

# Architectural Acoustics at their Best: The Blitz Club

In the northernmost part of the Deutsches Museum in Munich stands the former Kongresshalle, a historical building now repurposed as an event space. Among its many transformations, the [Blitz Club](#) project by [Simon Vorhammer](#) and Studio Knack stands out for its innovative approach to design and acoustics, creating a unique spatial and auditory experience.



The Blitz Club spans approximately 600 square meters, featuring two dance floors of varying sizes and a bar area. The main dance floor, aptly named “Blitz,” stretches 35 meters in length and eight meters in width, embodying a technical and functional aesthetic characterized by wood and steel elements.

A key aspect of this space is the modular, freestanding dance niches, designed in collaboration with room acousticians. These niches fit perfectly into the existing column grid, effectively zoning the area.

The heart of Blitz lies in its specially developed 3D-milled wall and ceiling panels. Using advanced algorithms, these panels feature

geometrically intricate designs with inclined back walls.



The front edges of these panels exhibit a straight-lined triangular structure, while the inner fields form concave pockets with varying cross-sections and depths. This design scatters sound waves in multiple directions, enhancing the acoustic quality and creating a vibrant auditory environment.

The second dance floor, “Plus,” offers a contrasting yet complementary experience. It is acoustically decoupled, featuring a continuous flow of indentations across its walls, with no discernible beginning or end. This design, inspired by the swarm behavior of fish, birds, and insects, includes over 10,000 valleys and ridges distributed along a 25-meter stretch.



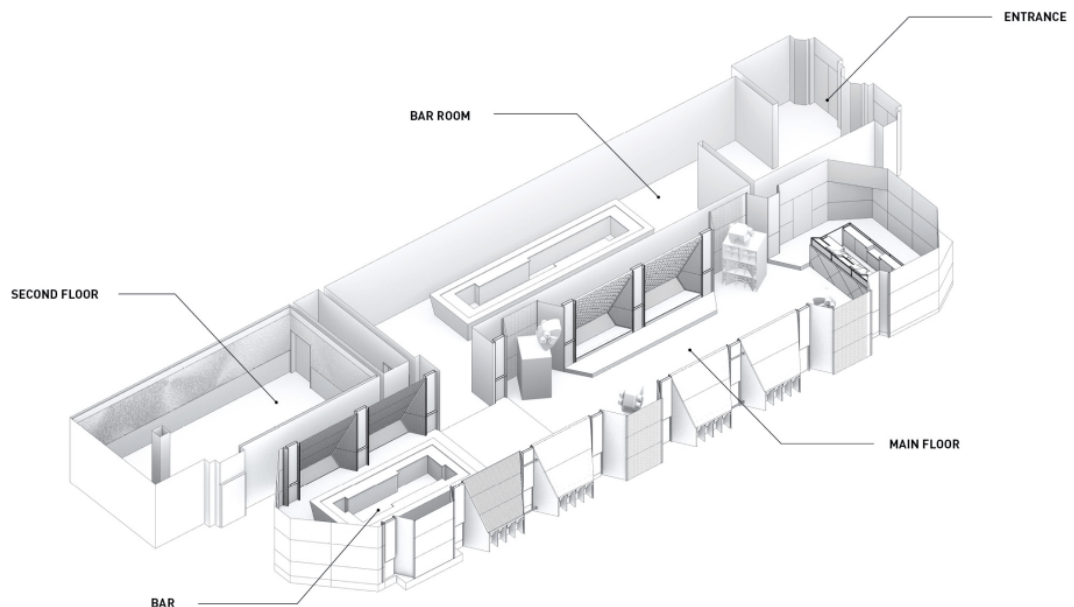
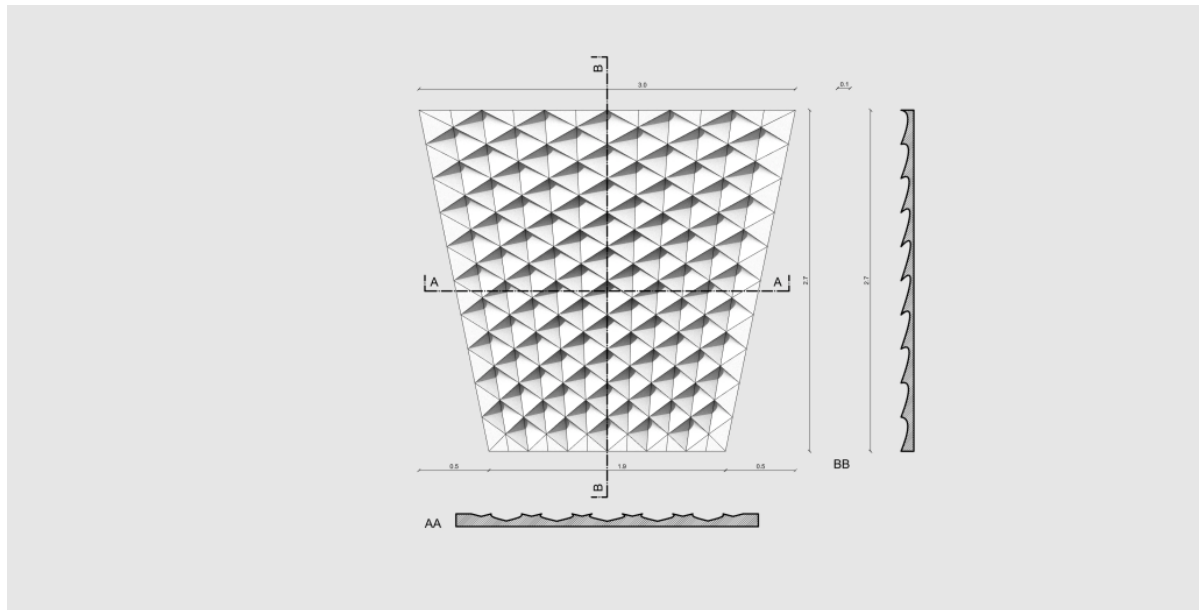
The non-repetitive pattern and black-painted MDF surfaces provide necessary acoustic diffusivity. These irregular structures ensure even sound absorption across the entire frequency spectrum.

