# THE STUDIES OF THE IMPACT OF BIOMIMICRY AND SUSTAINABILITY ON URBAN DESIGN

## (URBAN DESIGN SOLUTIONS INSPIRED BY NATURE)

A THESIS

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# IV.ABSTRACT

In this thesis, biomimicry is defined as imitating or taking inspiration from nature's forms and processes to solve human problems (Benyus, 1997). As the design community realizes the tremendous impact human constructions have on the world, environmental designers look to new approaches like biomimicry to advance sustainable design. Building upon the claim made by biomimicry scientists that a full emulation of nature engages form, ecosystem, and process, this thesis uses a logic approach to interpret human and environmental wholeness. (Lance Klein 2009). This research broadens biomimicry's scientific and technical focus on nature and considers how wholeness can be found among form, ecosystem, and process; and between people and environment. The thesis argues that, without a deeper, more responsive connectedness among people, nature, and built environment, any proposal for urban sustainable design will ultimately be incomplete and thus unsuccessful. (By Lance Klein 2009).

Designers would benefit from both integrating social theory with environmental thinking and from combining their substantive skills with techniques for getting sustainable biomimic urban design. Integrating biomimicry′ s "Life's Principles" into a built environment process model will make biomimicry more accessible and thus more widely accepted throughout the industry, and the sustainability of all species will benefit. The Biomimicry Guild hypothesizes the incorporation of these principles, called Life′ s Principles, increase the likelihood of sustainability for a respective design, and make it more likely that the design will have a greater impact on sustainability for future generations of all species (Benyus 1997). This thesis utilizes Life's Principles as a foundation for a design process model intended for application on built environment projects at various scales.

Through the following chapters, this search takes a look at the importance of the integration of biomimicry in urban design to get more sustainable cities and better life, by analyzing the principles of both the sustainability and the biomimicry, and their relations with urban design, and applying these ideas on futuristic or existing cities to make a biomimic sustainable city more healthier and more conductive to life and the way of living, to get a better biomimitic urban design. There is a group of experts, architects ,biologists, scientists , economists and ecologists that should work together to face all the financial and designing difficulties to have better solutions and good innovative ideas for biomimitic sustainable urban design, it is not the only solution, but it is one of the best studies for a better future.

**Keywords**: Biomimicry, sustainability, sustainable development, urban design, built environment, urbanism.