels and diffusers. Fine-tuning these elements can help you achieve the precise acoustic characteristics you desire, allowing you to tailor your studio's sound environment to your unique preferences. Remember, the beauty of LEDE lies in its flexibility, so don't hesitate to adjust and refine until you find the sweet spot that makes your music truly shine.





Professionals  
divide spaces into  
two distinct zones,  
fine-tuning sound  
with precision.

I N F O G R A P H I C S



**Save for later**

# ACOUSTIC PANEL PLACEMENT FOR HOME STUDIO

## BASIC CRITERIA

1. Work **undisturbed** during specific hours
2. Maintain desired **SPL** (sound pressure level) volume
3. Studio **background** noise under 30 dB/A
4. Golden room **proportions** for optimal frequency response: 1:1.6:2.33, 1:1.4:1.9, or 1:1.28:1.54 (h/w/l)



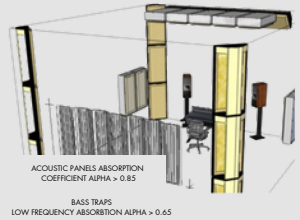
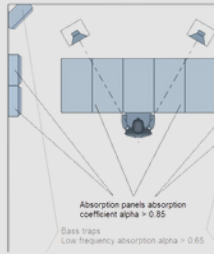
## COMMON ERRORS

1. Facility selection without **SPL testing**
2. Opting for old or lightweight **building** construction for low-frequency insulation
3. Cubic room **proportions**: an expensive frequency response challenge
4. Premium equipment in **poor** acoustic environments
5. Overabsorption of **high frequencies**, neglecting **low frequencies**



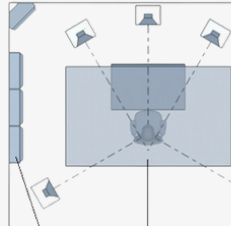
## DESIGN OF HOME STUDIO OPTION#1

A lightweight acoustic treatment for 2 channel audio system



## DESIGN OF HOME STUDIO OPTION#2

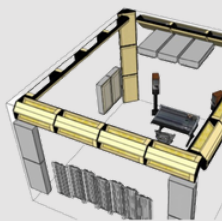
A lightweight acoustic treatment for 5.1 audio system



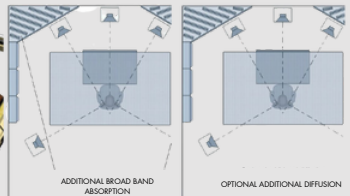
OPTION 1 - ADDITIONAL ABSORPTION PANEL

## DESIGN OF HOME STUDIO OPTION#3

Additional acoustic treatment for 5.1 audio system



BASS TRAP ABSORPTION FOR LOW FREQUENCY TREATMENT



WIDE RANGE ABSORPTION ON THE REAR WALL AND FRONT BASS TRAPS

At DECIBEL, we know that every music space (and its owner too) has different specifics and needs personalised treatment. Feel free to consider a consultation with us regarding the optimal acoustic solutions customised exclusively for you.

# THANK YOU


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