Exploring New Frontiers in Lamp Design

Cristian Elvira Murciano’s Crescent Lamp is a stunning testament to the possibilities unlocked by combining parametric design with digital fabrication. Developed as the Final Project for Controlmad‘s Master course in Parametric Design & Digital Fabrication, this lamp showcases the power of algorithm-aided design and advanced fabrication techniques.



The Crescent Lamp’s distinctive curvy shapes are the product of extensive work with Grasshopper, a visual programming language integral to the design process.

By leveraging this tool, Cristian Elvira created a design that is both innovative and practi



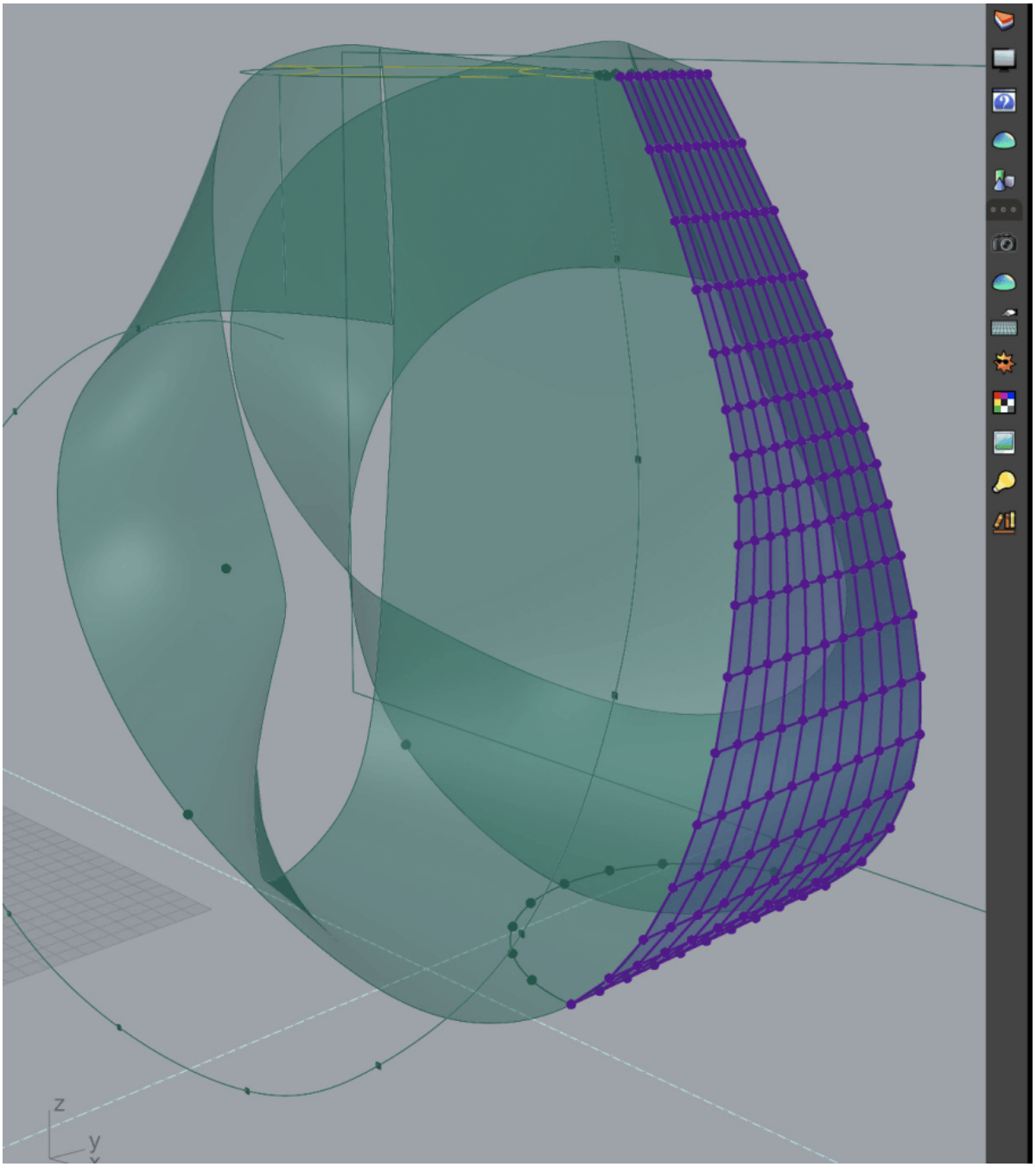
cal, embodying the harmony between minimal and developable surfaces.

