

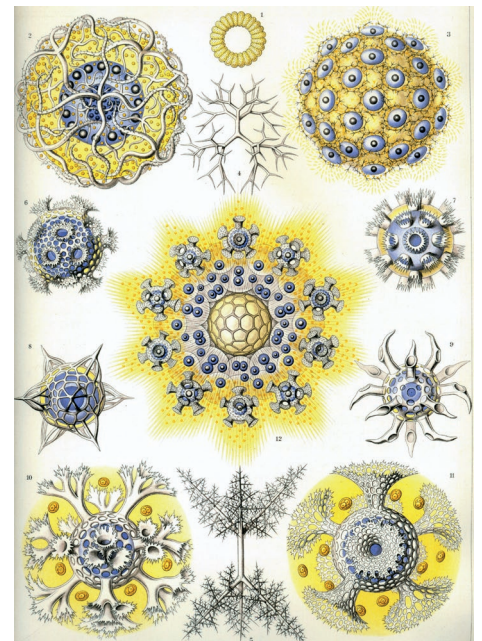
Landscape and Bioaesthetics FS 2021 V08

"Subvisible microscopic animal structures called radiolarians are developed by the same mathematical and structural laws as those governing the man-designed geodesic and other non man-designed spheroidal structures in nature."

Richard Buckminster Fuller: Conceptuality of Fundamental Structures, p.80.

The term bioaesthetics is quite new and awkward in its meaning because it refers to an unprecedented situation in architecture, urban design, landscape architecture and the arts in which nature has become codified and analyzed using a mix of structural topologies and archetypes sometimes completely immersed in high tech. The aesthetic of natural forms draws originally from the works of the 19th century German Biologist Ernst Haeckel whose illustrated book "Kunstformen der Natur" inspired the architecture of generations of designers such as Antoni Gaudi and Rudolf Steiner with its strong biological analogies. These architects delighted in the mimesis of natural forms, the organic structures of which became inspiration for a more harmonious architecture thought to be in communion with nature. This, in turn, later influenced the expressionist modernist architecture of architects like Erich Mendelsohn.

But it is only much later, at the onset of the environmental movement in the 1960s that a truly organic form of "bioaesthetic" design made its appearance, seeking further integration between the built and natural environments through mathematical formulae and applications in design. This later led to the development of Benoît Mandelbrot's fractal theory and its application in organic design. Today, Ernst Haeckel can still be understood as the father of ecology, since he first coined the term to encompass the comprehensive science of the relationship of the organism to its environment. Through his early work on microscopic radiolarians Haeckel inspired entirely new forms of design that replicated those in nature but in a more structural way. Richard Buckminster Fuller, father of the geodesic dome, was also strongly inspired by such organic analogies with microscopic radiolarians. From such inspirations he also derived the geodesic dome, which became the hallmark of the 1960s. He even envisaged the project to go so far as to entirely cover parts of Manhattan Island with a geodesic bubble to protect it from pollution. The notion of architecture and landscape living under a single "cellular" membrane has now become quite commonplace, but it finds its origins in the environmental idealism of the mid-20th century.



Ernst Haeckel, Kunstformen der Natur,
Tafel 51: Polycyttaria, 1904.

But what interrogates landscape today is rather the theory developed by Bruno Latour and his writings on “quasi objects”(Latour 2006) in which the boundaries between building and landscape are blurred and green “ecological” buildings rival in invention with parks or gardens. From extensive “ecological” town concepts such as Masdar in the desert of Abu Dhabi in the United Arab Emirates to the green walls by the French botanist Patrick Blanc or the individual Vertical Forest building by Stefano Boeri in Milano, we are being increasingly confronted with a vertical landscape of another age, midway between science fiction and fashion. Even the most recent and important American corporate headquarters are now responding to the bioaesthetic trend very strongly, driven by the logic that the more they build and sprawl, the more they should appear to be green. It is, therefore, important to understand the different degrees of naturalness that are to be felt and seen through the bioaesthetic palette. The examples shown today point to a common denominator – they are certainly all luxuriant and green – but whether they really are sustainable, only time will tell.

For now, we need to learn how to live with these newly created forms of nature and understand how to cope with the constraints currently at stake. This requires not only a new understanding of the current bioaesthetic appeal, but also a new vision of what landscape has come to be.

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Google's California Headquarters in Mountain View, BIG architects and Heatherwick Design Version 1, 2014.

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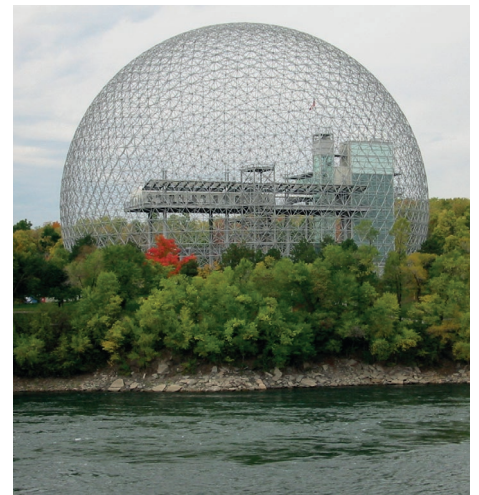
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Biosphère for the Expo 67 in Montreal by Richard Buckminster Fuller.