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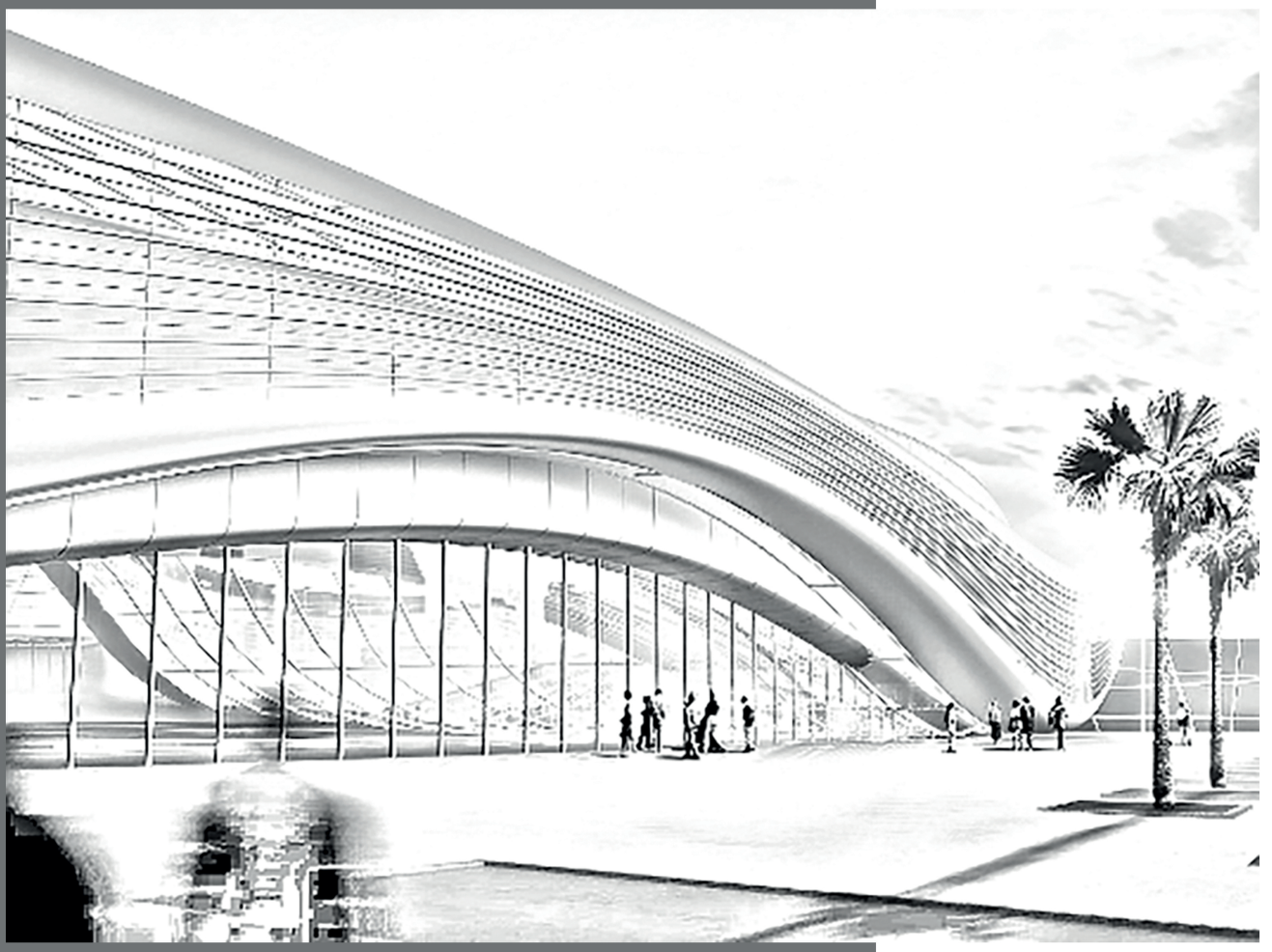
8-9 May 2025



8th INTERNATIONAL CONFERENCE OF CONTEMPORARY AFFAIRS IN ARCHITECTURE AND URBANISM

CONFERENCE PROCEEDINGS

A COMPILATION OF ABSTRACTS



Editors: Assoc. Prof. Dr. Hourakhsh Ahmad Nia
Assoc. Prof. Dr. Rokhsaneh Rahbarianyazd

INTERNATIONAL CONFERENCE

CONFERENCE PROCEEDINGS

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Alanya University

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Introduction

The *8th International Conference on Contemporary Affairs in Architecture and Urbanism* is organized by Alanya University with the collaboration of the University of Tehran and the Journal of Contemporary Urban Affairs. ICCAUA 2025's mission is to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of the contemporary concerns, methods and approaches to architecture and urbanism. It also provides the premier interdisciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, concerns, practical challenges encountered and the solutions adopted in the field of Architecture and Urbanism.

Accordingly, the conference brings together all the theories, manifestos and methodologies on contemporary architecture and urban spaces to raise the understanding for the future of architectural and urban planning. Overall, the conference aimed to establish a bridge between theory and practice in the built environment. Thus, it reports on the latest research findings, innovative approaches, and methodologies for creating, assessing, and understanding contemporary built environments.

A broad outline of the conference's scope includes peer-reviewed original research articles, case and technical reports, reviews and analyses, papers, and short communications. This conference proceeding is the combination of scholars, practitioners, professionals, researchers and policymakers with a common interest in the field of architecture and urban design from different disciplines, such as Art, Architecture, Landscape, Urban planning and Urban Design. The scope of this conference includes:

A: Architecture and Technology
Sub-Sessions:
Environmental Sustainability
Smart Buildings
Smart Skin, envelope, Buiding facade
Green Architecture and Urban Planning
Climate and building
Climate Change Adaptation
Interior Architecture
Architectural History and Theory
Architectural Planning and Design
Sustainable Environmental Design and Technology
Biophilic Architecture
Kids and Architecture (Special session by Dr. Mennat-Allah El-Husseiny).
Design and Technology of Construction
Computers in Architecture
Energy Conservation
Solar design
Genius loci
Education
Artificial Intelligent (AI)
Internet of Things (IoT)
Blockchain Technology
Building Information Modelling
Augmented Reality (AR) and Virtual Reality (VR)
Space and Place Studies
Phenomenology

