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**Biornametics - architecture defined by natural patterns**

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BIORNAMETICS - Architecture Defined By Natural Patterns explores a new methodology to interconnect scientific evidence with creative design in the field of architecture. It takes on the history of one of the composed parts of this word ornament" referring to Adolf Loos and extends into another: "biomimetics". The "New Ornament" as an emerging contemporary design practise based on digital techniques that assembles from controlling programs and codes, less concerned with serial rationality but with algorithmic, digital operations and connecting the processes of planning and production.

Biomimetics is the strategic search for nature's solutions in order to gain innovation.

Intrinsic to "design" in nature are efficiency and intelligence. The hypothesis underlying

this strategy is that living nature has evolved in a process of continuing adaptation to a

complex changing environment, and that the exploitation of highly optimised solutions is likely to deliver innovations, that provide more intelligence and better efficiency than our standard methods.

Role models from nature, static and dynamic patterns (e.g. growth principles, movement

patterns, adaptation and differentiation as key for emergence of patterns etc.) are investigated and the findings applied to design strategies. The emergence of patterns in

nature at all scales of existence of organisms as one of the most important signs of life –

order – is not arbitrary, but highly interconnected with boundary conditions, functional

requirements, systems requirements, material and structure.

The main objectives are the exploration of aesthetic and functional interpretation for a new architecture together with the utilisation of new manufacturing technologies, and elaboration of the biomimetic design method and the "New Ornament".

Keywords: arts-based research, patterns from nature, bioinspiration, biomimetics