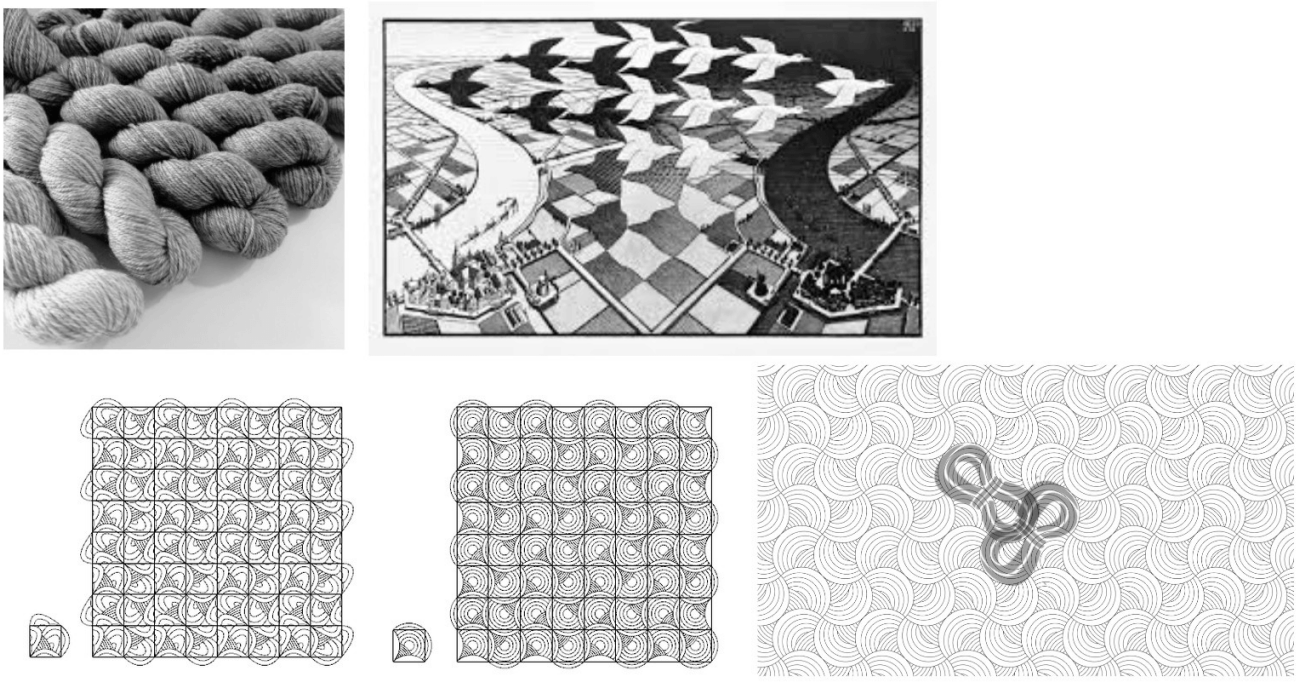
Ceramic Craft and Digital Fabrication at Hotel Thompson Sevilla

For Hotel Thompson Sevilla, Adriano Jiménez Guerrero developed a 50 m² ceramic lattice composed of approximately 900 individually 3D-printed pieces. The project brought together Rhino, Grasshopper and custom fabrication tools to connect parametric design, clay extrusion, production planning and on-site assembly within a single computational workflow. Producing such a large number of pieces within a short timeframe was made possible by the combined efforts of two 3D printing workshops: Adriano Jiménez and Innovarcilla

The design process began with hand sketches before moving into Grasshopper, where Jiménez developed a parametric system capable of generating 14 different ceramic geometries. The intention was not simply to repeat a single module, but to create gradual transitions across the lattice. Inspired by the visual logic of Escher-like transformations, the system shifts between pieces with almost square openings and increasingly curved geometries.