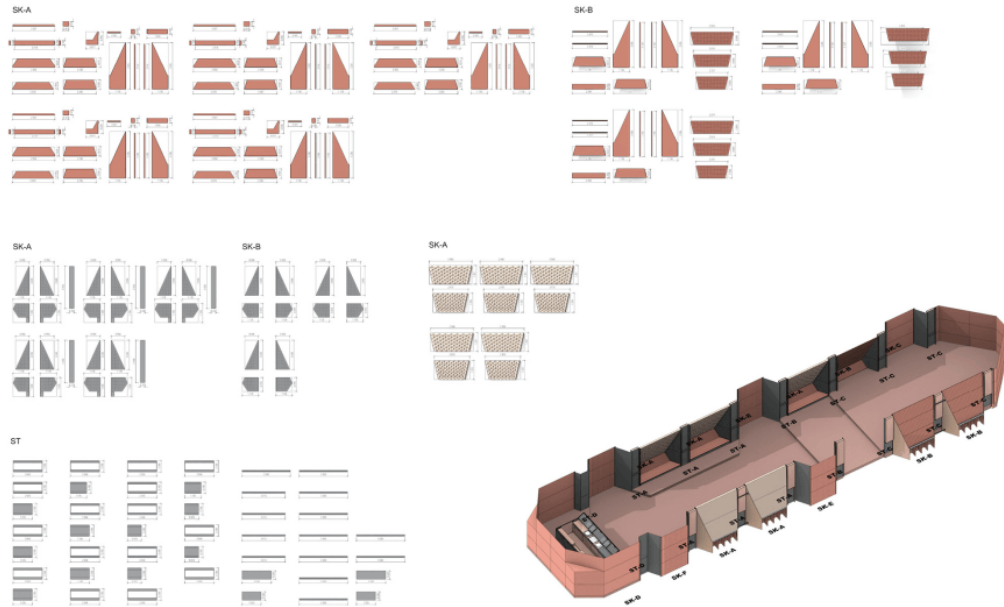


Lighting plays a crucial role in the Blitz Club, with changes in light synchronizing with the music to animate the relief of the walls. This

dynamic interplay of light and sound immerses visitors in a world of abstract forms, enhancing their overall sensory experience.

