

TRANSLATED FROM GERMAN

by Wiebke Tomescheit

Date of Publication: 16 Dec 2016

The White Skin is his Work

Directly from the university to the Elbphilharmonie: Benjamin Koren computed 10,000 individual gypsum fiber panels to accomplish extraordinary acoustics



Now he leads his own company: the architect or "geometer" Benjamin Koren (35)

The Elbphilharmonie's "White Skin", which is present almost everywhere on the interior of the concert hall, is not just visually stunning and unusual, but also serves an acoustic purpose. It was computed and constructed by 35-year old Benjamin Koren. He originally worked for the Elbphilharmonie's architects "Herzog & de Meuron" but was later commissioned to continue on this project as head of his own company "One to One".

A combination of luck, talent and specialization led him to become part of the "Elphi-Team". His master's thesis about a music pavilion at the London's Architectural Association School of Architecture was judged by an employee of "Herzog & de Meuron" which eventually led to an invitation to join the company. Based on his portfolio's concentration on music and acoustic, the architect felt that he would be a good fit to start working on the Elbphilharmonie. "It was quite a lucky break – it would have otherwise taken a lot longer to work your way up and first win many competitions" he says proudly.

But Koren had focused in the right area of expertise: "Architecture had gone through enormous technical advances over the last ten years which provided an opportunity for me to enter this field" he explains. "I wrote my own software for the purpose of generating and optimizing geometric objects". He planned and

constructed the 10,000 panels of the “White Skin”, each one different from the next. Each panel had to fit together, down to the last millimeter.



Grooves and hills scatter the sound: The “White Skin” of the Elbphilharmonie

“On the one hand, it had to function acoustically” says Benjamin Koren. “In addition, it had a unique design. Combining the two required extensive systems to be put into place, which had to be computed mathematically.”

The small peaks of the panels are based on the results of studies from the 1970s. “Back then, acousticians started taking interest in sound diffusers” says the 35-year old. “In other words, how a property of a particular material affects acoustics. They determined that many old concert halls, such as the ones found in Amsterdam, Vienna or Boston, sounded exceptionally well because of decorative ornaments abundantly placed throughout these halls. Uneven surfaces scatter the sound waves. The opulent decorations, which were modern at the time, unintentionally created an uneven surface which resulted in better-sounding concert halls, unknown to the builders at that time.

For the Elbphilharmonie, it was possible to utilize this knowledge and use it with a specific goal in mind. Benjamin Koren does not call himself an “architect” but rather a “computational architectural designer” as his specialized field of expertise involves the computation of geometry, surfaces and objects on the computer. “I started my own company to make it possible for complex designs to become reality, not only for architects, but also for artists such as Jeff Koons. Koren currently works in New York.

ONLINE LINK (Original German Article)

<http://www.mopo.de/hamburg/die-elphi-insider---teil-1-die--weisse-haut--ist-sein-werk-25304448>