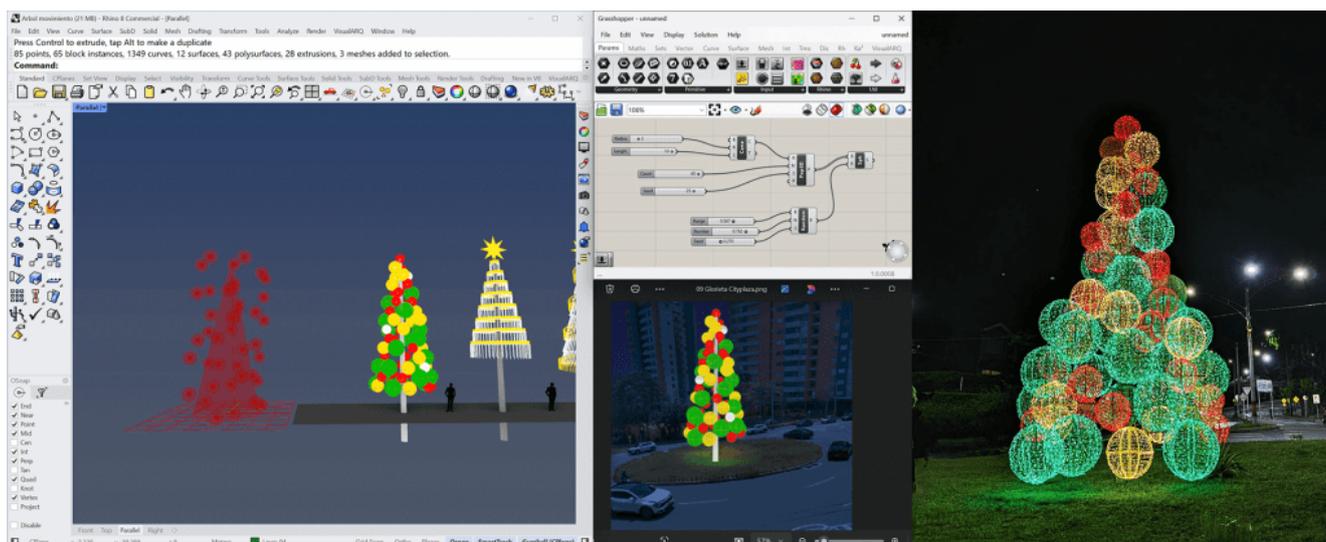


“Brilla la Tradición”: The 2024 Christmas Lighting Design in Envigado, Colombia

This past Christmas, the town of Envigado, Colombia, was illuminated with a spectacular display under the theme “*Brilla la Tradición*” (Shine the Tradition), celebrating the warmth and nostalgia of the holiday season. This public lighting project, which captivated locals and visitors, was not only a visual feast but also a remarkable example of the fusion of creativity, craftsmanship, and advanced design tools. The project aimed to revive traditional Christmas motifs with a modern touch, creating a festive atmosphere throughout the city while honoring Colombian cultural heritage.

