idea

investigating design in architecture

2023 edition

edited by
Gaia Leandri

foreword by
Angelo Schenone

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Conference Proceedings
IDEA – Investigating Design in Architecture
2023 Edition
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This meeting stemmed out from studies, investigations and PhD lectures, in particular:

- 2022, Departamento de Expresión Gráfica Arquitectónica, Universitat Politècnica de València (UPV) and Dipartimento di Neuroscienze, Riabilitazione, Oftalmologia, Genetica e Scienze Materno Infantili (DINOGMI), Università degli Studi di Genova (UNIGE): Gaia Leandri, PhD thesis *Freehand digital drawing: a boost to creative design the observer's eye and the draftsman's brain*;
- 2022, Dipartimento Architettura e Design (DAD), Università degli Studi di Genova (UNIGE), lectures to PhD students in Architecture, Design, Digital Humanities and Neuroscience;
- 2023, Post Doc Consolidator Scolarship: *Ideazione dell'immagine e neurofisiologia: l'apporto creativo e gli strumenti per la comunicazione visiva*, Dipartimento Architettura e Design (DAD), Project Supervisor: Prof. Ruggero Torti; Research Fellow: Dr. Gaia Leandri.

The promoting committee is composed by professors, lecturers, PhD students and researchers from Italy, Spain, the US and the UK:

Angelo Schenone, Marco Testa (DINOGMI, Unige); Maria Linda Falcidieno, Andrea Giachetta, Gaia Leandri, Linda Buondonno, Elisabetta Canepa (DAD, Unige); Francisco Juan-Vidal, Susana Iñarra Abad (UPV); David Sunnucks (Queen Mary University of London).

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Architecture as Atmosphere[1]

Elisabetta Canepa

Università degli Studi di Genova
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Architecture is a complex process of spatial and temporal organization, which is conceived, developed, felt, and communicated also (and above all) through its atmospheric manifestations. Atmosphere is the essence of affective qualities we sense in our surroundings that confers identity and meaning to a situation or place. In the last three decades, investigations about atmospheres — aimed at comprehending, experimenting, and representing their expressive properties — have been drawing remarkable attention. From the end of the 20th century, some scholars have even observed an 'atmospheric turn,' a ramification of the more general 'affective turn' that bloomed in the Humanities in the early to mid-1990s. There is an ever-increasing enthusiasm for the atmospheric approach in architecture: today, atmosphere represents a crucial element for design practice and critical discussion, as well as architectural teaching. It satisfies the pressing need for bodily felt experiences and emotionally arranged ambiances.

Specific education is necessary to craft an architectural paradigm about atmosphere. My Ph.D. project (2019) was one of the first to analyze atmosphere from an architectural perspective by studying the topic through the sensory-emotional filter of the perceiving subject. Architecture and neuroscience were separate branches of knowledge until we acquired the awareness that the human brain develops in a continuous condition of adaptation to the variations of physical space. Wondering if it is possible to scientifically examine atmospheric perception, I completed my Ph.D. dissertation, undertaking a preliminary experiment that was supported by self-report tools. My current postdoc research (2021—2024) combines subjective indicators with measures of both autonomic and central nervous system activity.

The crucial question concerns how we can link a growing understanding and systematization of atmosphere in architecture to the study of the brain, body, and their emotion-related mechanisms, to gain insight into people's emotional complexity.

This IDEA presentation illustrates the jagged background that an architect should develop to manage the multidisciplinary essence of an atmospheric education. It is the occasion to show how it is possible to combine architectural theory, (neuro)physiological methodology, and experimentation in virtual reality. Specifically, the discussion focuses on the most recent experiment we carried out at the PLab2003 directed by Professor Bob Condia at Kansas State University (Manhattan, Kansas).

The priming potential of atmospheres is a deep-rooted intuition among architects, but we must consolidate evidence by collecting empirical data. We want to transform a design intuition into an *informed intuition*.

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[1] The theoretical premises of this abstract and the physiological-signal-based experiment illustrated during the IDEA 2023 Symposium were developed within the RESONANCES project — Architectural Atmospheres: The Emotional Impact of Ambiances Measured through Conscious, Bodily, and Neural Responses. This project received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement no. 101025132. The content of this text reflects only the author's view. The European Research Executive Agency is not responsible for any use that may be made of the information it contains.

