**REDIacoustics™ NIRO Process Streamlines Design of New Brainworx Studio Space**

*AI-powered acoustic optimization and custom acoustic panel solutions improve critical listening conditions in new studio space of top plugin designers*

**LANGENFELD, GERMANY, APRIL 24, 2024 —**[**Brainworx**](https://www.brainworx.audio/) **have built a reputation in the industry for their skillfully designed plugins that recreate classic analog outboard equipment. Given that critical listening is essential to their plugin design process, Dennis Busch from** [**Acoustic Spaces**](https://www.acoustic-spaces.de/en/) **was commissioned to build a new studio control room in their Langenfeld, Germany headquarters that would prioritize ideal acoustic conditions and the ability to accurately listen from multiple positions within the studio space. To ensure that the new studio space was optimized for these needs, studio designer Dennis Busch partnered with acoustic research and software development company** [**REDIacoustics™**](https://rediacoustics.com/) **and utilized their AI-driven software solution** [**NIRO™**](https://rediacoustics.com/niro) **[Non-Cuboid Iterative Room Optimizer], to optimize the acoustic geometry of the new studio as well as design custom paneling for the ideal acoustic environment for Brainworx’s needs.**

**Acoustic experience streamlined for a modern listening space**

For more than a decade, REDIacoustics has been perfecting their AI-powered software solutions to streamline the design of recording studios and critical listening spaces around the world. When Busch presented them with the Brainworx project, it was a classic use case of NIRO’s usage within a nontraditional room shape. “The studio space was built within an existing 10x8x4m room and utilized a decoupled, Mirror-V shaped room with cinema seating at the back of the room in addition to the Engineers spot,” explained Dr. Peter D’Antonio, REDIacoustics Co-Founder. "The versatility of our tools and the opportunity to explore new possibilities enabled us not just to predict but to shape the acoustic landscape actively, ensuring every note and frequency is experienced as intended. The end result is a prime example of what the synergy between NIRO and TORA can achieve."

"The flexibility provided by the designer truly allowed us to showcase the power of our optimization tools," says Rinaldi Petrolli, the lead acoustic engineer of REDIacoustics. "From the outset, we were presented with the perfect scenario for NIRO: optimizing the inner room shell from the ground up. Our optimization process enabled the meticulous fine-tuning of the room's geometry and the speaker and listening positions, establishing a solid acoustic foundation from the beginning. Following with TORA, we tailored the acoustical treatments to fine-tune the space, focusing on temporal decay and frequency response control. The installation of a 6 subwoofer array marked our final step, creating uniform low-frequency energy distribution across every seat.”

“The simulation power of NIRO is incredibly useful —it takes the headaches out of what I do and solves problems that would require 4 or 5 different software solutions with an outcome that is better than all of them put together,” stated Busch. “It was very useful in the Brainworx studio as we had some interesting geometry to work with.”

**Brainpower meets AI-powered**

Once the optimized geometry of the room was determined, REDIacoustics’ TORA [Treatment Optimization for Room Acoustics] process was then utilized to provide Busch with custom, project-specific acoustic treatment designs for the studio. This streamlined the design process and gave Brainworx exactly what they needed to get the most out of their optimized space. “When you combine the processes of optimizing the acoustic geometry of a room and designing the acoustic treatments required to achieve that optimization, the results are much more accurate to the predictions and you get better sounding rooms,” explained REDIacoustics Co-Founder PK Pandey. ““We work directly with our end users and studio designers to determine exactly what each project needs and provide them with materials that replicate the results of our simulations exactly.``

Completed and put into use by Busch and his team within 3 months, the Brainworx studio project exceeded all expectations of the designer and of its end users. “It is a completely new room-in-room, designed by Dennis, optimized by us, and built for them that is the centerpiece of everything they do,” Pandey explained. “They have to spend hours and hours in there fine-tuning their plugins against the hardware that inspires them, so it was extremely important that there be no compromise on the comfort, ergonomics, or acoustics of the space.”

“Working with REDIacoustics made this possible,” added Busch. “They are all musicians, like me, so there’s an immediate bond there that ensures the project gets done correctly. They all understand the value of sound and how important combined disciplines are to make a project work. NIRO and TORA take the painful part of this process away.”

For more information about REDIacoustics please visit: <http://www.rediacoustics.com/>

For more Information about Acoustic Spaces please visit: <https://www.acoustic-spaces.de/en/>

**ABOUT REDIacoustics, LLC**

REDIacoustics, LLC is an acoustic research and software development firm founded by Dr. Peter D’Antonio founder of RPG Diffusor Systems, Inc., John Storyk of WSDG, and PK Pandey of AVN | SYS. REDIacoustics is dedicated to designing software tools that aid in the acoustical optimization of critical listening environments, beginning with their groundbreaking service, NIRO™ (Non-Cuboid Iterative Room Optimizer).

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