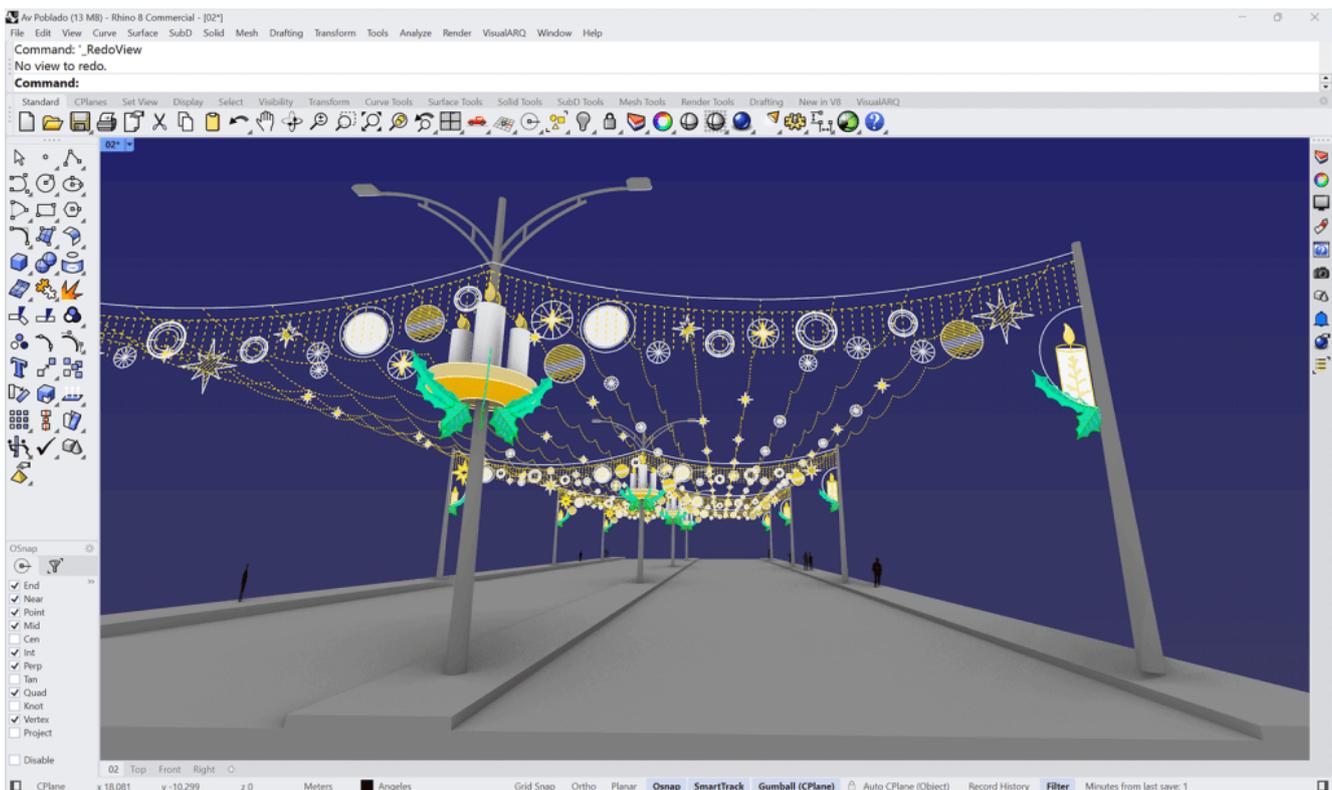


THE CREATIVE PROCESS: FROM CONCEPT TO 3D DESIGN

The lighting design project was developed by [NOJ Estudio](#), a multidisciplinary design studio with a focus on urban lighting. The studio began by researching global lighting trends and drawing inspiration from major light festivals worldwide, not all of which were specifically related to Christmas. This research informed the team’s approach to creating new interpretations of traditional Christmas symbols, like stars, trees, and angels, through a blend of industrial and artisanal techniques.

The process began with conceptual sketches and digital illustrations, which were then translated into 3D models using Rhino 3D and Grasshopper. This transition from analog to digital design was essential for refining the proportions and visual effects of the elements. The use of [Rhino](#) allowed for precise visualization and the creation of detailed technical drawings, while [Grasshopper](#) was instrumental in generating complex forms, like the large Christmas tree, which featured random-sized and colored balls.

For the tree, which stood 19.5 meters tall, an algorithm was created to randomly assign three different ball sizes and colors as the tree's height increased. This use of parametric design allowed for a dynamic structure that varied from bottom to top, providing a visually striking and unique effect. The ability to easily adjust parameters in Grasshopper facilitated quick decision-making, ensuring that the design process remained fluid and responsive to feedback from city officials.



