UAUIM | FACULTATEA DE ARHITECTURĂ DE INTERIOR | 20 DE ANI DE ARHITECTURĂ DE INTERIOR ȘI DESIGN

ARCHITECTURAL EXPERIENCES

BOOK OF ABSTRACTS

INTERNATIONAL CONFERENCE OF ARCHITECTURE AND DESIGN

30-31/10/2023

COORDINATORS:
OANA DIACONESCU
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EDITURA UNIVERSITARĂ „ION MINCU"
UIM

PROIECT CO-FINANȚAT DE:
Administrația Fondului Cultural Național

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Editura Universitară "Ion Mincu",
București, 2023

20 ARCHITECTURAL EXPERIENCES - Book of Abstracts - International Conference of Architecture and Design 30-31/10/2023

The publication presents summaries of the scientific communications from the "20 Architectural Experiences" International Conference, aiming to disseminate architectural and design research studies.

Coordinators:
Oana DIACONESCU, Bogdan IONIȚĂ

Editors:
Daniel N. ARMENCIU, Cristia CHIRA, Cristina DUMINICĂ,
Alexandra DUNEL, Simina HAIDUC, Mihaela LAZĂR, Bogdan LOVIȘTE,
Alexandra STAN

Descrierea CIP a Bibliotecii Naţionale a României

20 architectural experiences : book of abstracts : 30-31/10/2023 /
coord.: Oana Diaconescu, Bogdan Ioniţă. - Bucureşti : Editura Universitară "Ion Mincu", 2023

ISBN 978-606-638-302-8

I. Diaconescu, Oana (coord.)
II. Ioniţă, Bogdan (coord.)

72

DTP and cover:
Bogdan IONIȚĂ

The paper represents the authors' statement and their responsibility of its content and form.


ARCHITECTURAL
EXPERIENCES

MENTAL IMAGES AND DIGITAL MODELS IN ARCHITECTURE. A NEUROPHENOMENOLOGICAL PERSPECTIVE/

University of Genoa, Italy

Andrea Giachetta; Linda Buondonno
andrea.giachetta@unige.it; linda.buondonno@edu.unige.it

Abstract.
Technological innovation in architecture concerns the construction phase but also a vast digital instrumental apparatus that has a direct impact on the whole design process, starting from the very beginning, at a cognitive level. Research on the design process can no longer disregard the increasingly prominent role of digital tools and must reflect critically on the mind as the system that emerges from the interaction of the architect's brain, body, and digital tools. With a neurophenomenological perspective (Varela, 1996) and within the framework of the extended mind theory (Clark & Chalmers, 1998) and its subsequent developments, we propose a discussion of the role of mental imagery in the design process in particular in the interaction with digital tools.

The analogy between mental imagery and multisensorial perception is now demonstrated thanks to discoveries in neuroscientific research (Pearson, 2019) that confirm some of the many philosophical theories developed throughout history (Giachetta et al., 2019). This aspect is especially relevant in the design process because it means that through mental imagery, if used actively, the architect can convey in the project data related to the multisensorial and embodied experience of space, which can become design material.

We will proceed in the paper with the discussion of three critical aspects of the interaction between mental imagery and some specific digital tools, namely the retrieval of motor and multisensory stimuli (Arbib, 2021; Zumthor, 1998), the relationship between imagining the whole and the parts of the architectural space (Raiteri, 2014), the interplay between precision and vagueness (Rowe, 2017).

Some of these reflections were taken as hypotheses that we aimed to verify through two experimental studies conducted in collaboration with psychologists and neurophysiologists. The first study (Buondonno, Chiorri, Vannucci, & Giachetta, 2023) collected first-person data from 90 undergraduate students and the second (Buondonno, Chiorri, Vannucci, Leandri, et al., 2023), which is now underway, aims to assess the visual cognitive styles and abilities of professional architects and also the neural correlates using electroencephalography. We will report and discuss the result of both studies.