B: Sustainability and Urban Design
Sub-Sessions:
Landscape Architecture and Urbanism
Sustainable Urban Development
Smart City, Digital Age, AI
Urban ecology
Urban Microclimate Analysis
Housing and Urban Environments
Urban Aesthetics
New Urbanism
Urban Transportation: Planning, management, and Strategies
Disaster Risk Management
Urban Sprawl
Moral and Ethical Implications in Urban Evolution
Obedience and Responsibility in Urban Expansion
Healthy and Productive Economy
Chemicals, Waste and Air Quality
The Urban and Architectural Philosophy
Landscape
Social and behavioural studies
Public Places Urban Spaces

C: Heritage and Cultural Landscapes
Sub-Sessions:
-Revitalization
- Gentrification
-Cultural studies
-Adaptive reuse
- Regeneration and Urban Renewal
-Morphology
-Urban Identity, Authenticity
-Tourism Management Perspectives
-Archaeology, Reconstruction and Restoration
-Conservation
-Computer and Digital Applications
-Space and Place Studies
-Intangible heritage
-Cultural Heritage and Smart Preservation Technologies

D: Habitat Studies / Infra Habitation
Sub-Sessions:
-Infra Habitation
-Emerging cities
-Gated communities
- Conflict and divided territories.
- Slums
-Affordable houses.
- Resilience, Disaster and Conflicts
-Pandemic and disease management
-Vernacular studies
-Agricultural Studies
-Housing Studies
- Housing in Egypt (Special session by Dr. Husam R. Husain, German University in Cairo)
-Demographic studies
-Rural Studies

E: Urban Economics: Studies/Policies/Challenges
Sub-Sessions:
- Socioeconomic Inequality and Urban Informal Economies

- Urban Regeneration and Economic Revitalization
- Public Spaces and Economic Development
- Smart Cities and Economic Competitiveness
- Urban Design and Sustainable Economic Growth
- Historic Preservation and Economic Resilience
- Urban Transportation and Infrastructure Economics
- Urban Tourism, Cultural, and Creative Economies
- Digital and Innovation Economies in Urban Contexts
- Economic Impacts of Urban Migration and Demographic Changes
- Circular Economy and Sustainable Urban Finance
- Climate Change, Urban Resilience, and Economic Adaptation
- Urbanization, Economic Transformation, and Globalization
- Real Estate, Housing Markets, and Urban Policy
- Urban Governance, Policy, and Investment Strategies

F: Salutogenic Architecture
Sub-Sessions:
-Public Health
-Beyond health Architecture
-Visual Comfort
-Well-being in architecture and built environment.
-Quality of Life
-Healing Environment
-Aesthetic Design and Health
-sustainable acoustic design system
-Thermal comfort
-Comprehensibility in architecture
-Indoor air quality
-Manageability in architecture
-Meaningfulness in architecture
-Sick Buildings

G: Civil Engineering
Sub-Sessions:
- Theoretical and Advanced Technology of Engineering Structures
- High-rise Buildings and Large-span Structures
- Bridge and Tunnel Engineering
- Newer Structures and Special Structures
- Engineering Structure Safety and Disaster Prevention
- Structural Reliability, Durability and Health Monitoring
- Project and Construction Processes
- Educational Topics in Civil Engineering
- Reuse and Recycle Wastewater
- Traffic Engineering
- Geographic Information Systems (GISs)
-Construction Management Engineering

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Keynote and Invited Speakers' Biographies



Prof. Dr. Vítor Oliveira, University of Porto | UP , Faculty of Engineering, Portugal

Vítor Oliveira is a leading scholar in urban morphology and urban planning, widely recognised for his contributions to understanding the physical form of cities and their spatial organisation. As a prominent figure in the International Seminar on Urban Form (ISUF), where he has served as president, he has fostered global collaboration among scholars and practitioners dedicated to the study of urban form. Oliveira has authored several influential books and articles, including *Urban Morphology: An Introduction to the Study of the Physical Form of Cities* and *Advances in Urban Morphology*, which explore key theoretical approaches such as the Conzenian and Muratorian traditions, offering valuable insights into the evolution of urban forms and the methodological tools needed to analyse them. His research bridges historical urban theories with contemporary urban challenges, integrating academic depth with practical applications for urban design and planning. Through his academic and leadership roles, Oliveira has significantly shaped the field, making it more accessible to both researchers and practitioners, and emphasising the importance of understanding cities' physical structure to ensure a sustainable and well-organised urban future.



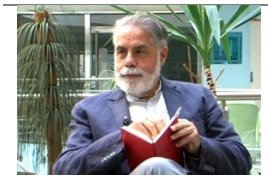
Garry McDonald, B ScArch, B Arch, M.ICOMOS, Associate Director, GBA Heritage, Sydney, Australia

Garry is an Associate Director at *GBA Heritage*, a private consultancy that advises owners, Councils and Government agencies on the process of managing their heritage-listed assets.

Garry is a registered architect with more than forty-five years of professional experience in architectural practice, including twenty-five years directly in heritage conservation, with involvement in a broad range of projects. His experience in heritage includes conservation works, adaptive reuse, remediation, historical research, heritage master planning and analysis, interpretation, and the preparation of various heritage reports including Conservation Management Plans (CMP) and Statements of Heritage Impact (SHI).



Prof. Dr. Tolga Ünlü is a distinguished scholar in urban and regional planning, with a focus on urban morphology, physical planning, and urban design. He completed his undergraduate, master's, and doctoral studies at the Department of City and Regional Planning at Middle East Technical University (METU), with his doctoral research addressing planning control mechanisms through a case study on Mersin. Prof. Ünlü has published extensively in national and international journals, contributing both theoretical and practical insights into urban form, morphological processes, and the planning history of Turkish cities, and has authored and edited several books on spatial quality, urban transformation, and planning practices in the Eastern Mediterranean context. He played a central role in founding the Turkish Network of Urban Morphology (TNUM) in 2014 and has been a long-time member of the Urban Morphology Research Group at the University of Birmingham. Between 2006 and 2020, he held various academic and administrative positions at Mersin University, including Department Head and Director of the Mediterranean Urban Research Center, and since 2020, he has served as a professor at Çukurova University. His scholarly contributions, leadership in academic networks, and dedication to connecting research and practice position him as a leading figure in the discourse of urban morphology both in Turkey and internationally.