PRODUCTION & TECHNICAL CHALLENGES

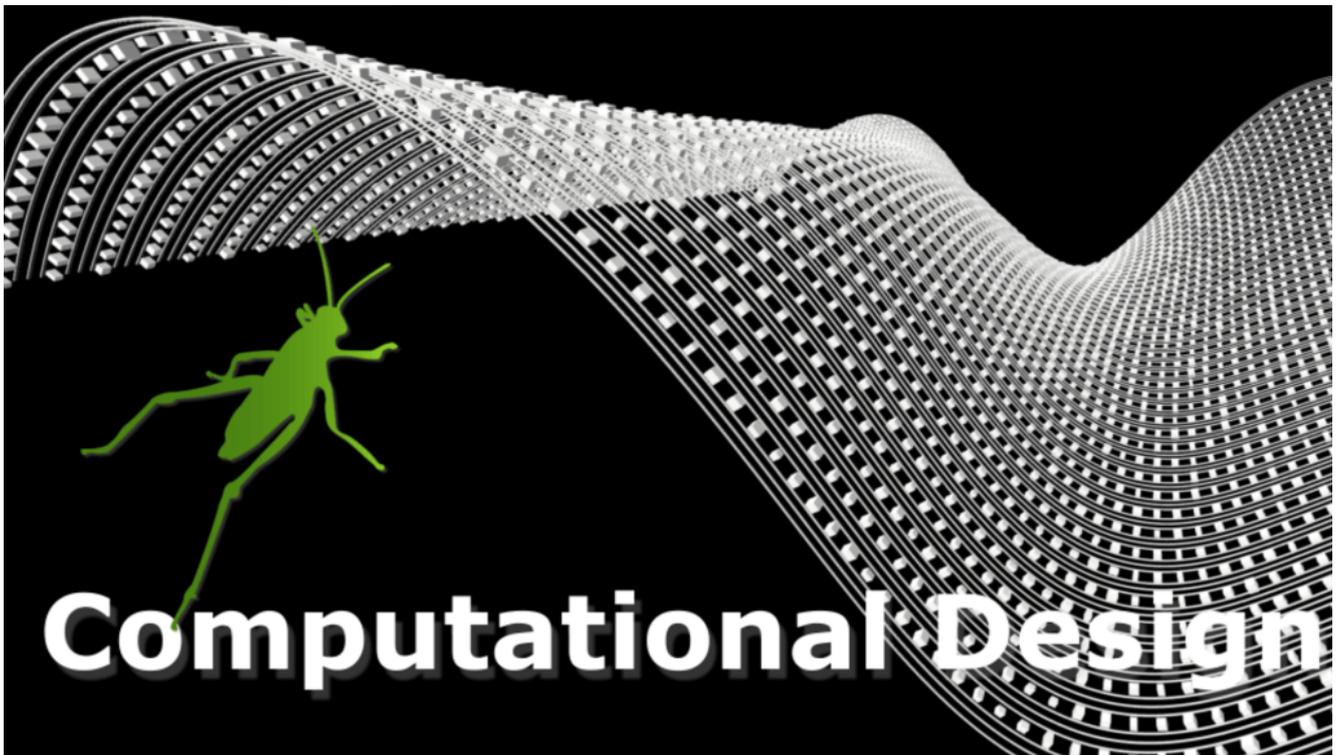
Once the design was approved, the project moved into the production phase, which involved extensive collaboration between NOJ Estudio, local artisans, and engineers. More than 4,500 figures were created,

using 5,000 meters of decorative fabric, 70,000 meters of LED tubing, and 35 tons of metal.

The production was highly manual, with 56 artisans working tirelessly to bring the designs to life. While the craftsmanship was essential to maintaining the tradition and charm of the project, it also required precise coordination and planning.

The project faced several challenges, particularly in terms of manufacturing efficiency. Some designs were simplified to make them easier to replicate on a large scale, such as stars and gifts, which had to be produced in quantities ranging from 70 to 200 units.

