

BIOMIMICRY PERMEATED ARCHITECTURE PEDAGOGY A METHOD OF INVESTIGATING BIO-MIMICRY AND DIGITAL TECHNIQUES IN THE ARCHITECTUREAL DESIGN STUDIOS

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ABSTRACT

In the emerging era of technology, the architectural world is taking inspiration from nature for solutions to its problems, which involve the study of natural design systems and various processes. This research investigation, carried out in the fourth year architecture design studio, aims to investigate bio-mimicry as a development process, involving it for architectural design. It also attempts to study innovation by integrating the digital tools like Rhino, Grasshopper, Ladybug and Para Cloud Gem. A new understanding of solving design issues with the help of natural processes and phenomena is the basic aim.

Natural systems offer design strategies to improve design thinking due to the availability of extensive repertoire; which makes incorporating multi-functional and self-organized biomimetic principles into the design process a requirement. This discusses an undergraduate design studio titled "Digital Design through Bio-mimicry" which was taught by the author in an architectural degree program at the University of Engineering and Technology Lahore, Department of Architecture in Spring 2018. Following the exploration of individual research topics, the findings were implemented into design solutions. It has been a critical challenge for the author to increase the skill of students about biomimetic thinking, making them learn about how to handle digital tool's performance issues, as well as making them work on the development of interesting form generation. The challenges encountered in the teaching process and future lines of the work are discussed in this paper.