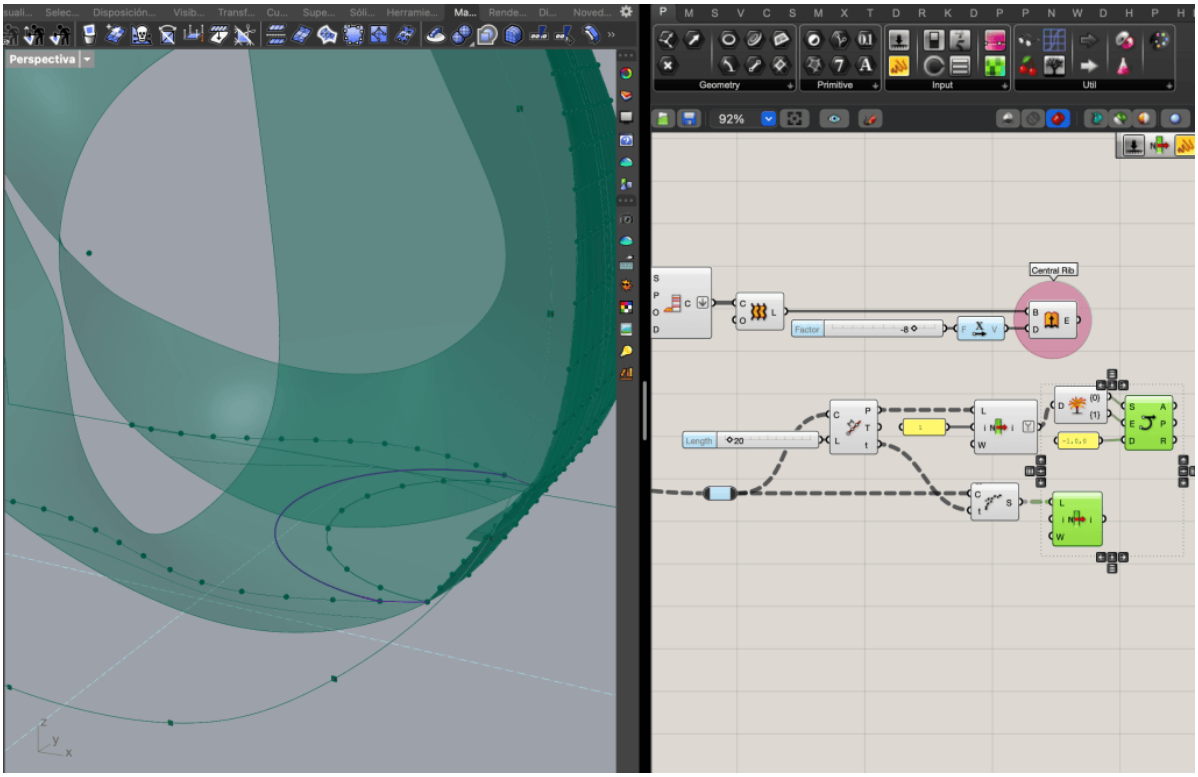
At the heart of the lamp’s structure is a planar surface that elegantly bends into an elliptical curve, forming the main wooden body. This body is supported by two ribs, crafted from red oak and plywood, forming a sturdy frame for the lamp’s shade.

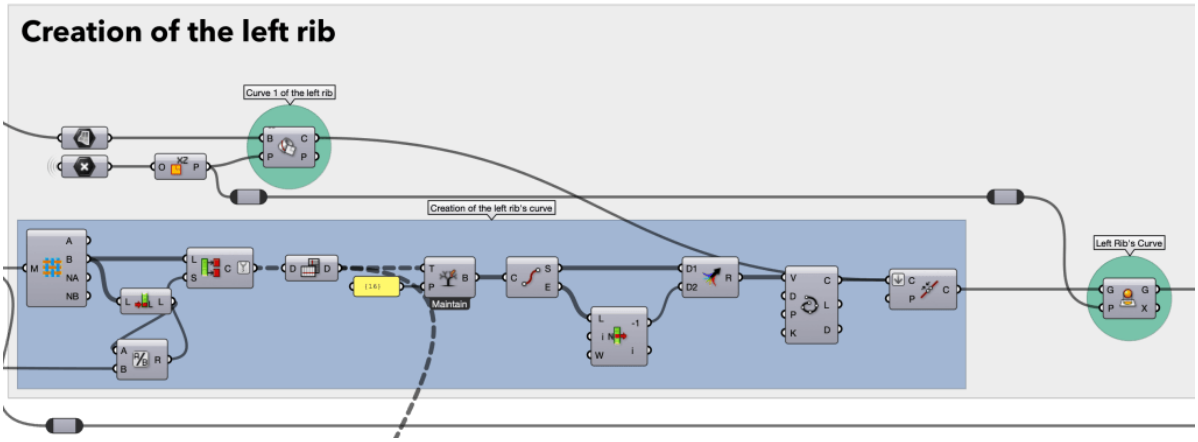
The shade itself, a flexible polymer textile, is crafted using the principles of minimal surfaces and shaped with the aid of the Kangaroo

plug-in for Grasshopper.

