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Environmental Experience Design Research for Sustainability

Topics 2024 Webinars

Advancing Sustainable Building Retrofitting: Design to Circular Economy (Topic 2)

Topics Webinar | Shaping Sustainable Futures: Integrating Innovation and Sustainability in Building Design and Retrofitting

15 May 2024, 01:00 pm (AEST)

Speaker: Dr. Masa Noguchi

Speaker: Dr. Glenn Costin

Speaker: Dr. Ki Kim

Speaker: Mr. Hung Quang Do

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4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
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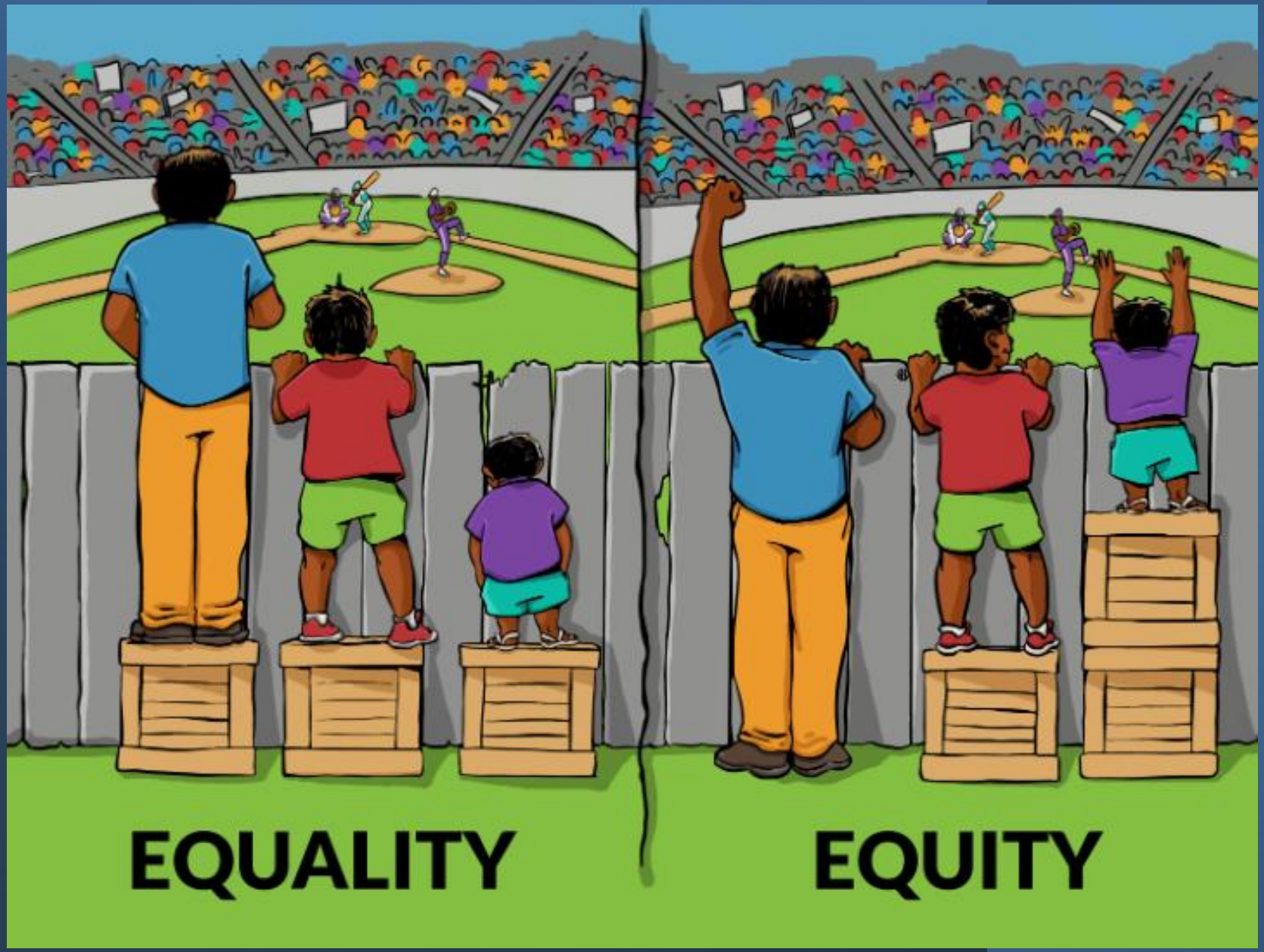
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS



