

Origami, Shaping Colombia's Architectural Frontier Through Parametric Design

[Origami](#), a division of the [Demetalicos](#) group, stands as a trailblazer in Colombia's architectural realm, with its base in Medellín and a remarkable 43 years of experience. Utilizing parametric and algorithmic design, the company has redefined architectural possibilities and was recently awarded second place in Innovation at the Construction Industry by [Camacol Antioquia](#).

With a global reach spanning the United States, Dominican Republic, Panama, Peru, and Venezuela, Origami is transforming the industry's perception of design and construction.



TORRE VICTORY – PANAMA

The Torre Victory project exemplifies Origami's prowess in merging biomimicry with cutting-edge design. Comprising 875 pieces and resembling a mushroom's architecture, this structure posed many challenges in geometry, assembly, and volume generation.

Leveraging tools like Rhino and Grasshopper, Origami executed precise digital designs, ensuring an exact real-world replication. The meticulous coordination with production processes ensured a flawless execution.









FARMATODO – COLOMBIA

Farmatodo presented a unique challenge for Origami. Adapting standardized modules to irregular spaces required an intricate balance. The irregular areas, inspired by sea waves, necessitated adjustments in the parametrized initial module, allowing for efficient design and production.

This adaptation reduced waste by 25%, enhancing both costeffectiveness and production efficiency. Employing Grasshopper alongside plugins such as [LunchBox](#) and [Instance Manager](#) facilitated the complex welding processes and the color categorization, resulting in an aesthetically pleasing yet efficient outcome.



ESTADIO MARIANO RIVERA – PANAMA

The Estadio Mariano Rivera project posed distinctive challenges in managing a diverse range of pieces while optimizing material consumption. To achieve a dynamic, engaging facade through geometric optimization, extensive considerations had to be made regarding material depth and usage.

Plugins such as [TreeFrog](#) and [OpenNest](#) played crucial roles in managing data interpretation, optimizing material usage, and cutting plans in the production environment.



In their diverse projects, Origami has exemplified a commitment to innovation—leveraging the power of parametric design tools and technological acumen. From the advanced adaptations in Farmatodo to the intricate material optimization in Estadio Mariano Rivera, each project reflects Origami's dedication to efficient, aesthetically pleasing solutions.

Their strategic use of plugins and pioneering approaches sets a standard for architectural excellence, solidifying their position as leaders in the industry. They continue to push the boundaries of what's achievable in architectural design.