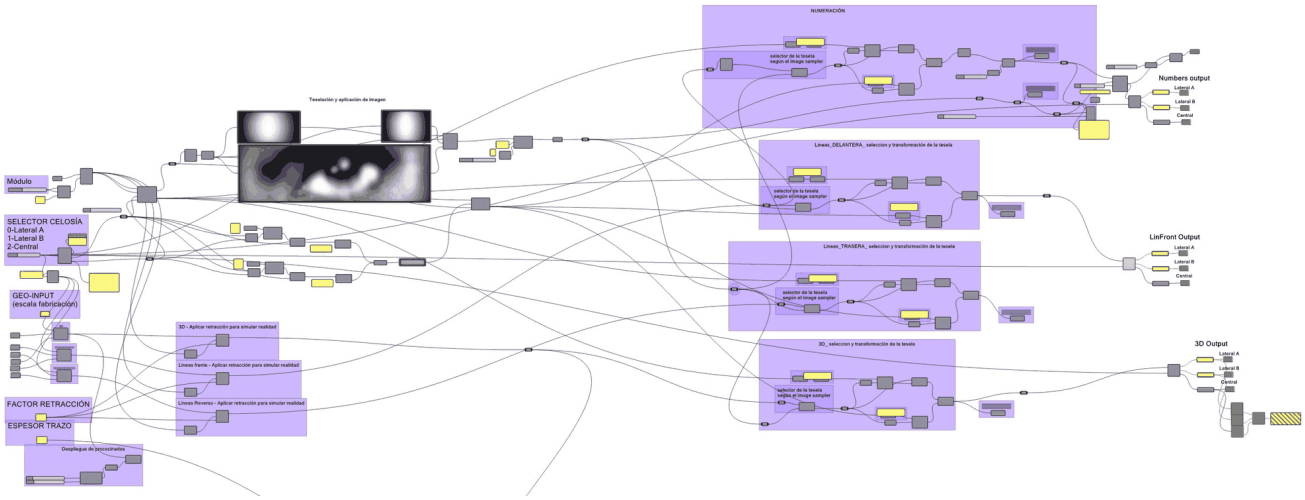


Early references for the project: skeins of wool, M.C. Escher's tessellating birds, and studies of the scalloped

module grid that guided the transition from square to curved geometries.

The distribution of those variants was controlled through Grasshopper's *Image Sampler* component. Grayscale values from source images determine which type of piece is placed at each position in the lattice. On the two lateral screens, a simple black-to-white gradient produces a gradual transition from square to curved geometries. The central screen follows a different logic.

Composed entirely of curved pieces, it uses an image of the eye of Andalusian artist Lola Flores as the sampling source. Variations in light and dark determine the relative opacity of the pieces, producing a larger pattern of light and shadow across the finished surface.



The Grasshopper definition Jiménez built to generate the ceramic family: an Image Sampler reads grayscale values from a source photo to select and orient each of the 14 module variants before exporting geometry, numbering, and G-code.

Grasshopper also extended beyond the generation and distribution of geometry. Jiménez developed a custom slicer inside Grasshopper that translated the ceramic forms directly into G-code, establishing a continuous path from the parametric model to fabrication. A conventional additive-manufacturing machine designed for polymer printing was adapted for clay extrusion, with additional components modeled in Rhino and 3D printed in plastic.



The 14 ceramic geometries generated in Grasshopper, ranging from an almost-square opening to a fully curved form, laid out in the sequence used to distribute them across the lattice.

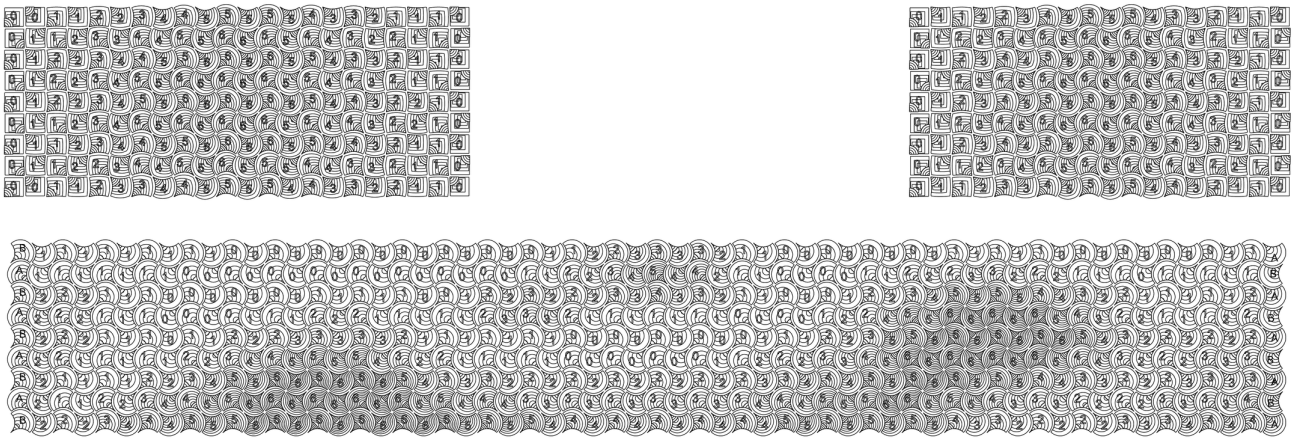
That digital-to-physical translation required continuous adjustment. Fresh clay does not behave like a stable industrial printing material: its humidity, consistency, and softness affect how far a piece can be pushed geometrically before it deforms or becomes difficult to print.