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Habitat International

Volume 29, Issue 2, June 2005, Pages 325-336

A 'mass custom design' approach to upgrading conventional housing development in Mexico

Masa Noguchi[a,*], Carlos R. Hernàndez-Velasco[b]

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Abstract

In order to maintain the *economies of large-volume work* that help reduce construction costs, homebuilders in Mexico tend to *mass produce* low-cost housing using conventional methods and targeting low- and middle-income earners before having buyers for the units. Even though these homes respect a *minimum* of housing quality as defined by *housing institutions* such as governmental bodies providing financial assistance via loans provision, homebuyers appear dissatisfied with these *ready-built shelters* that barely meet their housing requirements.

In order to identify today's market demand for new homes in Mexico, the authors surveyed some typical low-cost housing developments located in Aguascalientes—a middle-sized city located in the central part of the country. The authors visited construction sites and conducted personal interviews with selected homeowners. Based on their observation of such housing developments, the authors found that many homebuyers 'extensively' modify their new home immediately after occupancy. This need to personalise their new house may be explained in part by the lack of *customisability* in housing design at the purchase stage.

This study therefore sought to introduce a 'mass custom design' approach that may bridge the production gap between the need for the mass production of housing that helps lower selling prices and the need for the design customisation required by today's consumer. This paper also examines the potential effects of this new design approach on the delivery of conventional, low-cost housing in Mexico.

Keywords: Low-cost housing; Mass customisation; Mass custom design; Mass custom home; Mexico

, com dois quartos, sala, cozinha e banheiro, foi erguida em
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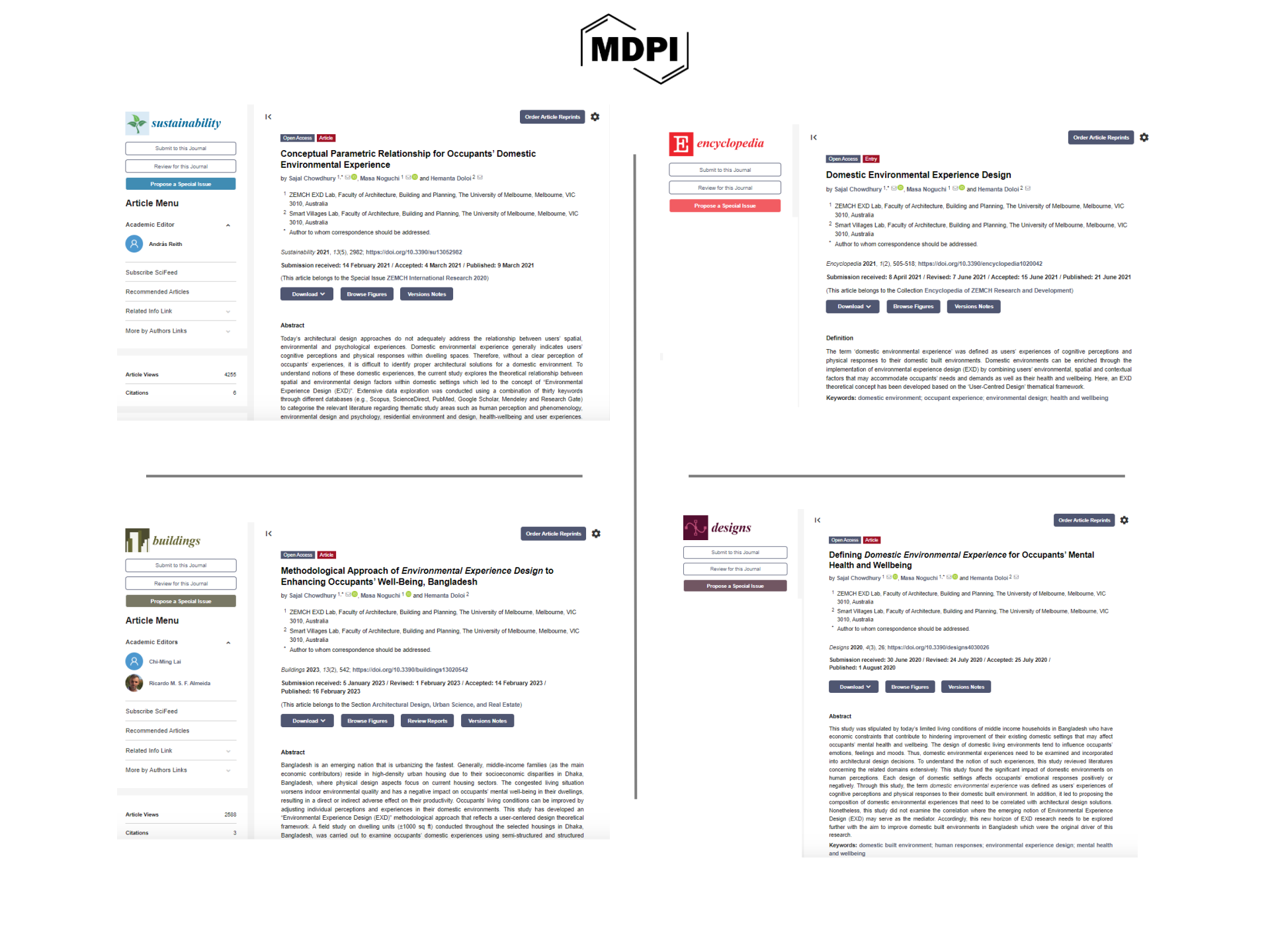
Mass custom design