Professor Dr. José Manuel Pagés Madrigal, Conference Co-Chair

Professor Dr. José Manuel Pagés Madrigal is a distinguished academic and practitioner in the field of architecture and urban design, widely recognised for his commitment to integrating traditional heritage with innovative design approaches. Through his extensive research, publications, and teaching, he has contributed significantly to the discourse on sustainable urban development, emphasising context-sensitive solutions and cultural preservation. As an active leader in various academic and professional networks, Professor Pagés Madrigal continues to foster collaboration among researchers and practitioners, while inspiring a new generation of architects to pursue inclusive, forward-thinking design strategies.



Prof. Dr. Islam El Ghonaimy, Department Of Architecture and interior design, College of Engineering, University of Bahrain, Bahrain.

Islam Elghonaimy did the honors of setting forth the consultation services in City Urban Planner for TEAM International office, Iraq - Kurdistan Region, 2012-2016. And as urban consultant for World Institute for Development Economics Research of the UNU-WIDER, Helsinki, Finland on 2007 & 2012 and as City Development Strategy Consultant, for World Bank projects with Arab Urban Developing Institute(AUDI), Arab Towns Organization, Riyadh, SA Academically, in 2000 he has been accredited the Doctoral of philosophy degree. Formerly, in 1995 he has been

approved the M.Sc. and B.Sc. of Architect on 1988 In 2014, he was assigned to hold down a professor rank by High commission of Universities in Egypt. has been affiliated as moderator for the academic program for many universities. Since 2012, he has been affiliated with the University of Bahrain, College of Engineering, Department of Architecture and Interior Design and External reviewer in Higher Education for many universities in Gulf Region.



Abidemi Somoye is an Assistant Professor in Economics at Near East University. He has a BSc in Economics from Olabisi Onabanjo University, Nigeria; an MSc in Economics from Girne American University, TRNC; and a Ph.D. in Economics from Near East University, TRNC, where he currently teaches Advanced Microeconomics and Macroeconomics, Intermediate Microeconomics, Foundation of Economics II, International Economics, Industrial Economics, World Economy, and Economic Development. His research focuses on Energy Economics and Development Economics. His articles have been published in high–ranking journals such as Renewable Energy and Sustainable Energy Reviews, Renewable Energy, Environmental Science and Pollution Research, Natural Resource Forum, Letters in Spatial and Resource Sciences, and OPEC Energy Review. He is a reviewer for international journals such as the Journal of Cleaner Production, Polish Journal of Environmental Studies, Applied Economic Letters, SN Business & Economics, African Development Review, Environmental Quality Management, and Sage Open. He is a Speaker and the Author of Four Personal Development Books. He is a member of the American Economic Association and a Certified Professional Life Coach from Transformation Academy, USA. He is married and has a loving son.



Dr. Azyar Abaee is a PhD holder in Urban Planning and currently serves as the Director of the Research and Education Department at UARC, Iran, where his work spans a broad spectrum of urban studies, including urban morphology, design processes, pragmatism, aesthetics, and design codes. Building on his academic foundations at the University of Tehran, he has contributed extensively to scholarly discourse through publications such as “Rebuilding the relationship between urban morphology and environmental psychology” and “The study of urban form in Iran” in Urban Morphology, helping bridge conceptual frameworks of typological analysis with contemporary challenges in globalising cities. Dr. Abaee’s innovative approach emphasises the preservation-development continuum, advocating a balanced interplay between traditional forms and modern evolutions. His contributions to Iranian urban research networks, together with his commitment to refining design methodologies, position him as a leading voice in redefining and contextualising morphological analysis for sustainable urban futures.



Husam R. Husain, PhD, Assistant Professor, German University in Cairo

Husam R. Husain is an architect and urban designer with extensive academic and professional expertise. He earned his PhD from The American University in Girne, North Cyprus, and is currently an assistant professor at the German University in Cairo. Additionally, Dr Husain serves as Head of the Design Unit and Director of Engineering Studies at REC in Amman, Jordan. His research focuses on housing, urban transitions, socio-economic impacts on urban forms, and the geopolitical dynamics of port cities. He has also edited several influential books, including “AI-Driven Design: Pioneering the Digital Frontier” (2024), “Beyond Blueprints: Advancements in Architectural Education and Innovation” (2023), and “Heritage and the City: Values and Beyond” (2022). His research has been widely recognised, earning him best paper awards at international conferences and contributions to urban policy debates in the Mediterranean region. He is the Editor-in-Chief of the Journal of Mediterranean Cities and serves on the editorial boards of several prominent international journals in architecture and urban studies. He has also organised numerous conferences, workshops, and seminars that address contemporary urban challenges.

Preface by the Local Organizing Committee Chair

ICCAUA 2025 — *"Bridging Heritage and Digital Frontiers for a Salutogenic Urban Future"*

Distinguished colleagues, honoured guests, and dear friends,

As Chair of the Local Organising Committee, it is both a privilege and a profound delight to welcome you to the 8th International Conference of Contemporary Affairs in Architecture and Urbanism here at Alanya University. Over the past eight years ICCAUA has grown from a promising idea into a truly global platform, and this year's gathering is our most ambitious yet.

For this year, we received submissions from 726 academicians, comprising 440 full articles, hailing from 47 countries. Following a rigorous peer-review and registration process, 278 high-quality papers representing 39 nations have been selected for presentation. Together with 278 technical papers distributed across seven parallel sessions, these contributions reveal the sheer breadth of contemporary architectural and urban scholarship.

Our central theme, *"Bridging Heritage and Digital Frontiers for a Salutogenic Urban Future,"* captures the spirit of the conversations that await us. Over the coming days we will:

- grapple with the accelerating forces of urbanisation,
- explore heritage conservation as a cornerstone of sustainable development in habitat studies,
- examine the socio-economic dimension of contemporary urban design, and
- investigate the transformative influence of artificial intelligence on salutogenic urban design, with a special lens on Mediterranean cities.