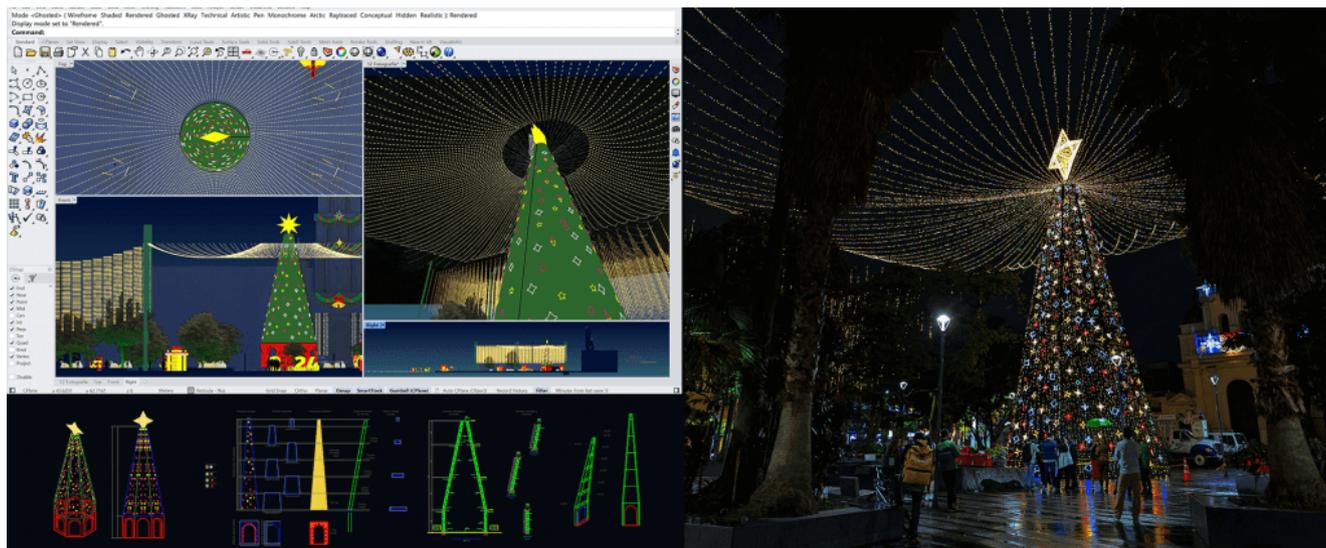
These rapid changes often necessitated updates to technical drawings, 3D models, and visual representations to ensure the entire team remained aligned. The integration of Rhino's 3D visualization and technical drawing features played a crucial role in keeping the production process on track and minimizing errors.



[See Also](#)

[COMPUTATIONAL DESIGN WITH GRASSHOPPER](#)

Additionally, the size and complexity of the installation meant that logistics were a constant challenge. The team used Rhino to model and simulate the entire city layout, allowing for the careful planning of how the lighting installation would interact with each urban space. This also helped define the scale and proportions of individual pieces, ensuring that the final installation would be both functional and visually cohesive across different streets and parks.