Rather than treating fabrication as a final step after design, the project developed through repeated feedback between the digital model, the extrusion process and the mechanical limits of the material. Geometry and production parameters were refined together, while fabrication time and budget also influenced what could be produced at the scale required for the installation.



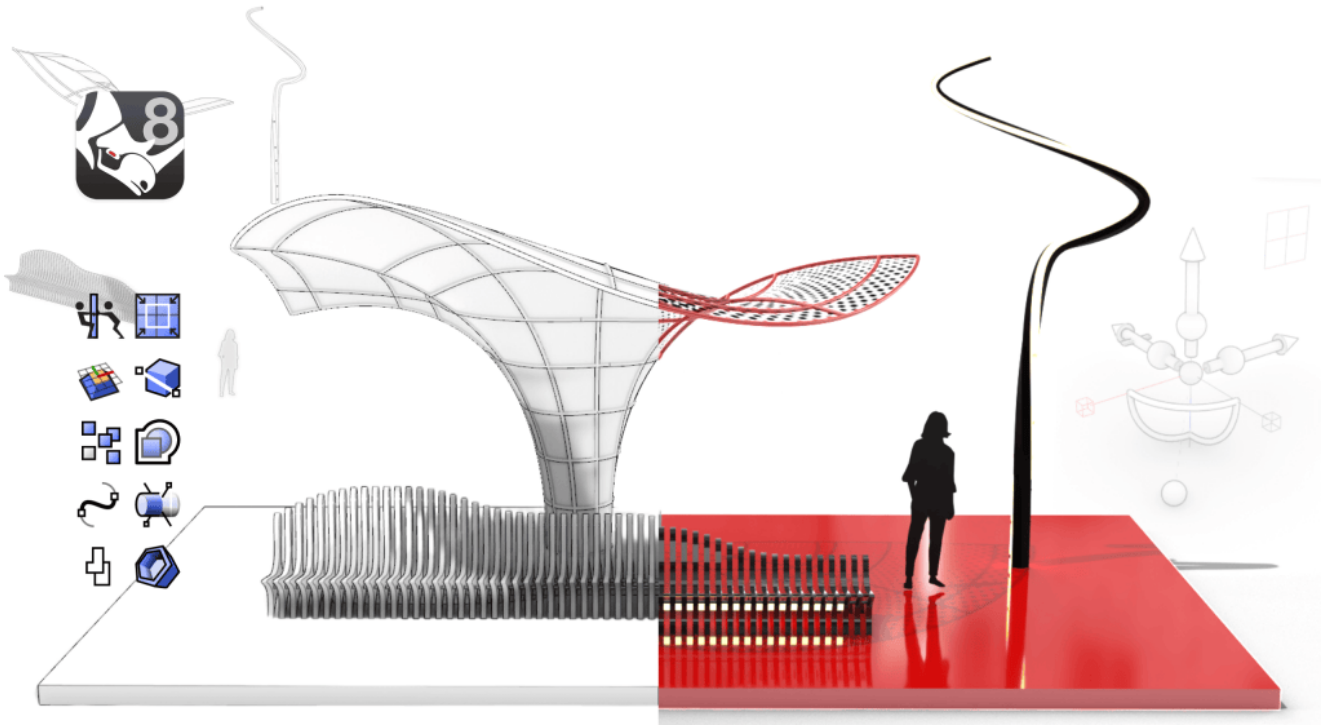
On-site assembly: the installation team mortars each 3D-printed piece into place, following the row-by-row sequence laid out each morning from the Rhino-exported plan.

This relationship between computational control and ceramic production was central to the project. The aim was not to replace an artisanal process with automation, but to use digital tools to organize variation and make a large family of related ceramic pieces viable at architectural scale. Jiménez handled the design, computational development, and much of the fabrication, while Fundación Innovarcilla helped produce many of the pieces.



The elevation drawings exported from Rhino, with every one of the roughly 900 pieces numbered by type and position, used to organize the row-by-row assembly on site.