To guide us, we are joined by an extraordinary constellation of keynote speakers: Professor Dr Vítor Oliveira, President of ISUF; Garry McDonald, Associate Director of GBA Heritage, Australia; and Professor Dr Tolga Ünlü, Director of ISUF Turkey. Their insights, together with the wisdom of scholars gathered from multidisciplinary fields across the world, will undoubtedly challenge and inspire us.

Such a conference does not blossom without devoted gardeners. I therefore extend my deepest gratitude to our Rector Prof. Dr Turan Sağer, our Dean Prof. Dr Mehmet Durdu Öner, and our Head of Department Asst. Prof. Dr Elif Gizem Yetkin for their unwavering support. My heartfelt thanks also go to our tireless co-chairs—Prof. Dr José Manuel Pagés Madrigal, Prof. Dr Islam El Ghonaimy, Dr Rokhsaneh Rahbarianyazd, Mojdeh Nikoofam, and Dr Abdollah Mobarakie—as well as to every reviewer from the Journal of Contemporary Urban Affairs, Journal of Mediterranean Cities, Journal of Smart Design Policies, and Journal of Salutogenic Architecture who has safeguarded the academic rigour of our proceedings.

We are honoured, too, by the partnership of the University of Tehran and by the exemplary efforts of our co-governor of the conference, Dr Azadeh Milani. Your commitment has been instrumental to ICCAUA 2025's success.

Colleagues, the challenges we face—climate uncertainty, socio-economic inequity, rapid technological change—demand ideas that are at once visionary and practical. Let us seize this moment to forge new collaborations, to interrogate and refine our methodologies, and to carry the knowledge exchanged here back to our home countries for the enrichment of communities worldwide. In doing so we advance not merely the scholarship of architecture and urbanism, but the quality of life for present and future generations.

I invite you to immerse yourselves in the rich academic and cultural environment we have prepared. May the dialogue of these days ignite fresh thinking, may the friendships kindled here endure, and may ICCAUA 2025 stand as a beacon illuminating our shared path toward healthier, more equitable, and more sustainable cities.

Thank you, and welcome.

Dr Hourakhsh A. Nia
Chair, Local Organising Committee
ICCAUA 2025 – Alanya University
8 May 2025

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BOOK OF ABSTRACTS

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Manuscript ID: ICCAUA2025EN0008

Architecture on Modern Physics

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Abstract:
The question "What is architecture?" is challenging to answer due to its complexity, diverse implications, and its integration into human activity worldwide, from prehistoric history to contemporary applications. This study proposes a methodological approach combining theoretical and experimental exercises. These exercises address environmental laws, the physical dynamics of small and large towns, and the impact of the built environment on both the collective population and individual inhabitants. Our findings highlight the significance of daily construction practices and reveal how modern physics discoveries influence not only the artistic but also the scientific and emotional understanding of the built environment. The global implications of this research are substantial, offering deeper insights into architectural practices and enabling the reproduction and amplification of these insights, ultimately enriching our understanding and engagement with the world.
Keywords: Architecture; Modern Physics; Built Environment; Methodological Approach.

Manuscript ID: ICCAUA2025EN0011

Navigating Post-Pandemic Spaces: The Role of IoT for Health, Safety, and Resilience

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Abstract:
The COVID-19 pandemic has revealed the vulnerabilities of our society and our built environment. As we move forward from the pandemic, it is clear that it will leave a lasting impression on the way we live, work, and interact with one another. This research paper explores the transformative role of the Internet of Things (IoT) in the built environment in the post-pandemic era. By facilitating real-time monitoring and data-driven decision-making, IoT technologies can transform conventional spaces into smart environments that prioritize health and safety. Through a qualitative literature review, the paper identifies key themes around implementing IoT solutions that promote occupant well-being, streamline operations, and address sustainability goals. Ultimately, the findings advocate for a collaborative approach among stakeholders to leverage IoT for building environments that prioritize health and adaptability in both current and future contexts.
Keywords: COVID-19; Internet of Things; Smart Architecture; Resilience.

Manuscript ID: ICCAUA2025EN0051

A Comprehensive Statistical Analysis of Multi-Story Timber Residential Buildings in Finland (1995-2024)

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Abstract:
By the end of 2024, Finland had approximately 1.5 million buildings (excluding free-time residences and agricultural structures), with residential buildings accounting for nearly 65% of the total gross floor area. Finland ranks second in Europe, after Spain, in terms of the proportion of multi-story buildings, with nearly 47% of Finnish housing units located in such structures. Despite an annual construction rate of 40,000-46,000 new housing units, timber multi-story apartments make up only 1% of the total, although when including two-story buildings, the market share of wooden residential buildings rises to about 5-6%. By December 2024, over 200 timber residential buildings exceeding two stories, comprising 6,000 apartments, had been constructed in Finland. In recent years, the use of cross-laminated timber (CLT) and laminated veneer lumber (LVL) frame-based volumetric modular element technology has gained significant traction in Finland's timber residential construction sector.
Keywords: Timber construction; Multi-story residential building; Volumetric modular element; CLT; LVL.

Manuscript ID: ICCAUA2025EN0052

Efficient Spatial Organization for Occupants in Need: Innovative Spatial Solutions for Displaced and Vulnerable Groups

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Abstract:
This study investigates the spatial organization and user satisfaction of temporary shelters designed for displaced and vulnerable populations affected by disasters and crises. Post-disaster camp areas and spaces established for the population affected by natural disasters such as earthquakes, hurricanes, tsunamis and human-made disasters will be examined. Critical pros and cons in the design and management of these spatial organizations will be determined and interpretations and recommendations will be provided based on the analysis of this study for future research. Using a comprehensive web-based methodology, the study categorizes the findings according to geographical region and evaluates user satisfaction. The findings highlight inequalities in camp planning and draws attention to recurring problems such as inadequate infrastructure, lack of social space and inadequate psychological support. The study advocates for sustainable, user-centric approaches to enhance the living conditions and psychological well-being of affected populations within these spatial organizations. It further contributes to the advancement of durable and adaptable designs for temporary shelters.
Keywords: Disaster Camp Area; Temporary Shelters; Spatial Organization; Displace People.