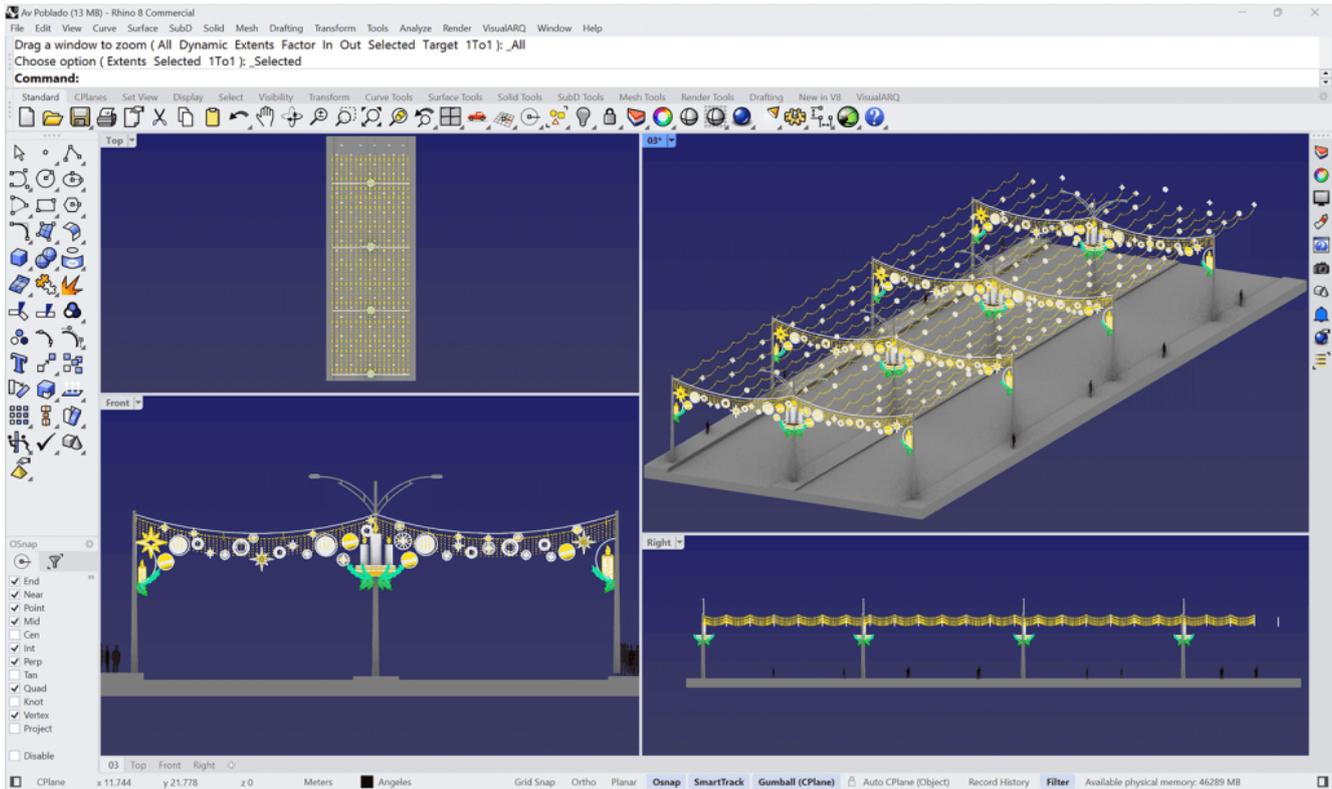


THE RESULT: A CITY TRANSFORMED

The *Brilla la Tradición* lighting design was a triumph, with installations stretching across various iconic locations in Envigado, including the main square, streets, parks, and several key intersections. The city was transformed into a wonderland of lights, featuring traditional symbols such as Christmas trees, wreaths, bells, and angels, all enhanced by the striking geometric and volumetric designs created in Rhino.

The centerpiece of the installation was the towering Christmas tree, an engineering marvel made possible through the advanced use of Rhino and Grasshopper. The tree's unique algorithm-driven design captured the spirit of innovation while staying true to the cultural essence of Christmas in Colombia.

The project successfully combined traditional holiday imagery with modern design tools, making it a celebration not only of Christmas but of the power of digital fabrication and computational design.



CONCLUSION

The 2024 Christmas lighting project in Envigado is a testament to the potential of design technology to transform public spaces and create lasting memories. Through the integration of Rhino, Grasshopper, and traditional craftsmanship, NOJ Estudio was able to produce a stunning display that honored both the traditions of the holiday season and the possibilities of modern design.

Despite the challenges faced, the project demonstrated how a thoughtful approach to design, coupled with the right tools, can overcome obstacles and result in a truly magical experience for the entire community.

This year's theme, *Brilla la Tradición*, was not just a lighting design project but a celebration of tradition, community, and the bright future of computational design.



CREDITS

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