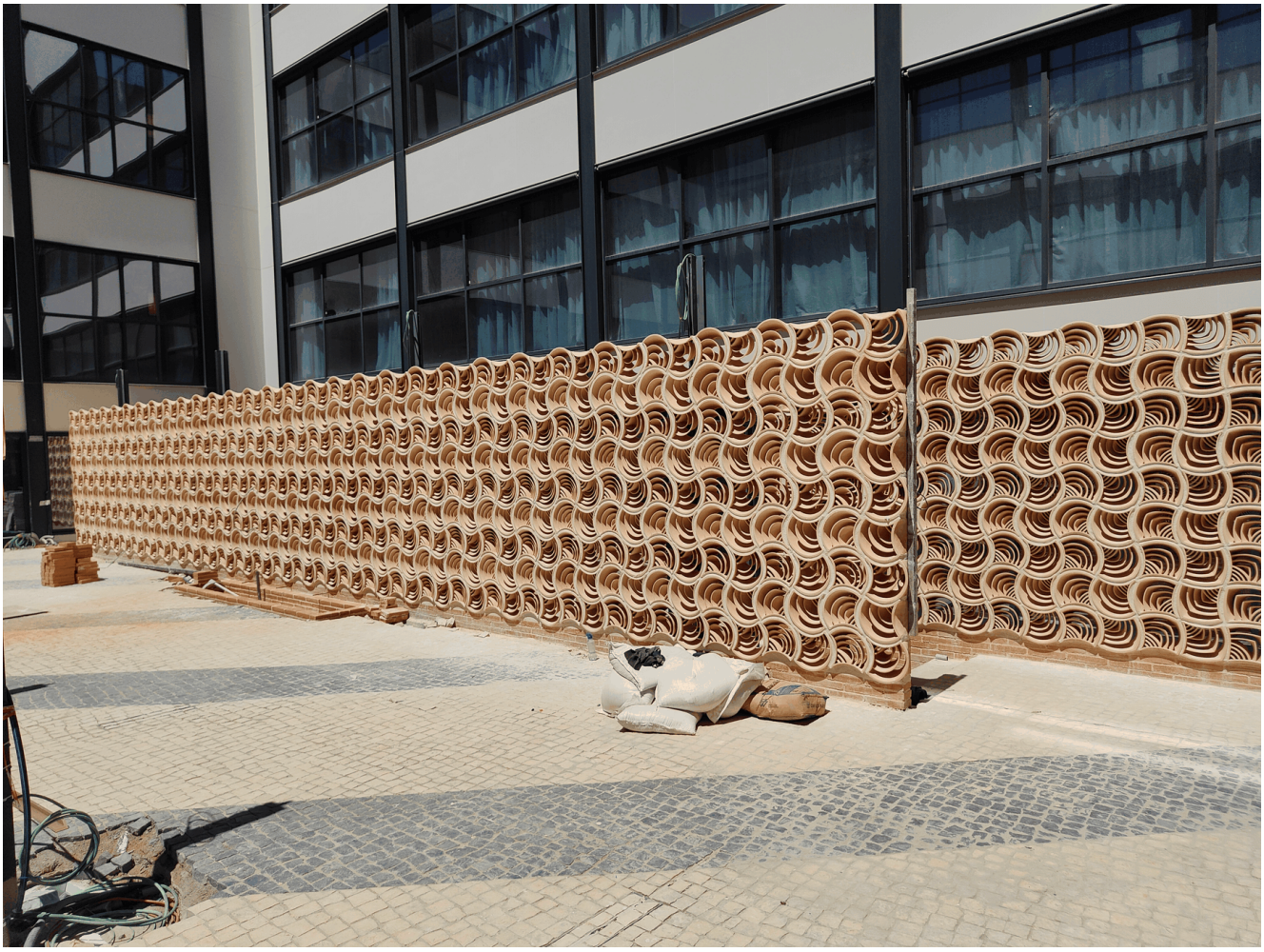
Managing roughly 900 unique placements created another layer of complexity once fabrication was complete. The pieces were transported to site in boxes labeled by type and grouped into separate stacks. Installation was coordinated from a plan exported from Rhino.



