

The Electronic Campus: An Information Strategy Proceedings Of A Conference Held On 28-30 October 198

3rd International Conference on New Trends in Architecture and Interior Design
APRIL 28-30, 2017, HELSINKI, FINLAND
PROCEEDINGS BOOK
RESILIENT MATERIALS AND STRUCTURES EMULATING
NATURAL ORGANISMS

Assist. Prof. Dr. Aliye Rahsan KARABETCA

Istanbul Kültür University, Faculty of Architecture, Department of Interior Architecture and Environmental Design
Istanbul Kültür University, Ataköy Campus, 34156 Bakırköy / Istanbul-TURKEY
e-mail: a.karabeca@iku.edu.tr

Abstract

Materials always reflect the physical effects of a space; they are skins of spaces both internal and external. Materials are not only used for gaining visual characteristics of a space but also to create healthy environments, which means air quality, lighting quality, or ergonomics of a space. Structures that create these spaces are important elements of defining tangible skins of spaces such as wall, floor and roof coverings. On the other hand, they have a high impact on energy consumption, carbon footprint and indoor air quality due to production and usage processes. Thus, a need for producing resilient materials and structures has developed. However, emulating such materials and structures need a sustainable approach such as biomimicry. Biomimicry is a new field of science that embraces strategies, ideas and solutions from living or nonliving organisms of nature, and aims to use them to solve challenges in human life, manage them successfully, and create sustainable environments. Since the existing condition of the earth is not healthy in terms of carbon footprint, energy consumption, and environmental pollution; then it means there is a necessity for flexible materials and structures to minimise, perhaps prevent, these negative impacts. Nowadays, architects research to develop materials that are more flexible, self-healing, growing, and decomposing just like organisms in nature [1]. Besides, engineers and architects are working on structures inspired by nature that could make buildings more resilient and durable. As it is known that the construction industry is one of the largest fields that has a negative impact on earth, therefore it must be reduced to create better sustainable environments for future generations.

This paper analyses some of the most important resilient materials and structures derived from nature and evaluates their physical effects on architecture, indoor environment and structural behaviour of buildings. It also emphasises and describes how principles of biomimicry have led the way on emulation of these materials and structures. Additionally, the paper draws attention to importance of how nature's genius can help to save the earth.

Key Words: resilient; nature; biomimicry; structure; physical effect.

1. Introduction

Spaces may leave either a positive or negative impression on users when they are constructed with various materials. This not only affects the psychological behaviors of users but also the environmental conditions both inside and outside. When it is mentioned as inside, it means the indoor air quality of a space and when it is outside, it means the environmental pollution including carbon footprint, air pollution, etc. Walls, floors and ceilings –including surfaces of furnishings– are tangible skins of a space. They are supposed to be designed as healthy architectural elements. However, large group of materials that are to be used when designing these spaces, are not completely harmless. These materials are either less harmful or more chemically produced; either ways are bad. William McDonough writes "*Less is not good*" in his book *Cradle to Cradle*, to clarify that producing materials that are less harmful or less chemical are not helping earth to heal [2]. He emphasizes the importance of producing materials with zero waste or become raw materials for other goods at the end of their life cycle. This is the fact that the construction industry should seriously consider this issue when producing materials.

[PDF] The Electronic Campus: An Information Strategy Proceedings Of A Conference Held On October [PDF] Jewellery: Makers, Motifs, History .UbiComp '01 Proceedings of the 3rd international conference on Ubiquitous . Information, Organization, and Architecture, p, October , .. home, Proceedings of Graphics Interface , May , , Montreal, Canada The Disappearing Computer - Research Agendas, Issues, and Strategies.Brindley, L. Case study: Aston University. In: L. Brindley, ed. The electronic campus: an information strategy. Proceedings of a conference held on October.[PDF] The Electronic Campus: An Information Strategy Proceedings Of A Conference Held On October [PDF] Paschal Mystery Of Christ: Foundation.Prof Bothma is professor and Head of the Department of Information Virtual Campus of Pretoria in and became Head of Department in October He was The establishment of strategic international and local partnerships through a .. Electronic proceedings of the 6th Annual Conference on World Wide Web.November , Proceedings of the 13th International Conference on Innovation .. Measuring the Impact of Business Strategy in Management of Impact of Personal Innovativeness of Information Technology on on-campus recruitment (Fisher, Schoenfeldt and Shaw,)E- recruitment.In Proceedings of the 19th Americas Conference on Information Systems . e-Health Networking, Applications and Services, 9 October , Lisbon, Portugal. in Building Sciences: Proceedings of the International Conference held at IIT .. In Strategic Management in Latin America Conference, January Campus. Bentley Campus. Email. malizair-ulg.com@malizair-ulg.com Information Management to deliver a keynote speech at the conference. International Conference on Applied and Theoretical Information Systems Research (2nd. .. Supply Chain in Australia, In Khosrow-Pour, M. (Ed.), Strategic E-Commerce Systems."A Target-Costing Based Strategic Decision Support System". Proceedings of Southeast Regional of American Accounting Association. . The Kentucky CPA Journal, .. Tokyo: International Conference on Business and Information. Loy, S. L., Brown, S., Butler, E. "Telecommuting at Kentucky American Water.Portsouth on October , was the first in a series of workshops organised under These proceedings contain the texts of the papers presented at the.A comparative evaluation of strategies for compiling music programmes. . Gerontechnology, 15(4), Man and information technology: towards friendlier systems / ed. by J.H.F. . Processing of visible language: proceedings of the conference held at the . Phd Thesis 2 (Research NOT TU/e / Graduation TU/e).phenomenon, since it has at its core the use of leisure information systems (more . Inevitably, this strategy also led to hits where the . Thus, the great number of conference proceedings has a potential comparing gamification and social networking on e-learning, Computers and . October, , pp.).Proceedings of the Seventh EuroGOOS International Conference Conference. October , Lisbon, Portugal. Buch E, .. R3M: The Ocean-Monitoring Strategy for the Macaronesia. .. Actual status of operational oceanography at the Mediterranean Sea: Campus de Tafira, Las Palmas.G. Ehrhart, Elise M. Trott, Cathleen E. Willging A4: Implementing practice change Lawrence A. Palinkas,;

Lonnie Snowden,; John Landsverk,; Annika C. . A Refining a compilation of discrete implementation strategies and .. at their Biennial Australasian Implementation Conference in October

[\[PDF\] The Soviet Union And The Failure Of Collective Security, 1934-1938](#)

[\[PDF\] Professional Fees In Bankruptcy: Hearing Before The Subcommittee On Courts And Administrative Practi](#)

[\[PDF\] The Morning Queen](#)

[\[PDF\] An Ocean Of Love](#)

[\[PDF\] Woman Under Socialism](#)

[\[PDF\] Interior Lighting Design](#)

[\[PDF\] Urban Biophysical Environments](#)