



WHAT IS
THE ARCHITECT
DOING IN
THE JUNGLE?
BIORNAMETICS

BARBARA IMHOF, PETRA GRUBER (EDS.)

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Springer Wien New York

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The research was funded by the Austrian Science Fund (FWF):
AR 14-G21 in the arts-based research programme PEEK 2009

FWF

Der Wissenschaftsfonds.

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© 2013 Springer-Verlag/Wien
Printed in Austria

Springer Wien New York is part of
Springer Science+Business Media
springer.at

Graphic Design: Alexander Schuh
Copy editing: Jo Lakeland
Cover Photo: Bruno Stubenrauch
Pattern graphics: Biornametics 2011
Printed by: Holzhausen Druck GmbH, 1140 Wien, Austria

Printed on acid-free and chlorine-free bleached paper
SPIN: 86212370

With 51 figures

Library of Congress Control Number: 2012955404

ISSN 1866-248X

ISBN 978-3-7091-1528-2 Springer Wien New York

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We have to establish a common language

What is an Architect doing in the Jungle?

Nature Sessions deep in the virgin rainforests of Malaysia allow young talents to learn to watch, to understand connections, to correlate structure with function and to transfer deep principles from nature into their respective fields. Students that come from fields as diverse as the fine arts, the applied arts,

veterinary medicine, physics, biology, engineering and architecture experience a different approach to their own subjects. For example, the national Malaysian butterfly has amazingly beautiful colours generated by structures alone, and not by pigments. Such 'frozen

rainbows' can be transferred to architecture, and yield multifunctional, non-toxic surfaces that can be functionalized and thereby become responsive to various signals. A fire? The direction to the nearest exit appears automatically on the walls!

Evolution and Biomimetic Architecture

Convergent Evolution denotes a process where distinct species with differing ancestries evolve similar features in comparable environmental circumstances; examples of this evolution include the eye, cartilage and fin-like extremities. In these cases the relationship between structure and function seems to be

exceptionally strong. Morphodynamic investigations allow for biomimetic identification of principles in three distinct scenarios of observation (one animal, one niche, variable time OR one animal, various niches, same or semi-variable time OR various animals, one niche, same time), with a high potential of the subsequent transfer to the arts and sciences.

The Need for a Common Language

It is not easy: scientists and engineers have totally different concepts, languages, methods and aims compared to artists. These groups have started to communicate with each other only recently. The interaction between their respective fields is very important, but also a challenge because of different inherent

cultures and communication protocols. Therefore a common language in arts, science and engineering needs to be developed: a language in which descriptions at different levels of detail are more compatible.

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Project partner and panelist

EXPERT RESEARCHERS & PROJECT TEAM SPECIALISTS

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George Jeronimidis was director of the Centre of Biomimetics at the University of Reading, UK, and is one of the key researchers in biomimetics worldwide. His background is in chemistry and his work is mainly focused on engineering. He is member of several scientific boards. His current research interests cover biomimetics, plant and animal biomechanics, wood science, smart materials and structures, mechanics of composite systems, sensing and actuation. He lectures as biomimetics consultant in the Emergent Technologies Masters Programme at the Architectural Association (AA) school of architecture in London.

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Waltraut Hoheneder is an architect, product designer and researcher. She holds a diploma in architecture at the University of Applied Arts Vienna and a diploma in International Business Studies at the Vienna University of Economics and Business, and also studied Product Design. Her professional experience ranges from market research studies to design responsibilities in large-scale architectural projects. She is co-owner of LIQUIFER Systems Group, focusing on conceptual research and projects in the field of technological and demographic changes and their potential for future societal developments.

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