Manuscript ID: ICCAUA2025EN0064

Enhancing the Quality of Life through Design: Guidelines to Fostering Place Attachment in Bahraini Buildings

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Abstract:
Designers' primary objective is to propose solutions that enhance occupants' quality of life. Therefore, placing attachments in different building types is key to attracting users and significantly contributes to achieving this objective. The new typology of the Edu Care building reflects this concept, a new trend of sustainable building typologies in Bahrain. It combines informal healthcare, education, and wellness facilities. This paper investigates the architectural factors that impact place attachment in buildings in Bahrain. The study adopts a quantitative assessment of place attachment through a questionnaire to explore the public's perception and preferences. Regression and frequency analyses are used to visualize the impact of different architectural factors on place attachment sustainability. The findings highlight the significance of biophilic elements, social interaction spaces, shared facilities, and comfort in enhancing building place attachment. The presented recommendations provide valuable insights for designers and stakeholders in designing multi-functional buildings to improve user experience.
Keywords: Place Attachment; Quality of Life; Sustainability; Phenomenology; Well-being.

Manuscript ID: ICCAUA2025EN0071

Greening Strategies for Improving Residential Existing Buildings' Performance in Bahrain's Tropical Desert Climate

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Abstract:
Bahrain's tropical desert climate significantly challenges existing buildings' energy efficiency and indoor comfort. The residential sector in Bahrain consumes up to 48% of national energy production. Cooling accounts for up to 80% of domestic energy use. Moreover, existing buildings require envelope renovation, and one of the least intrusive methods is greening strategies. The study's main objective is to assess the impact of retrofitting greening strategies on energy consumption and specify its optimum configuration. Simulations through DesignBuilder were conducted to model a typical housing unit in Bahrain. Results indicated that greening provides effective protection from solar radiation and reduces solar heat gains through building envelopes. Furthermore, the configuration of the green roof combined with the South and West green walls offered the best results in limiting indoor air temperature and relative humidity increases. Findings suggest that retrofitting existing residential units could significantly reduce cooling loads and, therefore, reduce energy consumption.
Keywords: Building performance; Energy efficiency; Greening Strategies; Sustainable Building; Retrofitting.

Manuscript ID: ICCAUA2025EN0073

Designing Inclusive Loggia Spaces for Urban Resilience to Climate Change

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Abstract:
Based on the experience of people with diverse abilities, recent qualitative research suggests semi-open *loggia* spaces to face extreme weather conditions in buildings and cities. Aiming at social justice and resilience to climate change, it is pertinent to question the morphological implications of the mentioned qualitative research for architecture and urban rehabilitation. To bridge the gap between theory and practice, we used this qualitative evidence as starting point to study exploratory forms of loggias, through research by design. The results suggest that safety and multisensory experiences may be improved: 1. pathways free of obstacles in sidewalks; 2. shading devices without possibilities of child climbing over balconies; 3. relaxing areas in different levels than the main walkways in urban beaches. These findings may contribute to improve the design of *loggia* spaces and to increase the adaptation of buildings and cities to climate change.
Keywords: Architecture; Climate Change; Loggia; Spatial Justice; Urban Rehabilitation.

Manuscript ID: ICCAUA2025EN0079

Rethinking Educational Spaces: How Technology and Architecture Reshape Control and Social Dynamics in Schools

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Abstract:
As technology reshapes our lives, school buildings, too, are undergoing a dramatic shift in terms of their curriculum, modus operandi and building typologies. New tools and technologies, such as artificial intelligence, cloud-based systems, remote education, in addition to an ever increasingly networked society affects the way students learn, and teachers teach. In this paper, we explore a new school typology that converges digital and physical spaces and offers novel teaching and learning environments for the future generation of students and teachers. We survey new design approaches in education, compare existing transformations of other relevant building typologies, and illustrate the application of our findings on a real-world case study. First, we map out the program of physical and/or digital spaces of future school buildings, second, we develop new design approaches to converge the two, and finally, illustrate a replicable framework for a new school typology in Türkiye.
Keywords: Convergent Spaces; Building Typologies; School Buildings.

Manuscript ID: ICCAUA2025EN0080

Adaptive Architecture for Crisis: Integrating Health Facilities in Public Realm

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Abstract:
This research explores architectural strategies for bridging public spaces and healthcare facilities for improved crisis management. Centered on Miami, Florida—a city vulnerable to hurricanes, flooding, and health emergencies—the study employs comprehensive site analysis, a 5x5 risk matrix, and scenario planning to design adaptable small-scale healthcare infrastructure. The proposed solution connects healthcare facilities to elevated MRT transit systems and evacuation centers, ensuring accessibility for vulnerable populations. By leveraging public transit networks, the proposed design connects healthcare hubs to underserved communities and evacuation centers. By connecting healthcare facilities to public spaces, the design ensures seamless emergency services while supporting sustainable and adaptable layouts for crisis-specific needs, and enhanced accessibility for underserved populations. The findings highlight the role of architecture as a systematic process of converting public places into a crisis management mode merging healthcare in mitigating urban vulnerabilities and improving disaster response through flexibility and functionality under various crisis scenarios.
Keywords: Crisis Management; Healthcare Architecture; Public Space Design; Disaster Management.

Manuscript ID: ICCAUA2025EN0118

Water Lines and Urban Design - Lisbon's 'Liquid Framework' as a Conceptual Tool to Shape a New Sustainable Balance

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Abstract:
From Vitruvius's foundational architectural writings to Roman monumental infrastructure to Haussmann's renewed Paris, the human drive to manipulate water flow has determined cities' formal evolution. How can architecture today give shape to water sustainability? Departing from Moore's idea of spatial "liquid framework", this paper explores the interpretation of urban water and urban form as two intertwined city layers with an ever-tightening geometry and capillarity, continuously linked and synthetizing new urban and housing typologies. A conceptual matrix is proposed, unfolding water and urban design dualities. Lisbon's case study, like many related cities, can be described through this analytical model, in a two-direction temporal regard: looking back, a palimpsest of urban water's material and immaterial concepts overlapping in a downstream topography; and looking forward, a Mediterranean urban context facing future drought and flood risks, demanding opportunities for a new sustainable balance reconnecting natural flows with public space and built circularity.
Keywords: Liquid Framework; Urban Water; Urban Design; Palimpsest; Lisbon.

Manuscript ID: ICCAUA2025EN0126

How Can Smart City Technologies Be Utilized to Align With and Enhance the Principles of Islamic Architecture?