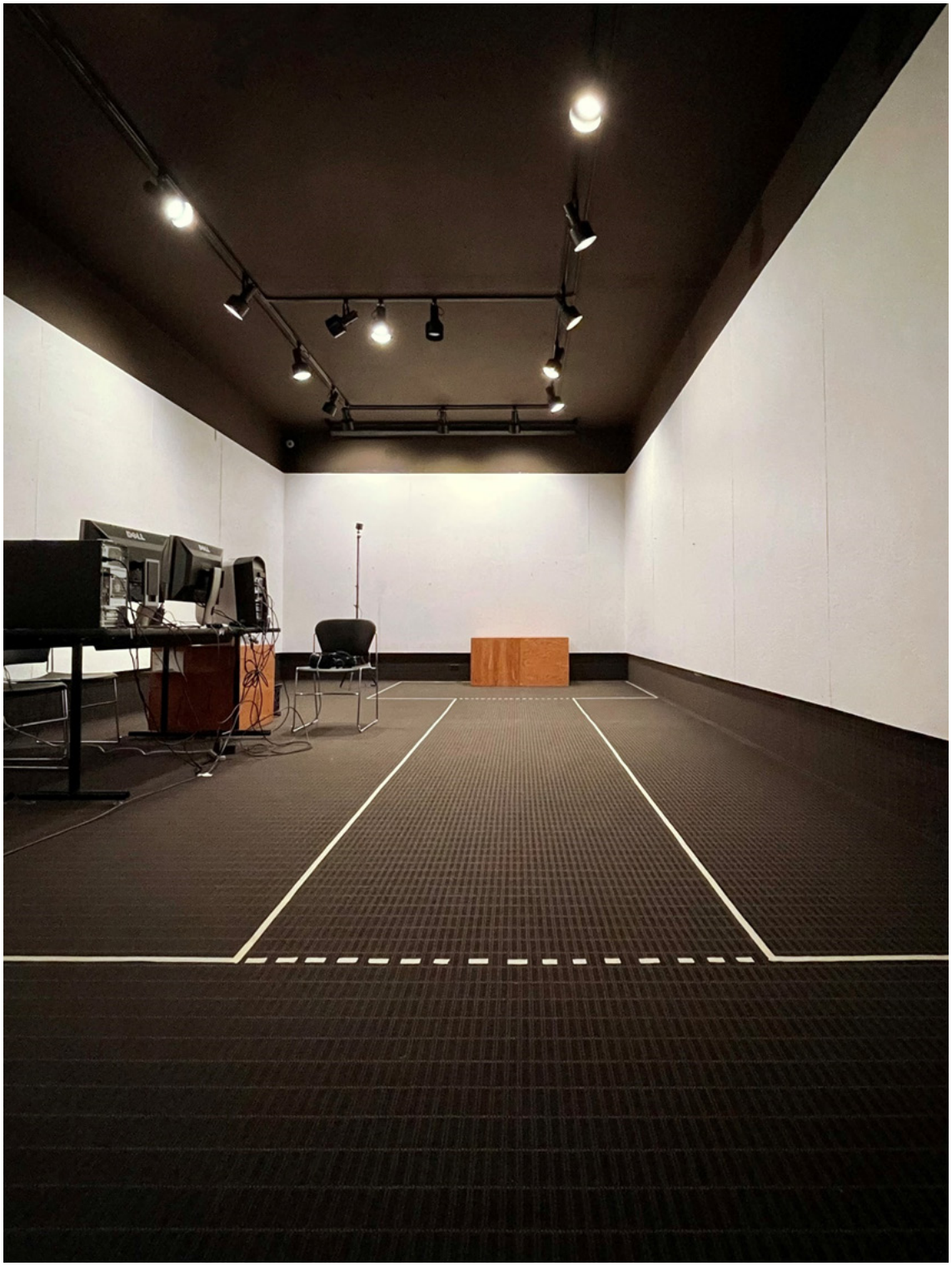

Figure 1 — PLab2003 experiments room, Kansas State University © Elisabetta Canepa, 2023.

Figure 2 — RESONANCES experiment © Alex Mendoza, 2023.

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The first IDEA symposium created the opportunity to compare hypotheses, procedures and proposals to evaluate and understand the potentiality in creativity, visuality and perception. This volume highlights the interest in these aspects and the subdivision into the three macro areas: *Body, Mind and Emotions; Technology and Human Perception; Modelling and Living Spaces*, shows that the research path is full of possible insights and new interpretations of only apparently consolidated and acquired topics.

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