See Also

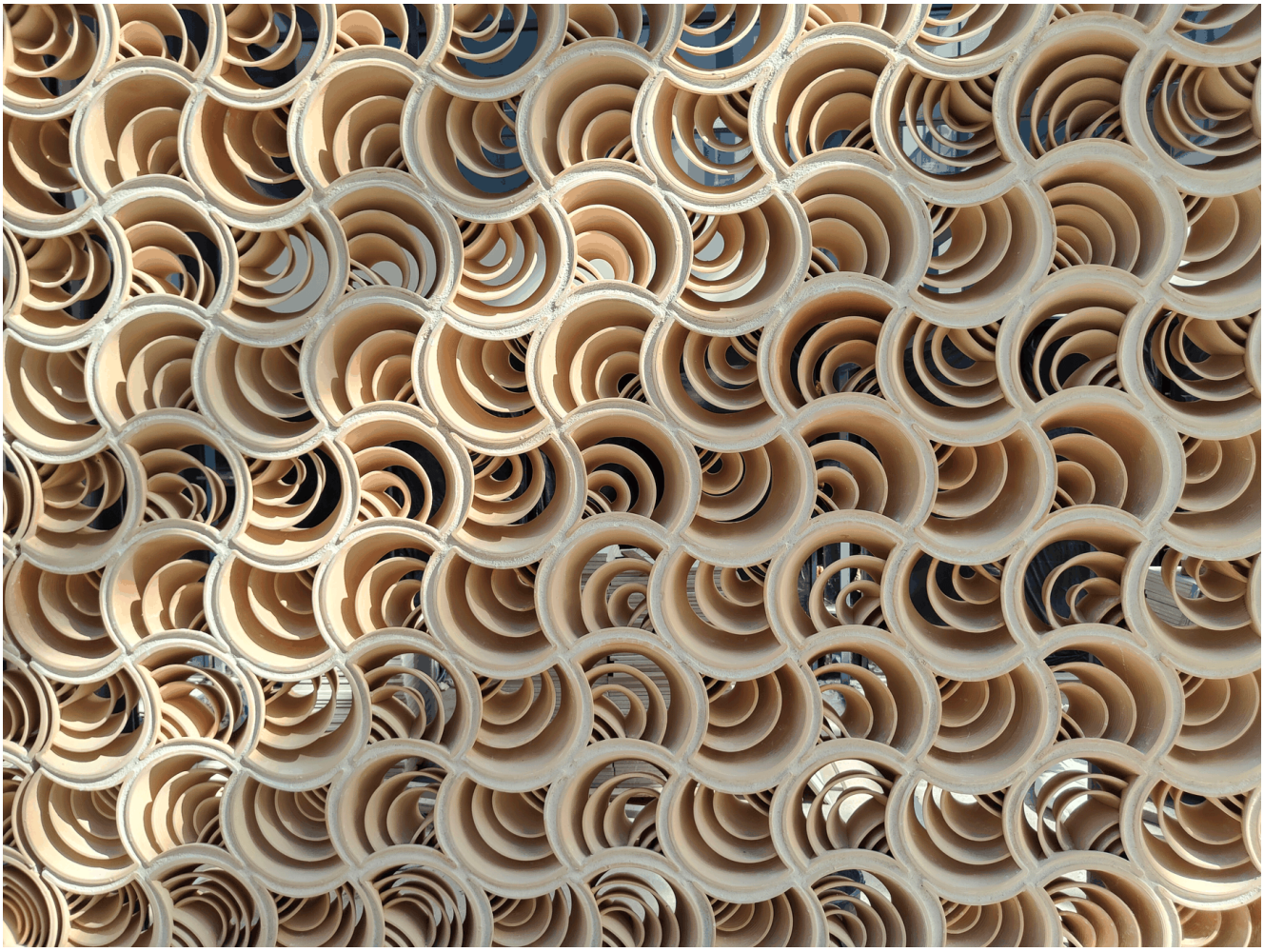
RHINO 8 INTERMEDIATE

Each morning, the team laid out a complete horizontal row on the ground beside the lattice according to the drawing, checking the correct piece type and orientation in advance. The installation team then transferred each piece directly from this prepared sequence to its corresponding position on the wall.



One of the two lateral screens fully installed, showing the gradual transition from square to curved geometry produced by the black-to-white gradient mapped through the Image Sampler.

The finished lattice is therefore the result of more than a parametric façade pattern. Rhino and Grasshopper were used throughout the project, from defining the ceramic family and mapping its variants using image data to generating G-code, adapting the machine, planning fabrication, and producing the drawings used to organize assembly on site.



Detail of the finished lattice in raking light, highlighting the layered, scalloped cross-section of the individually 3D-printed clay pieces.

The project shows how a computational workflow can extend into the practical realities of working with clay: coordinating hundreds of physical parts and building a large-scale ceramic installation without separating digital design from making.

CREDITS

Design, direction and computational development: Adriano Jiménez Guerrero
Fabrication: Adriano Jiménez Guerrero, with Fundación Innovarcilla collaborating on production of a significant portion of the ceramic pieces
Project: Hotel Thompson Sevilla, Plaza de la Gavidia, Seville,

Spain