

COMPLEX SURFACES

Space and sound defining surfaces in architecture

PROJEKTBEKRIVELSE

The last five years have seen great development within digital modelling software for architecture, allowing better communication between design partners through the sharing of highly detailed 3D models, the potential for direct connection to digital manufacture, and parametric design practices which enable the creation of complex surfaces and variable geometries. These new digital tools promise an optimisation of the architectural design where the architectural drawing becomes the interface between environmental data and project constraints. The scientific goals for this PhD project will be to understand how the integration of acoustical analysis into architectural CAD software will impact the architectural design process and how new computer driven manufacturing tools can be used to specify highly detailed surfaces that control the acoustical environment.

The traditional medium of architectural design is the drawing and as such, is visually biased. Today's architectural practice takes place through computer aided design programs and, as such, has the potential to include acoustic simulation. However, no architectural design programs do so. The traditional separations between architects and acoustic consultants have meant that sound remains outside the primary design tools for architecture. This lack of integration impedes workflow and makes iterative feedback mechanisms cumbersome and expensive, thereby slowing down or prohibiting innovation and experimentation.

The aim of this project is to create tools and workflows that enable acoustics to become an architectural design problem. By investigating how architectural surfaces such as walls, floors and ceilings, can be designed and detailed to be acoustically regulating, the project will develop integrated design solutions for sound in architecture. The project focuses on integrating computer based acoustic simulation with new parametric computer aided modelling techniques to develop complex surfaces that, through their shape and material, can be part of an acoustically well-balanced space.

The aim for this PhD is to investigate new interfaces between acoustic engineering and architectural design so as to improve the integration of the spatial and sonic dimensions in architecture.

DATA

Forfatter | Brady Peters

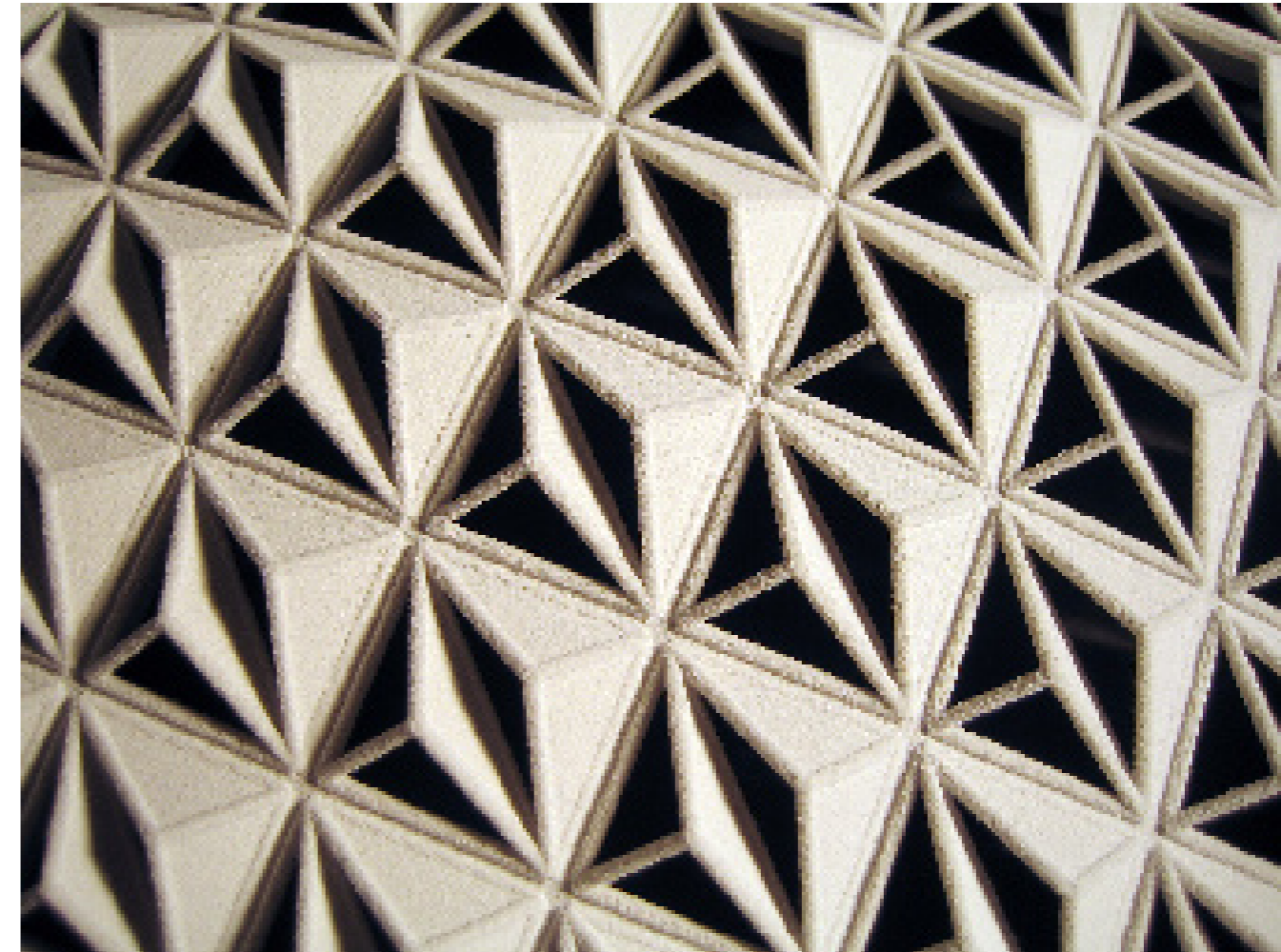
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