

# Design in Nature: How the Constructal Law Governs Evolution in Biology, Physics, Technology, and Social Organization

Adrian Bejan

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# **Design in Nature: How the Constructal Law Governs** Evolution in Biology, Physics, Technology, and Social **Organization**

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In this groundbreaking book, Adrian Bejan takes the recurring patterns in nature—trees, tributaries, air passages, neural networks, and lightning bolts—and reveals how a single principle of physics, the Constructal Law, accounts for the evolution of these and all other designs in our world.

Everything—from biological life to inanimate systems—generates shape and structure and evolves in a sequence of ever-improving designs in order to facilitate flow. River basins, cardiovascular systems, and bolts of lightning are very efficient flow systems to move a current—of water, blood, or electricity. Likewise, the more complex architecture of animals evolve to cover greater distance per unit of useful energy, or increase their flow across the land. Such designs also appear in human organizations, like the hierarchical "flowcharts" or reporting structures in corporations and political bodies.

All are governed by the same principle, known as the Constructal Law, and configure and reconfigure themselves over time to flow more efficiently. Written in an easy style that achieves clarity without sacrificing complexity, Design in Nature is a paradigm-shifting book that will fundamentally transform our understanding of the world around us.



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