

CCAUA2025-Abstract Proceeding Book
May 8-9, 2025
Alanya, TÜRKİYE
SBN: 978-605-71006-x-x
www.iccaua.com

BOOK OF ABSTRACTS

CCAUA-2025

SESSION A: Architecture and Technology

Session Chairs:

Evidence on the Improvement of the Thermal Comfort Index and Habitability in Bioclimatic Spaces of the Mediterranean Region

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Abstract:

Contemporary bioclimatic design is based on the synergistic integration of five essential pillars: urban planning, architecture, vegetation, landscaping, and materials. This strategic combination enables the creation of sustainable spaces that optimize thermal comfort and habitability. Bioclimatic urban planning establishes environmental planning through the efficient arrangement of green spaces and ecological corridors, promoting air circulation and reducing the heat island effect (Cano Giraldo, 2024). Meanwhile, bioclimatic architecture incorporates construction solutions that maximize the use of solar radiation, cross ventilation, and energy efficiency (Bunimov, 2023). The use of vegetation and landscaping provides natural barriers that stabilize temperature and enhance thermal comfort, as observed in the Oasis Colectivo project, which employs strategically placed trees and gardens to reduce ambient temperature (Gamboa et al., 2024). Finally, the appropriate selection of materials, such as those with high thermal inertia or reflective properties, complements these strategies, contributing to efficient natural air conditioning (Rodríguez Escandell, 2024). The balanced combination of these elements forms the foundation of modern bioclimatic design, aimed at improving human well-being and urban sustainability.

Keywords: architecture;urban planning;vegetation;landscaping;bioclimatism;thermal comfort; urban ecology.