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Abstract:
In rapid urbanization, smart cities leverage technologies like AI and IoT to enhance sustainability and optimize resource usage. However, integrating these innovations raises concerns about preserving cultural identities, especially within Islamic architecture. Rooted in religious, cultural, and social principles, Islamic architecture emphasizes sustainability, privacy, harmony with nature, and community cohesion. This research explores how smart city technologies can align with Islamic architectural principles. The study examines the potential for harmonizing innovation with technological Islamic values using literature reviews, case studies, and community surveys. Examples like Masdar City in the UAE show how advanced technologies can coexist with traditional Islamic design elements. Community surveys highlight opportunities and challenges, including privacy, social interaction, and economic accessibility. The findings stress the importance of integrating Islamic architectural values into smart city frameworks to preserve cultural heritage and promote sustainability. Recommendations are provided for designing future cities that balance technological progress with cultural authenticity.
Keywords: Smart city; Islamic architecture; Technology.

Manuscript ID: ICCAUA2025EN0127

Deanthropomorphizing AI: Human-Machine Continuum in the Post-Artificial Era

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Abstract:
The paper challenges the persistent skepticism toward AI's creative capabilities, which often hinges on the assumption that human traits, such as inspiration, intuition, consciousness, spontaneity, will, or emotion, are a prerequisite for creativity. This line of argumentation relies on an anthropomorphic approach that is unable to imagine/accept non-human modes of perception, cognition, and agency. Instead, the paper suggests adopting what Ian Bogost calls "alien phenomenology," viewing AI as possessing its own non-human intelligence. Adopting methods from apophatic theology allows for a better appreciation of this "alien" intelligence. In theological thinking, apophatic theology, is defined as a way of approaching the Divine, not through defining its qualities, but rather via negation, emphasizing what lies beyond human understanding. Accepting AI as an "alien intelligence" shifts the role of the artist to one of critique and curation, emphasizing the artistic talent in recognizing unexplored alien forms of beauty that AI-generated works can produce.
Keywords: AI; Post-Artificial; Creativity; Alien Intelligence; Alien Phenomenology.

Manuscript ID: ICCAUA2025EN0128

Adaptive Hybrid Panels for Smart Skins: Transforming Envelopes with Wood and Shape Memory Polymers

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Abstract:
This study explores the integration of hybrid Wood/Shape Memory Polymer (SMP) panels in creating smart skins, focusing on adaptive building envelopes and facades. By leveraging the shape memory behavior of SMPs, these hybrid panels transform autonomously in response to temperature changes, offering a sustainable alternative to traditional mechanically-driven systems. Employing Material-Driven Adaptive Design (MDAD), the research develops and tests prototypes using kerfing and lamination techniques. These panels transition between flat and curved geometries without external actuators, enabling dynamic shading, ventilation, and aesthetic adaptability. Results demonstrate the feasibility of maintaining structural integrity during transformations, highlighting the panels' ability to function as self-sufficient, flexible facade components. This innovative approach reduces reliance on external energy, lowers maintenance costs, and expands the design possibilities for dynamic architectural surfaces. The study contributes to the field by redefining the envelope as an active interface, fostering more sustainable, responsive, and interactive building environments.
Keywords: Shape Memory Polymer (SMP); Smart Materials; Material-Driven Adaptive Design; Adaptive Design; Design Prototypes.

Manuscript ID: ICCAUA2025EN0135

A Phenomenological Dialogue Between Nature and Humanity: Traces of Local Knowledge in Marco Casagrande's Architecture

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Abstract:
Architectural phenomenology goes beyond stylistic boundaries, viewing architecture as an experiential tool that engages the perceptual and sensory dimensions of the subject, interpreting it as a "place" within the continuous human experience of space and time. This study explores the concept of 'place' and related phenomena like 'spirit of place,' 'place-making,' 'atmosphere,' 'belonging,' and 'experience.' Marco Casagrande's Bug Dome, Cicada, and Sandworm structures are analyzed phenomenologically. These structures are significant for examining the components of 'place' and their role in fostering a dialogue between humanity and nature. The study explores the similarities and differences between the structures, focusing on the use of locally-based construction techniques and materials. It discusses how these techniques serve architecture as both a transformative process and a tool for social critique. The effects of these structures on the environmental atmosphere are described and their potentials are discussed in terms of "place-making."
Keywords: Architectural Phenomenology; Concept of Place; Marco Casagrande; Local Knowledge; Nature and Humanity.

Manuscript ID: ICCAUA2025EN0145

Experiential Interiors for Growth-Oriented Brands: Evaluating A Coffee Chain's Concept Design with SOM

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Abstract:
This study explores the role of interior design and user experience in shaping marketing strategies, focusing on a growth-oriented coffee chain's new interior concept design for future stores through the Service Opportunity Matrix (SOM). The SOM, a strategic tool in business and service management, provides a structured approach to understanding the stages and opportunities inherent in service processes, highlighting how service spaces are expanded, reconfigured, and structured to deliver value to customers. In the case study, a comprehensive analysis of customer experiences across eight diverse locations was conducted through contextual inquiries, on-site interviews, and an in-depth review of the entire customer journey. The findings were systematically grouped into five key areas: experience, brand communication, interior design, operational efficiency, and digital presence. Mapping these improvement domains to the SOM framework revealed the need for an integrated strategy that optimizes every touchpoint across both temporal and spatial dimensions, ensuring exceptional customer experiences while maintaining operational efficiency and brand authenticity.
Keywords: Interior Design; User Experience; Customer Journey; Service Opportunity Matrix; Economic Growth.

Manuscript ID: ICCAUA2025EN0152

AI in Architectural Education: A Comparative Study of Its Impact on the Stages of the Design Process, Student Work Outcomes, and Image Generation

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Abstract:
This study investigates the impact of Artificial Intelligence (AI) on architectural education, focusing on its role in improving the design process and outcomes. AI tools such as ChatGPT for conceptual text, OpenArt and MidJourney for design proposals, and AI Build for 3D printing were integrated into design workflows. Using case studies and surveys, the research compared students' work outputs before and after AI adoption in design sessions. Before AI tools were introduced, students often faced challenges in ideation, presentation quality, and design efficiency. However, after implementing AI, students demonstrated enhanced creative thinking, faster project completion, and a notable improvement in the clarity of their presentations. Surveys and feedback highlighted that the students felt more confident in their design concepts, with AI tools enabling them to refine their ideas and visualize them more effectively. Findings indicate that AI significantly improved students' overall design outcomes, promoting greater innovation and efficiency.
Keywords: AI; Architectural Education; Creativity; Style transfer; 3D Printing; ChatGPT; Midjourney; AI Tools; Design Outcomes.

