

# Pro Active Structures: The Shell, Heinz Isler and Scale

Daniela Martinez Hernandez | Architecture

Mentor: Marc Schultiz

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## Form-active Structures

On his book *Tragsysteme: Structure Systems*, Heino Engel described form-active structure systems as

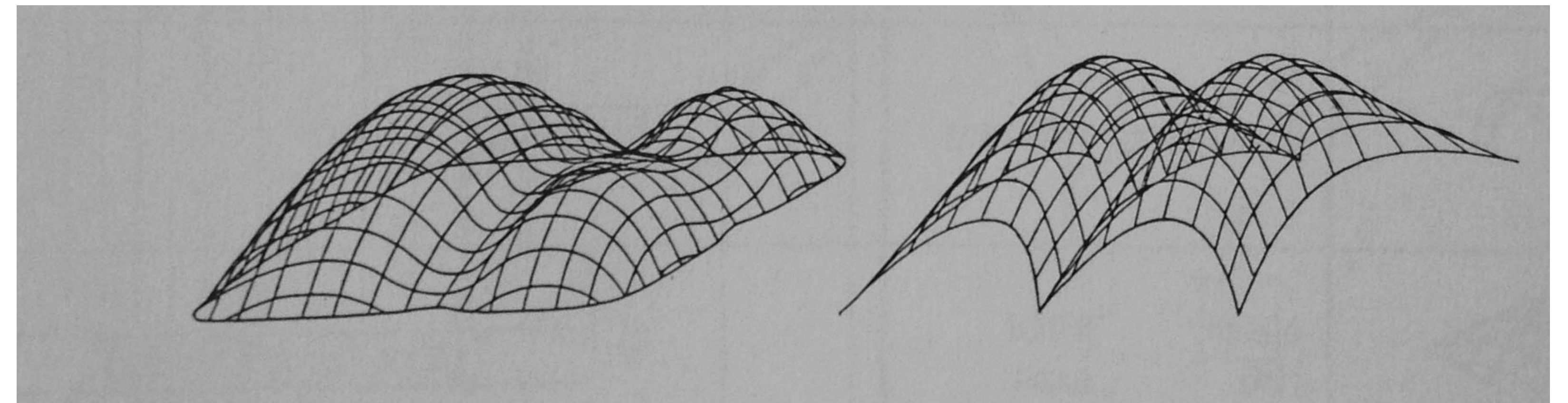
"flexible, non-rigid matter, in which the redirection of forces is effected through particular form design and characteristic form stabilization. Its basic components are primarily subjected to but one kind of normal stresses, i.e either to compression or to tension: systems in single stress condition" (Engel 1997).

## Abstract

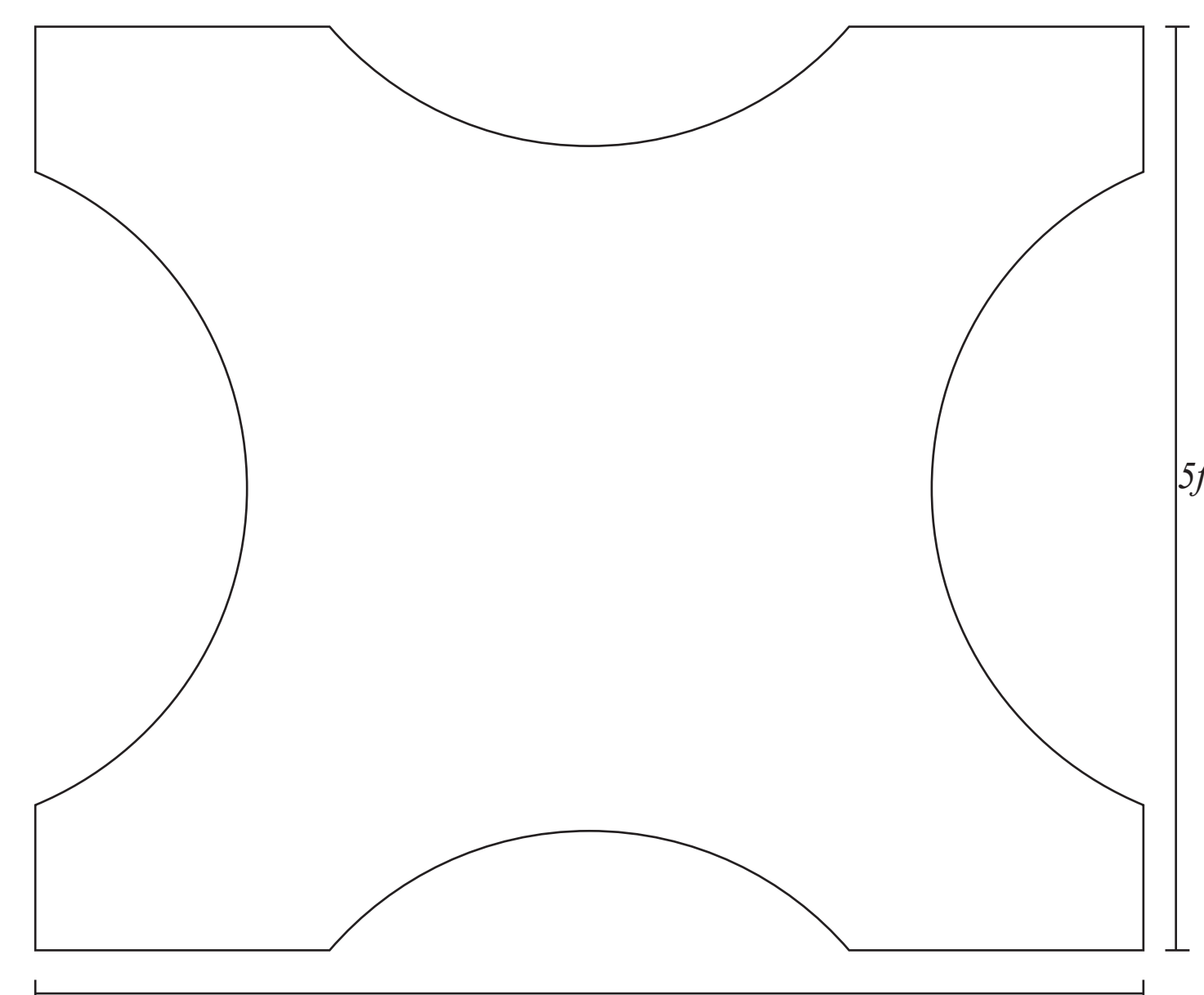
In 1997, Heinz Isler presented the paper *Is the physical model dead?*, at the IASS Structural Morphology Colloquium in Nottingham. In this paper, Isler questioned the fact that many architects and engineers are moving to digital models to design structure. "Today a huge effort is underway to create irrational and hence nonstructural shapes that are only possible because of highly sophisticated computer programs" (Billington 2003).

For this project, I wanted to experiment with the way Heinz Isler designs his shells. "Not the drawing board, not imagination, nor a mathematical formula but a physical model" (Chilton 2000). Therefore, I wanted to design and construct a shell without using a computer model, but only using physical models. To have an idea and purpose for the shell, I decided to build a shell where my dog could lay down and get some shade. I own a husky, so the shell had to be longer than 3 ft, wider than 2 ft and higher than 2 ft.

## Vaulted Lattice Systems



Tragsysteme: Structure Systems



First Full-Size Shell



Second Full-Size Shell

