



BOOK OF ABSTRACTS: POSTER SESSIONS

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SPONSORS



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FOREWORD

Dear Members,

This Book of Abstracts collects the posters presented at the Annual Conference of the Marie Curie Alumni Association which took place online on 5-7 March 2021.

For each poster, a page includes an abstract, an image of the poster, and information about the author(s) and their organisation(s). Posters are categorised under nine areas:

- Chemistry
- Economics
- Engineering
- Environmental Sciences
- Life Sciences
- Mathematics
- Physics
- Social Sciences, Humanities & Arts
- MCAA Chapters

The MCAA wishes to thank everyone who showcased their posters at the first-ever online Annual Conference event. All members and non-members are encouraged to submit posters for future Annual Conferences and General Assemblies.

The abstract authors may be contacted via the MCAA web portal.

Sincerely,
The MCAA 2021 Conference Committee



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ENGINEERING

New architectural devices to increase our connection to Nature from interior dwelling space: from our architectural heritage

Due to the increase in global population, there is a growing potential for losing regular “contact with Nature”; diminishing access to the documented wide range of associated human health and wellbeing benefits of daily interaction with the natural world. This leads us to a sensorily deprived built environment and to an increasing placelessness. Alienation from nature is not an inevitable consequence of modern life but rather a failure in how we have deliberately chosen to design and develop our world. In order to maximise dwellers’ connectivity to the natural environment in new and existing communities, new architectural design knowledge and useful creative strategies at all levels and scales of design, are urgently needed. Despite the increasing interest in this global concern, there exists limited knowledge and research into “how to integrate Nature with our interior dwelling space” and “how these solutions can enable their integration”.

To bridge these gaps, I develop an innovative research project that unfolds and analyses the underlying forms of knowledge behind exemplary post-war Danish and traditional Japanese buildings that offer exemplary sensory experiences of the natural world - not only by visual contact but by other complex mechanisms - to inform us of a sustainable contemporary interior design practice, through Landscape, Architectural Interior and Biophilic Design approaches. The main aim is to effectively enhance the health and wellbeing of communities through daily interaction with Nature in the urban areas of the future, an urgent challenge at EU and Global level.

The study opens a new research branch of Architectural Design and a new phase in the Biophilic design’s implementation for built environments. Moreover, it will make an important contribution to the EU-knowledge base on nature-based solutions.

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New architectural devices to increase our connection to Nature from interior dwelling space: through our architectural heritage

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5 KEY PARAMETERS
Post-war Danish houses
Traditional Japanese buildings

CONTEXT **TECTONIC SPACE** **DAYLIGHT** **MATERIALITY**

INTRODUCTION: There is a growing potential for losing regular “contact with Nature”; diminishing access to the documented wide range of associated human health and wellbeing benefits of daily interaction with the natural world. This leads us to a sensorily deprived built environment and to an increasing placelessness. Alienation from nature is not an inevitable consequence of modern life but rather a failure in how we have deliberately chosen to design and develop our world. In order to maximise dwellers’ connectivity to the natural environment in new and existing communities, new architectural design knowledge and useful creative strategies at all levels and scales of design, are urgently needed. Despite the increasing interest in this global concern, there exists limited knowledge and research into “how to integrate Nature with our interior dwelling space” and “how these solutions can be implemented”.

OBJECTIVES:

- To obtain new architectural devices, to increase our connection to Nature from Interior dwelling spaces and enable their integration.
- To produce a catalogue of potential sustainable practical devices and recommendations for the contemporary dwelling interior design practice.
- To develop a attitude of researchers, design practitioners, policy makers and society.

METHODOLOGY: A qualitative case-study of buildings in Denmark and Japan, analysed from Landscape, Architectural Interior and Biophilic Design approaches. Through 6 Key parameters, and from 19 Biophilic design patterns: 1. Nature in space 1.1. Visual connection with Nature 1.2. Non-visual connection with Nature 1.3. Presence of water 1.4. Dynamic/diffuse light 1.5. Link to natural system. 2. Natural analogues: 2.1. Biomorphic forms/patterns 2.2. Material link to Nature 2.3. Complexity and order. 3. Nature of the space: 3.1. Prospect 3.2. Refuge 3.3. Mystery 3.4. Risk and peril. 4. To consecutively apply research by design, a scientific methodology that links architectural research and practice.

EXPECTED RESULTS: We frequently enhance the health and wellbeing of communities through daily interaction with Nature in urban areas, an urgent challenge at EU and Global level.

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Royal Danish Academy

Architecture Design Conservation
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