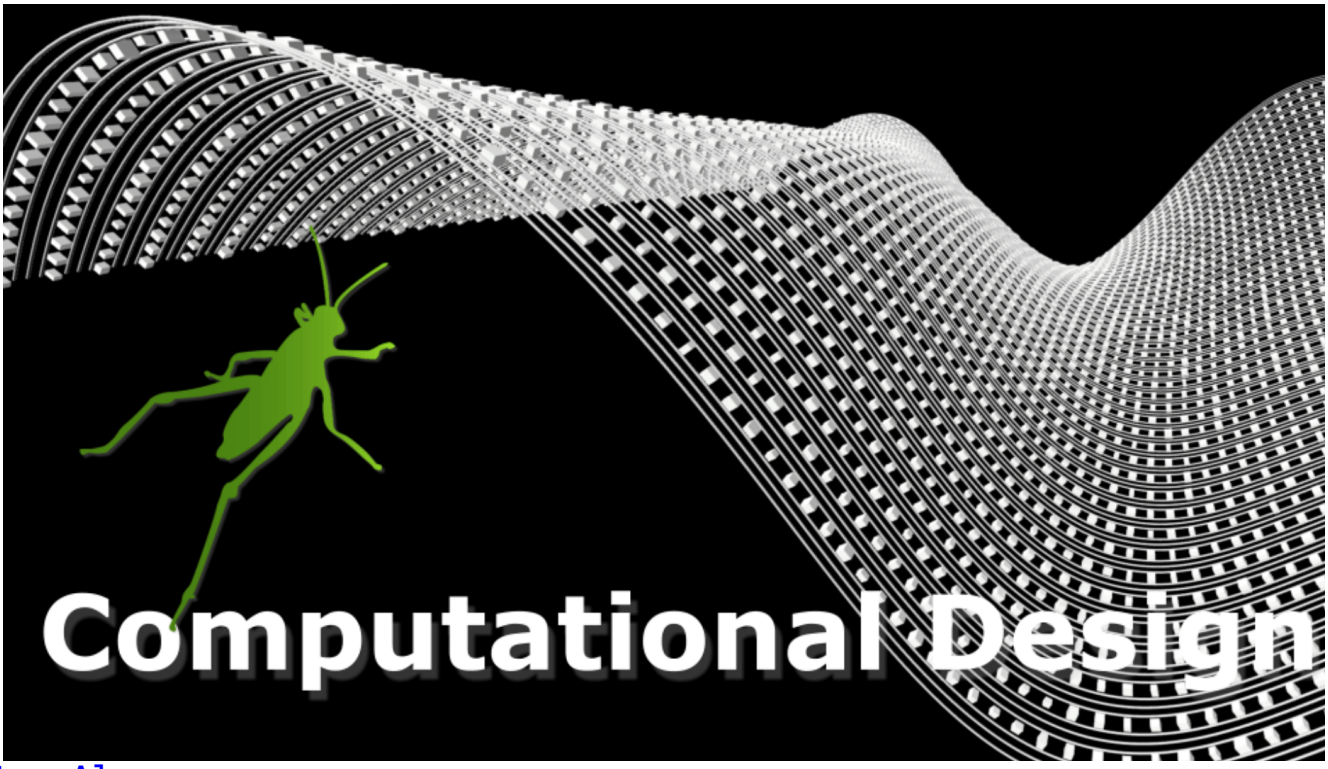
The result is a lamp that both provides illumination and serves as a piece of art, characterized by its moon-like side profile and the contrasting textures of oak veneer and soft polymer.

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The design process of the Crescent Lamp was entirely algorithm-driven, allowing for rapid iterations and precise adjustments. This method proved particularly useful during the production stages, such as laser cutting the precise holes needed for sewing the shade and securing the lamp to its socket.



See Also

COMPUTATIONAL DESIGN WITH GRASSHOPPER

The project utilizes three main digital fabrication technologies: laser cutting for the red oak sheet, CNC milling for the plywood ribs, and 3D printing for the components that house the electronics.



This multidisciplinary approach ensures that each part of the lamp is

made with the utmost precision and quality.



Controlmad, a FabLab based in Madrid, Spain, provided the ideal environment for th

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As an Authorized Rhino Training Center and FabStudio, it offers a range of workshops on Rhino3D and Grasshopper, blending research with creative practice. This dynamic setting enabled Cristian Elvira to push the boundaries of traditional lamp design, resulting in a piece that is as functional as it is visually striking.

The Crescent Lamp is more than just a lighting fixture; it is a demonstration of what can be achieved when innovative design tools and modern fabrication techniques come together. Cristian Elvira’s project exemplifies the future of design and manufacturing, where creativity is augmented by precision and efficiency.