Communication tool



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Conceptual Parametric Relationship for Occupants' Domestic Environmental Experience

by Sajal Chowdhury [1,*], Masa Noguchi [1] and Hemanta Doloi [2]

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Abstract

Today's architectural design approaches do not adequately address the relationship between users' spatial, environmental and psychological experiences. Domestic environmental experience generally indicates users' cognitive perceptions and physical responses within dwelling spaces. Therefore, without a clear perception of occupants' experiences, it is difficult to identify proper architectural solutions for a domestic environment. To understand notions of these domestic experiences, the current study explores the theoretical relationship between spatial and environmental design factors within domestic settings which led to the concept of 'Environmental Experience Design (EXD)'. Extensive data exploration was conducted using a combination of thirty keywords through different databases (e.g., Scopus, ScienceDirect, PubMed, Google Scholar, Mendeley and Research Gate) to categorise the relevant literature regarding thematic study areas such as human perception and phenomenology, environmental design and psychology, residential environment and design, health-wellbeing and user experiences.

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Domestic Environmental Experience Design

by Sajal Chowdhury [1,*], Masa Noguchi [1] and Hemanta Doloi [2]

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Definition

The term 'domestic environmental experience' was defined as users' experiences of cognitive perceptions and physical responses to their domestic built environments. Domestic environments can be enriched through the implementation of environmental experience design (EXD) by combining users' environmental, spatial and contextual factors that may accommodate occupants' needs and demands as well as their health and wellbeing. Here, an EXD theoretical concept has been developed based on the 'User-Centred Design' thematical framework.

Keywords: domestic environment; occupant experience; environmental design; health and wellbeing

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Methodological Approach of *Environmental Experience Design* to Enhancing Occupants' Well-Being, Bangladesh

by Sajal Chowdhury [1,*], Masa Noguchi [1] and Hemanta Doloi [2]

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Abstract

Bangladesh is an emerging nation that is urbanizing the fastest. Generally, middle-income families (as the main economic contributors) reside in high-density urban housing due to their socioeconomic disparities in Dhaka, Bangladesh, where physical design aspects focus on current housing sectors. The congested living situation worsens indoor environmental quality and has a negative impact on occupants' mental well-being in their dwellings, resulting in a direct or indirect adverse effect on their productivity. Occupants' living conditions can be improved by adjusting individual perceptions and experiences in their domestic environments. This study has developed an "Environmental Experience Design (EXD)" methodological approach that reflects a user-centered design theoretical framework. A field study on dwelling units (±1000 sq ft) conducted throughout the selected housings in Dhaka, Bangladesh, was carried out to examine occupants' domestic experiences using semi-structured and structured

designs

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Defining *Domestic Environmental Experience* for Occupants' Mental Health and Wellbeing

by Sajal Chowdhury [1], Masa Noguchi [1,*] and Hemanta Doloi [2]