Manuscript ID: ICCAUA2025EN0160

Exploring Architectural Ethics and Challenges for Sustainable Practices

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Abstract:
Globalization has an innumerable impact on society, irrespective of professional types. Architecture is one of them. Architectural practice, principles, and ethical perception have swiftly transitioned under the broad umbrella of globalization. Architects and architectural firms in today's world go beyond the epitome of national boundaries and work with diversified cultures. This brings us to a focal point of playing a dual role as a global citizen rather than being confined to the citizenship of the country of origin. This new role has posed a challenge to the architects to play a vital role in balancing client expectations, design ethics, local cultural values, and traditions while abiding by the local regulations in the global market, further deepening the ethical paradoxes of fair, transparent, and integrity in the profession. Hence, the purpose of this study is to investigate the moral issues and challenges posed to practitioners by the architecture profession. It aims to comprehend the synergistic impact of how ethical, cultural, social, and legal considerations influence decision-making in Bahraini architecture businesses. The study utilizes thematic analysis and in-depth interviews to collect perspectives from professionals, stakeholders, and active practitioners in the architectural field. The results will help raise ethical consciousness in architectural standards.
Keywords: Architecture; Heritage; Multisensory; Phenomenology.

Manuscript ID: ICCAUA2025EN0170

SHArch: The Research

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Abstract:
This paper talks about the results of the "SHArch – Second Hand for confiscated property" group has set the goal of investigating aspects of a complex but fascinating subject that sums up a series of issues to which architecture and academic research today is necessarily obliged to provide answers. If unfinished architectures, through new good practices, to some extent find a place in the debate on contemporary architecture, the theme of confiscated architectures continues to be a red flag of the critical issues strongly present especially in Italy, with a strong predominance of the phenomenon in southern Italy. The decision to use confiscated architectures led the research team to question not only the possible function that the space could acquire, but the objective was to be able to translate the artefact into an object that could avoid further consumption of land – in addition to that already used – so as to be able to maintain a minimal impact on the demolition of the pre-existence.
Keywords: Reuse; Confiscated Property; Unfinished; Pre-Existence; Upcycling.

Manuscript ID: ICCAUA2025EN0162

Conditions of the Moon as Assessment Criteria: Turkish Moon Bases Competition Case

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Abstract:
Sustainable human presence on the Moon is directly proportional to humanity's capacity to adapt to the Moon's environmental conditions. Designs on the lunar surface must be tailored to the physical conditions of the Moon. Within the scope of this study, a preliminary literature review identified atmosphere, pressure, wind, temperature, radiation, gravity, and dust as conditions that directly affect habitat design on the Moon, with each condition expressed as an evaluation criterion. As the sample area, five architectural design projects awarded in the Turkish Moon Bases National Idea Competition (Professional Category-2022) were analyzed. The main question of the study is to what extent these designs respond to the specified criteria. Based on the second literature review, which analyzed and clarified lunar conditions in depth, the projects were scored according to their compliance with the established criteria. Each project's site plan, plans, sections, 3D visuals, and project reports were evaluated on a scale of 100 points. In this context, a knowledge-based evaluation was conducted as an alternative to jury-based evaluation. Analyzing the projects from the Turkish Moon Base Competition is significant in providing a knowledge base for future studies in this field.

Keywords: Moon Base Habitat Design; The Turkish Moon Bases National Idea Competition; Architectural Design Assessment; Knowledge-Based Design.

Manuscript ID: ICCAUA2025EN0171

Smart Cities with Biosphere-Conscious Architecture

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Abstract:
This research explores integrating biosphere-conscious design principles into smart city development, emphasizing harmony between technological innovation and ecological sustainability. It aims to reduce energy consumption, enhance biodiversity, and mitigate urban environmental challenges by leveraging renewable energy systems, natural resources, and biophilic elements. Key strategies include passive design, green roofs, vertical gardens, and smart technologies for energy efficiency and climate adaptation. The study also highlights the role of intelligent infrastructure and Internet of Things (IoT) monitoring urban ecosystems while promoting human well-being through spatial psychology and thermal comfort. Case studies from Southeast Asia demonstrate practical applications of biosphere-integrated architecture in achieving nearly-zero energy building (NZEB) standards. This approach advocates a shift from anthropocentric urbanism to an ecocentric model, where architecture fosters regenerative relationships between urban environments and natural ecosystems, contributing to a sustainable, resilient, and biodiverse urban future.

Keywords: Biosphere-Conscious Architecture; Ecological Sustainability; Human Well-Being; Passive Design; Smart Architecture; Thermal Comfort.

Manuscript ID: ICCAUA2025EN0177

Biophilic Smart Cities: Harnessing Urban Green Spaces for Health and Well-being in Connected Environments

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Abstract:
The concept of biophilic smart cities centers on blending advanced technologies with biophilic design to improve urban living. In this model, urban green spaces play a key role, as their function encompasses both aesthetic value and the promotion of physical, mental, and social well-being for residents. By utilizing interconnected infrastructure, biophilic smart cities enhance the management of natural resources, improve air quality, and strengthen resilience to environmental challenges. This research examines how integrating nature into smart cities can create healthier and more sustainable urban environments. This article aims to integrate the core principles of biophilic smart cities into the urban fabric of Tunisia offering a new perspective for sustainable urban development.

Keywords: Biophilic Smart Cities; Technologies; Biophilic Design; Urban Green Spaces; Well-Being; Sustainable Urban Environments.

