Architecture Follows Nature

The subtitle of the volume “Biomimetic Principles For Innovative Design” sums up the research of the author presented in this book. Biology influences design in many ways, through the discipline known as “biomimetics.” Using the animal kingdom as a direct source of inspiration, Ilaria Mazzoleni – in collaboration with the biologist Shauna Price – suggests, with the aid of scientific evidence, a possible change in our way of thinking about the application of biological principles to design and architecture. Starting with analysis of how organisms adapt to different environments, the study focuses on how animals have translated the principles learned from different contexts into their protective habitat. The parallels between the skin-cladding of animals and ‘architectural skin’ lead to examination of twelve case studies of great interest. The chosen cases - the Chrysolepis hippaeus butterfly, the Aglaoscopus coelestis (a bird), the Elyssia crispata seaweed, the desert lizard Uta stansburiana, the snow leopard Panthera uncia, the polar bear Ursus maritimus, the slug Ariolimax columbianus, the Dendrobates tinctorius frog, the Pisaster ochraceus starfish, desert scarab beetles, the pangolin and the hippopotamus – are analyzed for their specific properties of communication, thermal regulation, hydronic balancing and protection, leading to possible ‘design translations’ in the world of architecture. A fascinating voyage that underlines how much we can still learn from nature by observing it with scientific curiosity and design creativity.

(Matteo Vercelloni)