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Abstract

This study was stipulated by today's limited living conditions of middle income households in Bangladesh who have economic constraints that contribute to hindering improvement of their existing domestic settings that may affect occupants' mental health and wellbeing. The design of domestic living environments tend to influence occupants' emotions, feelings and moods. Thus, domestic environmental experiences need to be examined and incorporated into architectural design decisions. To understand the notion of such experiences, this study reviewed literatures concerning the related domains extensively. This study found the significant impact of domestic environments on human perceptions. Each design of domestic settings affects occupants' emotional responses positively or negatively. Through this study, the term *domestic environmental experience* was defined as users' experiences of cognitive perceptions and physical responses to their domestic built environment. In addition, it led to proposing the composition of domestic environmental experiences that need to be correlated with architectural design solutions. Nonetheless, this study did not examine the correlation where the emerging notion of Environmental Experience Design (EXD) may serve as the mediator. Accordingly, this new horizon of EXD research needs to be explored further with the aim to improve domestic built environments in Bangladesh which were the original driver of this research.

Keywords: domestic built environment; human responses; environmental experience design; mental health and wellbeing

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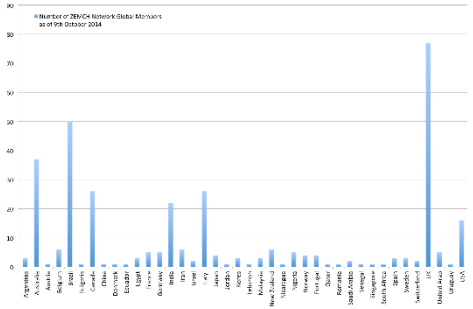

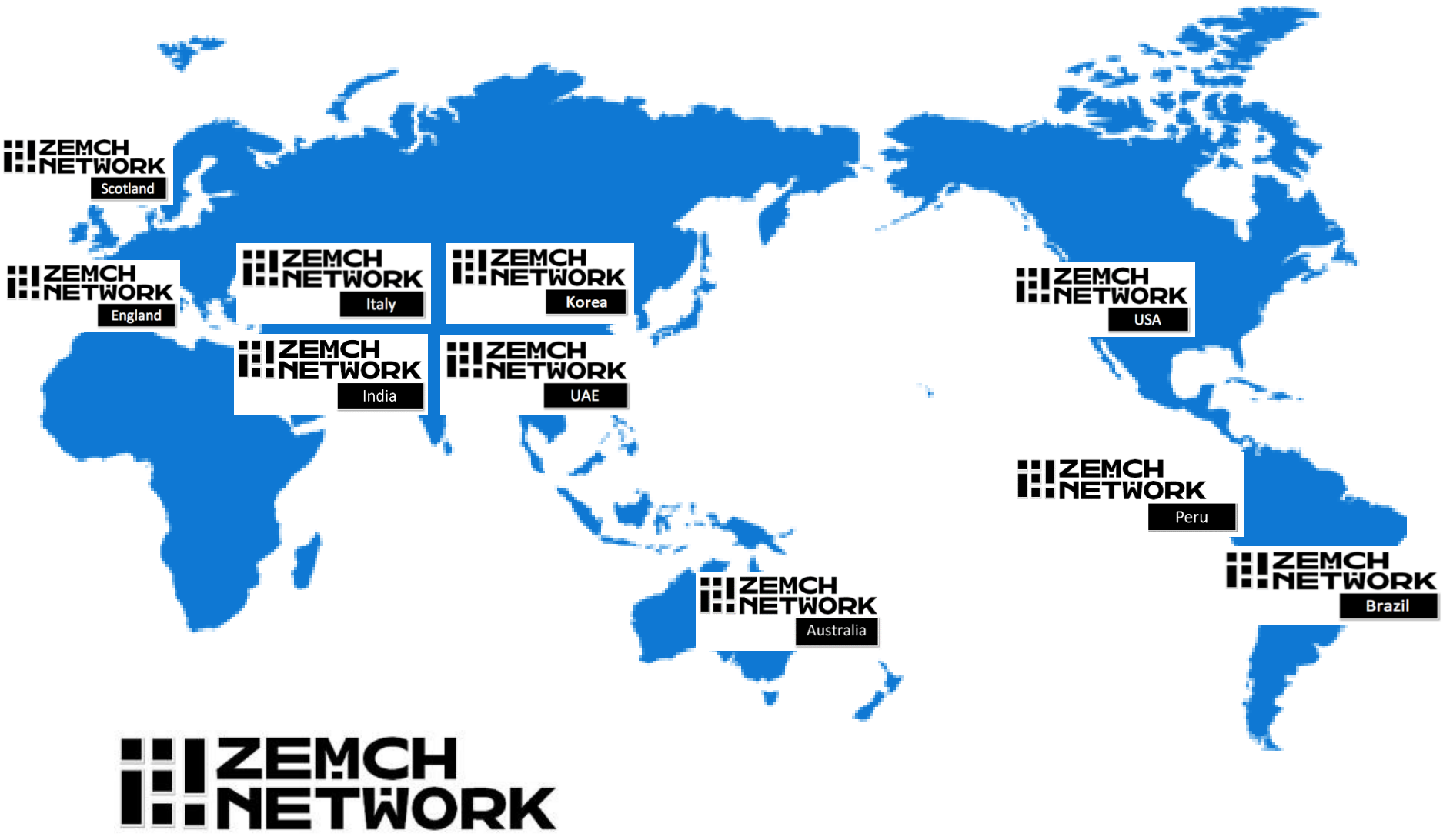
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Dr. Jun Tae Kim