The realization of this ambitious project involved several advanced tools and plugins. [Rhino](#) and [Grasshopper](#) were integral to the design process, with plugins such as [Pachyderm](#) for acoustic simulations, [Anemone](#) and [OpenNest](#) for CNC fabrication, and [Elefront](#) for efficient referencing and baking between Rhino and Grasshopper.

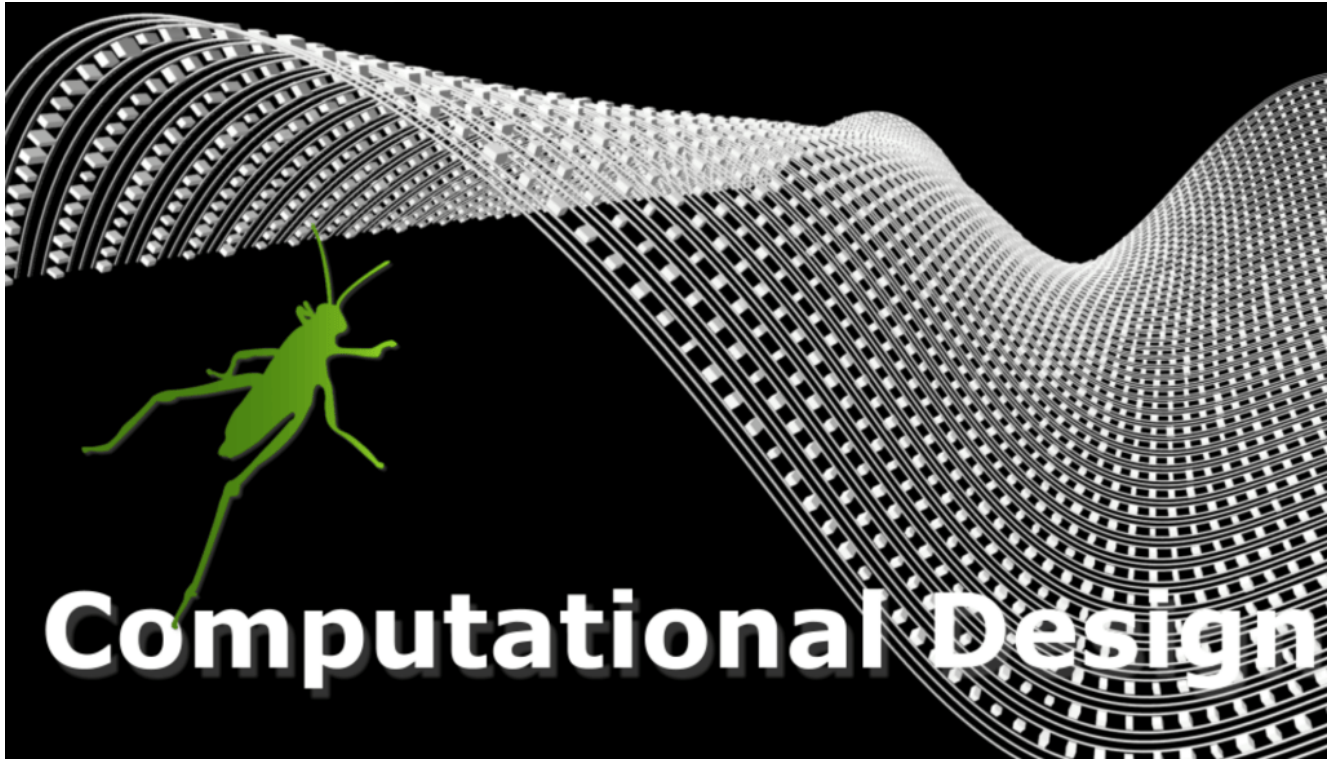




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One of the major challenges in the project was meeting stringent acoustic requirements. Close collaboration with acoustics experts and the ability to simulate acoustic behavior directly in Rhino allowed for prompt evaluation of design changes. This ensured that both fabrication feasibility and acoustic effectiveness were maintained.





[See Also](#)

[COMPUTATIONAL DESIGN WITH GRASSHOPPER](#)

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The Blitz Club's architecture has garnered significant attention. Its innovative design and acoustic solutions have established it as a major fixture in Munich's nightlife. It represents a masterful blend of architectural innovation and acoustic precision.



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By leveraging cutting-edge design tools and fostering close collaboration among designers, acousticians, and fabricators, the project has transformed a historic venue into a modern auditory and visual marvel.