PERFORATE™

Parametric Patterning

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Patterns

Perforate is not a catalog of patterns

It's a parametric design system that allows us to generate, manipulate, and fabricate unique perforated metal surfaces at architectural scale

- Unique patterns without the risk and lead times of "custom"
- Fabrication-ready designs
- Walls, ceilings, dividers, column covers and facades

How it Works

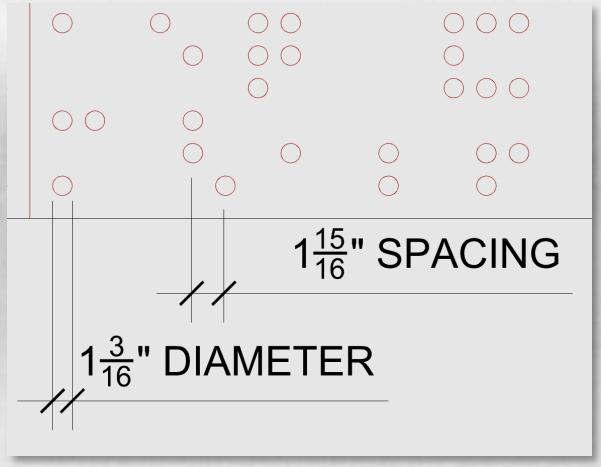
Patterns generated from rules and inputs

Inputs we can control:

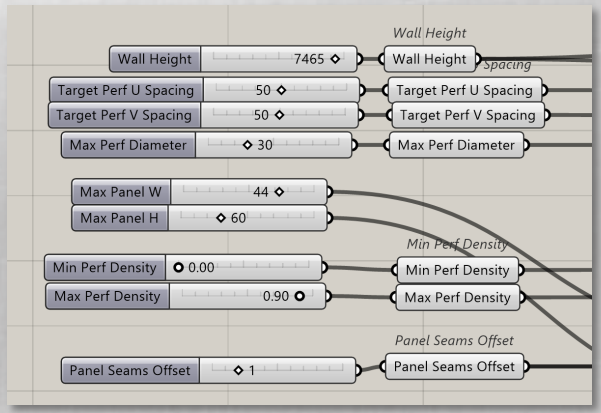
- Hole size, shape, and density
- Panel size and layout
- Gradient behavior (dense → open)
- Image, map, or geometry source
- Open area targets (acoustics, lighting output, airflow, code)

Output:

- Fabrication-ready parametric models with pricing and spec details



Granular control over perforation sizes, shapes and density



Programmatic control over key project and system variables

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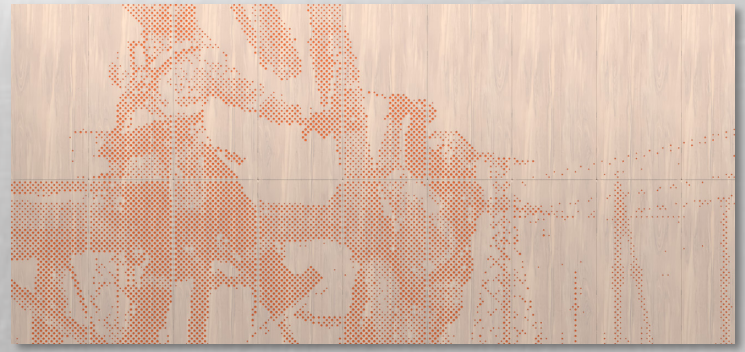
Pattern Families

Image-Based Patterns

Patterns derived from imagery and translated into perforation logic

- Raster images: JPG, PNG, TIFF (photography, textures, scans)
- Vector graphics: AI, EPS, SVG, PDF (logos, linework, branding)
- High-contrast graphics: Black/white or grayscale artwork optimized for clarity
- Photographic imagery: Landscapes, people, objects, abstract photos
- Scanned artwork & hand drawings: Sketches, illustrations, analog artwork
- Brand assets: Logos, wordmarks, graphic motifs
- Generated imagery: AI-generated art, renders, or computational graphics

Original inspiration JPG image



Perforated pattern in a wood grain finish, panelized for wall size

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Maps and Street Grids

Patterns generated from real-world location-based datasets

How We Source the Pattern

- Public mapping platforms (Google Maps, etc.)
- Client-provided plans, diagrams, or campus maps
- CAD or vector linework (DWG, DXF, AI, PDF)
- Screenshots, scans, or historical references