Professor
Kongju National University, Republic of Korea, for Building Integrated Photovoltaics (BIPV) and advanced prefabrication in Korea falling into "Building Construction Technologies"

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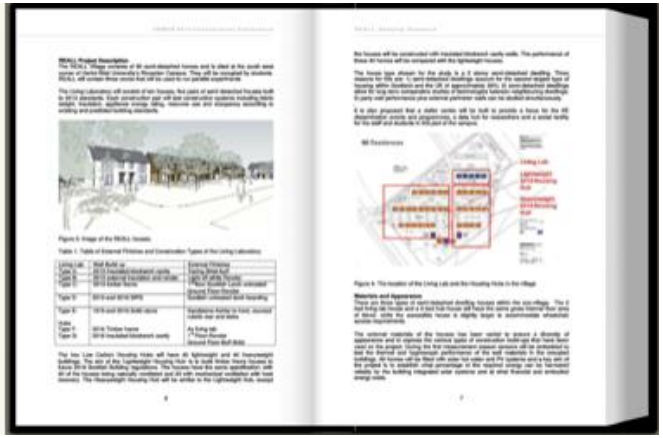


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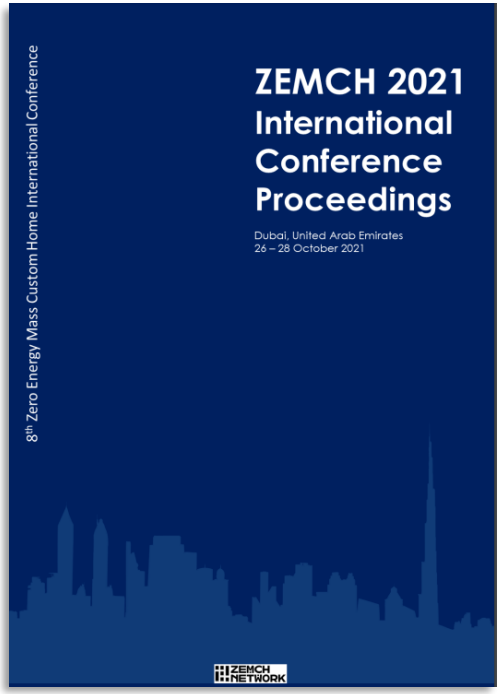
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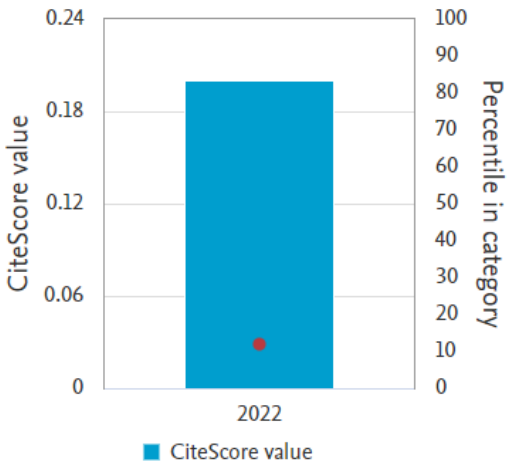

