

Biophilic Fractal Design & Sensory Audit Worksheet

Harnessing the 1.3-1.5 D-Value Rule to Downregulate Autonomic Stress in Domestic Spaces

1. Fractal Geometry (D-Value) & Visual Cortex Processing

Fractal Class	D-Value (Dimension Range)	Neurological & Physiological Response
Low-Dimension (D = 1.1 - 1.2)	Sparse, simple branching (e.g., bare saplings)	Low visual interest; minimal autonomic impact.
Statistical Mid-Range (D = 1.3 - 1.5)	Natural wood grain, clouds, coastlines, ocean waves	OPTIMAL RESONANCE. 60% increase in alpha brainwave power; instant parasympathetic activation.
High-Dimension (D = 1.7 - 1.9)	Hyper-dense grids, circuit boards, cross-hatching	Visual stress, ocular saccadic fatigue, and elevated cognitive discomfort.

2. Room-by-Room Biophilic Texture Integration Plan

Surface / Element	Natural Material Substitution	Sensory Stress Reduction Impact
Primary Flooring / Rugs	Swap synthetic polypropylene for 100% undyed wool or textured sisal.	Eliminates flat specular reflection; provides organic tactile feedback.
Casegoods & Tables	Opt for solid end-grain or cathedral wood grain over faux plastic laminate.	Presents natural 1.4 D-value fractal patterns directly in resting gaze.
Window Treatments	Replace vinyl blinds with natural slubbed open-weave Belgian linen.	Diffuses harsh daylight into organic dappled shadows mimicking tree canopies.