How We Model the Pattern

- Source data translated into parametric rules
- Lines and zones drive hole size, spacing, and direction
- Density and gradients tuned across the surface
- Pattern coordinated across panel seams
- Output optimized for fabrication, structure, and open area

Original Lower Manhattan Street Map

Panelized Perforate Street Map

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Austin, TX Map Area
GFFdesign
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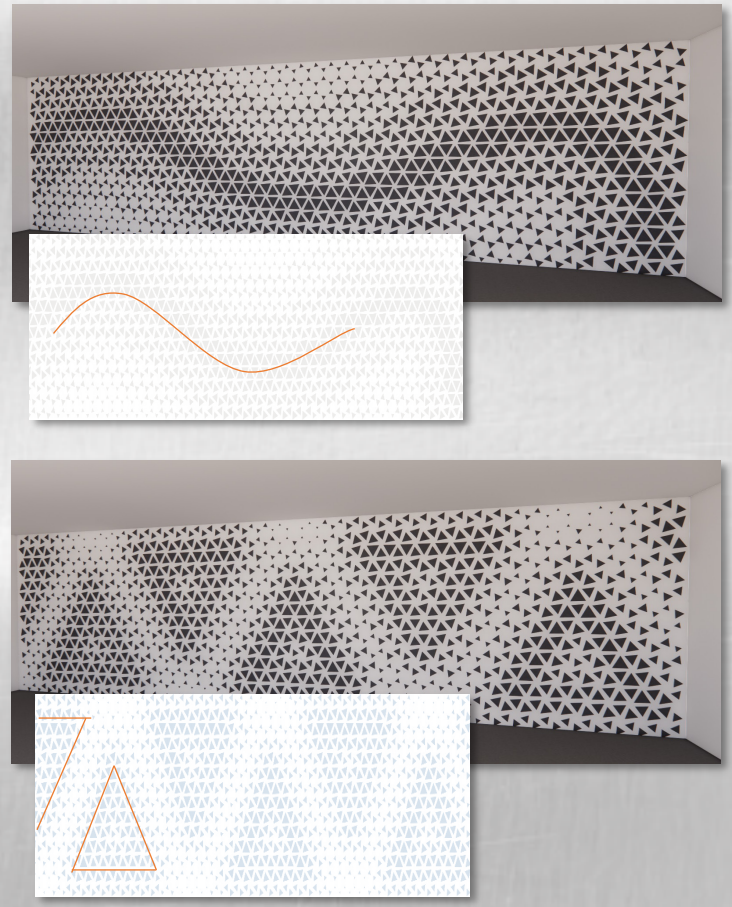
Responsive Triangles

A dynamic, parametric pattern that brings motion and depth to architectural surfaces

- Pattern begins with a continuous triangular grid
- Individual triangles can scale, rotate, and shift within the grid
- Transformations are driven by one or more attractor curves
- Proximity to the attractor curve controls intensity of change
- Creates gradients of density, motion, and visual depth
- Variables tuned for resolution, openness, lighting, and acoustics
- Pattern flows seamlessly across panels, walls, and ceilings



Attractor Curves change density and rotation of triangles to create unique patterns

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Flow

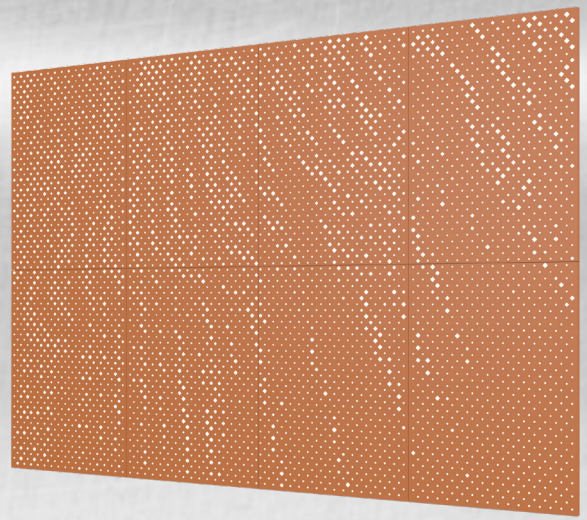
A parametric pattern that expresses movement through linear variation