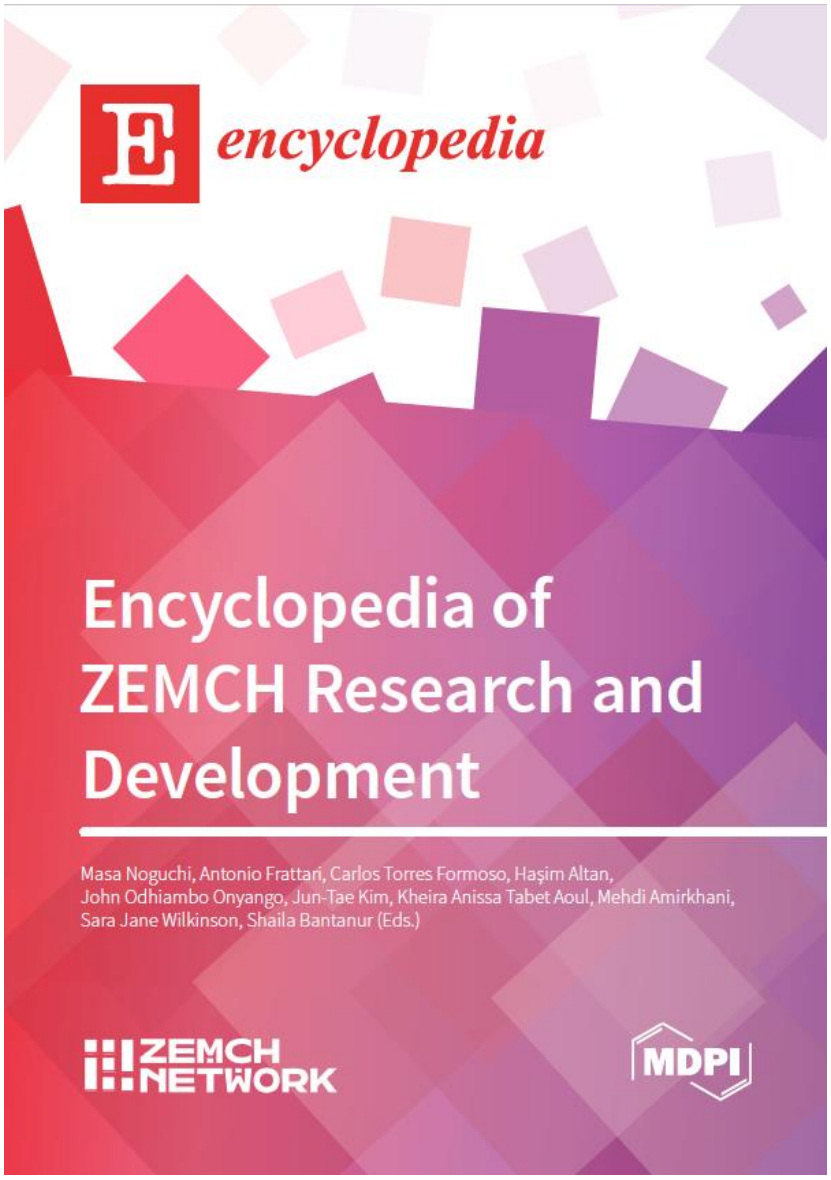
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