How Flow Works

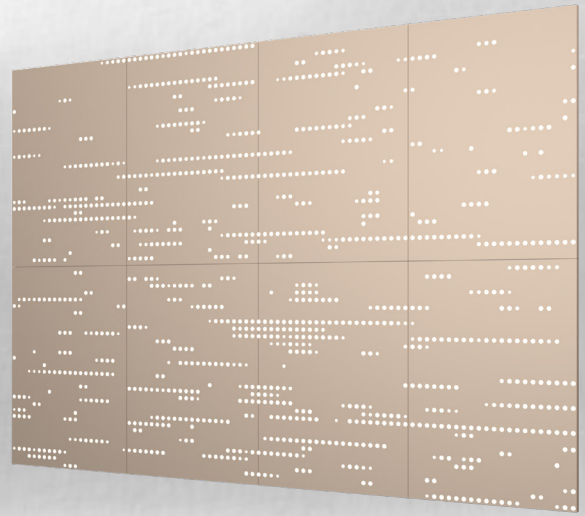
- Pattern is generated along directional or linear paths
- Perforation size, spacing, and alignment can vary
- Movement can be subtle or expressive
- Lines can bend, stretch, compress, or fade
- Pattern remains controlled and fabrication-ready

What Designers Can Control

- Direction and orientation of flow
- Degree of variation and contrast
- Open area for light, airflow, and acoustics
- Pattern resolution and panel scale



Radiant Flow



Linear Flow

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Field Waves

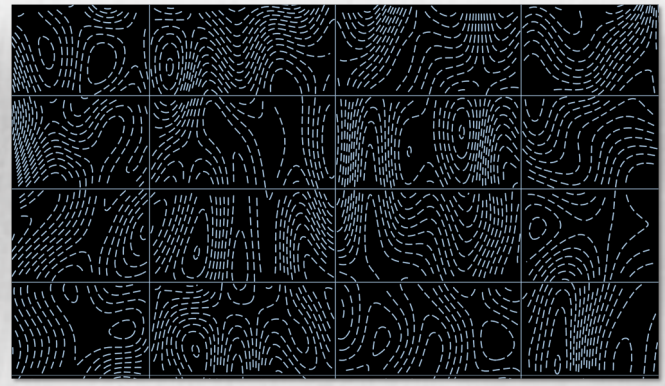
A continuous field producing ripples, currents, and wave interference that feel organic and immersive

How Field Waves Work

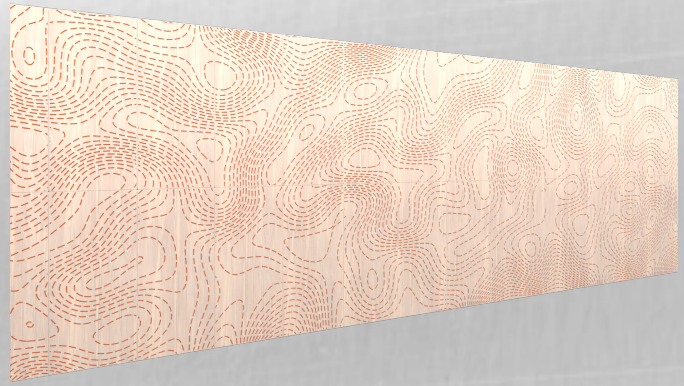
- Pattern generated from wave-based parametric logic
- Perforations follow curved, flowing paths rather than discrete holes
- Line density and spacing vary to create movement
- Waves propagate across the surface as a field

What Designers Can Control

- Overall intensity: calm and subtle to bold and expressive
- Wave scale, frequency, and overlap
- Open area for light transmission, airflow, and acoustics
- Line thickness and contrast



Random EM field waves



More purposeful topological or field effects

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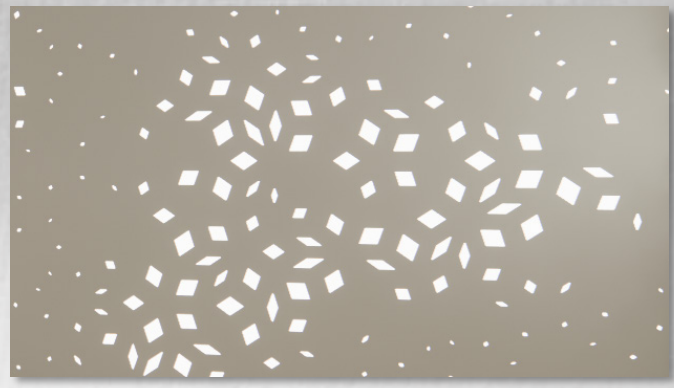
Computational Geometry

Computational Geometry patterns are generated using mathematical and algorithmic rules that would be extremely difficult to design otherwise

Pattern Types

- Non-repeating or quasi-periodic patterns
- Penrose tiling and non-periodic tessellations
- Recursive and fractal-inspired patterns
- Rule-based tiling systems
- Algorithmic fields and distributions
- Geometry that evolves across a surface



Penrose Tiling

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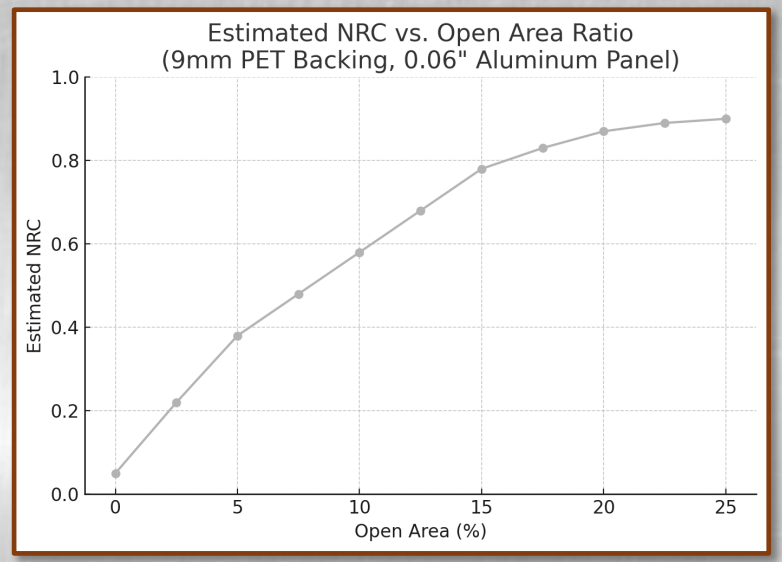
Performance Patterning

Parametric design gives you the power to not only create a tailored Perforate system, but it also allows you to control the pattern to meet functional performance requirements

Variables Within Our Control

- Open area % (airflow, code, structure)
- Acoustics (with felt or backing)
- Light transmission (backlit)
- Sightlines and privacy
- Budget
- Fabrication efficiency



Acoustic performance based on open area % and PET backing

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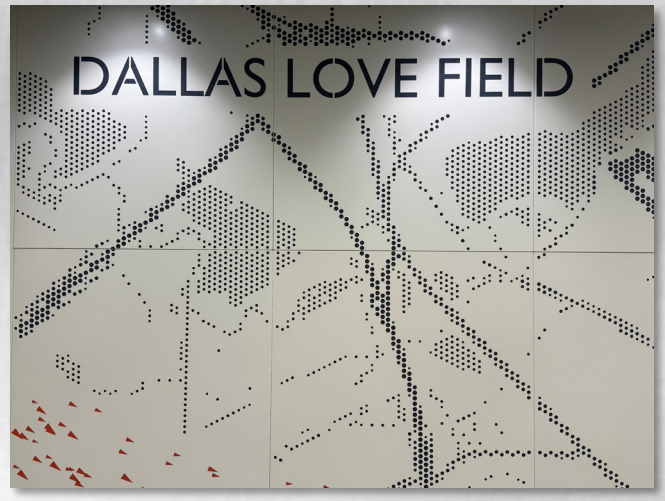
Working With Andalusia

Andalusia will provided dedicated design resources for your project, regardless of size. We will provide support and iterations until you're satisfied with the final design,

Services:

- Concept pattern studies (early)
- Budget-aligned iterations
- Fabrication-ready pattern files
- Shop drawings and coordination
- Revit models and spec package
- Integrated lighting & acoustic studies



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HIGH DESIGN MEETS DIGITAL FABRICATION

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