Manuscript ID: ICCAUA2025EN0172

The Impact of Landmarks' Visibility on Student's Navigational Performance in Bahraini Primary Schools: A Space Syntax and Behavior Analysis

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Abstract:
Architectural Characteristics of school-built environments significantly impact students' learning experiences, perceptions, and behaviors. While existing literature predominantly focuses on adults' perceptions, research on navigational performance often overlooks the critical role of visual landmark visibility in fostering students' self-confidence, safety, and well-being. Therefore, this study addresses the gap between theoretical frameworks and practical applications by examining the impact of landmarks' visibility on navigational behavior, aiming to improve the spatial experience for primary school students in Bahrain. The study integrates Space Syntax through Visibility Graph Analysis to assess landmark visibility across two primary school buildings. It also employs behavior analysis through descriptive frequency count to evaluate students' confidence levels and confusion during the navigational process. The qualitative and quantitative results reveal that landmarks' visibility significantly impacts navigational performance, offering recommendations to designers and policymakers to curate school designs that enhance students' learning experience while promoting their mental and physical well-being.
Keywords: Navigational Performance; Primary Schools; Visual Landmarks; Visual Graph Analysis; Behavioral Analysis.

Manuscript ID: ICCAUA2025EN0179

Implementing an Intelligent Monitoring System to Enhance Energy Efficiency and Support Decarbonization in Sustainable Buildings

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Abstract:
This paper investigates the implementation of an intelligent monitoring system aimed at optimizing energy efficiency and advancing decarbonisation strategies in sustainable buildings. With the increasing global emphasis on reducing carbon emissions, buildings are pivotal in meeting sustainability objectives. The proposed system integrates low-cost sensors for real-time monitoring and outlier detection, enabling continuous assessment of energy consumption and building performance. Utilizing an Internet of Things (IoT) framework, the system focuses on daily monitoring of heat flux through building envelopes with varying geographical orientations. By capturing real-time data, the system facilitates the identification of energy inefficiencies and supports proactive adjustments for enhanced energy management. The results highlight the system's potential to significantly contribute to decarbonising buildings, improving thermal performance, and achieving sustainability goals while minimizing energy waste and operational costs. The proposed approach offers a scalable solution for enhancing energy efficiency in both new and retrofitted buildings.
Keywords: Sustainable Building; Decarbonisation; Energy Efficiency; Intelligent Monitoring System; Internet Of Things.

Manuscript ID: ICCAUA2025EN0188

Architectural Mind in Transition

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Abstract:
Background: the research developed in the field of Architecture Education, considering the preceding texts about an Architectonic Mind. Purpose: to "draw" a turning point, based on the previous research, so that, through those results, we can give an answer to the new challenges. Methodology: based on a critical analysis, to revisit concepts, in a changing world context, towards the discovery of new methodologies, reflecting in the present and future concerns and expectations. Results and conclusions: the idea is to "close" a "step", through the review and conclusion of the earlier investigations and formulate the construction of a new path, where new premises emerge, so that we can prepare the future architects, aware of the condition of the real world now, but conscious, however, of the pillars on which the today demanded transformations are based on.
Keywords: Architectural Mind; Architecture Education; Research and Teaching.

Manuscript ID: ICCAUA2025EN0182

A Psychosocial Approach to Designing Healthcare Spaces for People with Tourette Syndrome and OCD. Case of Study in Algeria

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Abstract:
This study explores the psychosocial dimensions of designing healthcare environments tailored to individuals with Tourette Syndrome (TS) and Obsessive-Compulsive Disorder (OCD). The paper emphasizes how spatial configurations, sensory stimuli, and cultural context influence patient well-being and therapeutic outcomes, by integrating principles of environmental psychology and inclusive design through a case study of an Algerian healthcare facility. This research adopts a mixed-methods approaches, including questionnaire with patients and clinicians, alongside observational analysis, its engages also the thinking and social design approach. The Key findings highlight the need for adaptable spaces that mitigate sensory overload and promote autonomy through flexible layouts. It underscores the importance of collaborative, patient-centered design processes that address the unique psychosocial challenges of TS and OCD, advocating for multidisciplinary partnerships between architects, healthcare providers, and neurodiverse communities. This approach not only improves therapeutic efficacy but also fosters dignity and social inclusion, offering a model for low-resource settings globally.
Keywords: Psychosocial Approach; Healthcare Spaces Design; Tourette Syndrome; OCD; Algeria.

Manuscript ID: ICCAUA2025EN0193

Enhancing Well-Being in High-Rise Residential Buildings by Biophilic Design in Erbil, Iraq

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Abstract:
Understanding how nature impacts mental health highlights the importance of biophilic design for residential towers. Nature-inspired architectural solutions are essential to connect inhabitants with natural environments, particularly in rapidly growing cities like Erbil. This can improve life quality and positively influence the residents' mental health. This paper investigated how Biophilic Design can nurture a sense of well-being and promote sustainable practices for high-rise residential buildings. A mixed methodology was employed: a quantitative survey of users' feedback and qualitative examinations of analyses of biophilic elements across selected case studies. The results show a correlation between residents' enhanced mental health and applying natural or natural-inspired elements such as greenery, materials, colors, and lighting fixtures. The research uncovered a rising interest in the significance of nature-inspired design in urban housing towers, backing Biophilic Design as a valuable strategy for creating healthier and more sustainable living environments.
Keywords: Biophilic Design; Residential Towers; Mental Health; Well-being; Sustainable Architecture.

Manuscript ID: ICCAUA2025EN0197

Sacred Patterns in Ottoman Architecture: Evaluating Mimar Sinan's Masterpieces through A Pattern Language

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Abstract:
Ottoman mosques represent a pinnacle of sacred design, seamlessly integrating spiritual, cultural, and functional elements. While Christopher Alexander's A Pattern Language have contributed to secular and sacred spaces globally, their systematic application to Ottoman sacred architecture remains absent—limiting insights into how universal patterns adapt to ritual needs, symbolism, and communal dynamics. This study bridges this gap by analyzing Sinan's Şehzade Mosque through Alexander's framework. Using qualitative methods—including comparative pattern mapping, and visual analysis—the research identifies key patterns and proposes new ones specific to sacred architecture. The findings show that Sinan's designs embody timeless principles, redefining A Pattern Language as a transformative tool for decoding sacred spatial logic, while also advancing sacred architecture theory and offering a transferable lexicon for contemporary projects.
Keywords: Sacred Spaces; Pattern Theory; Şehzade Mosque; Mosque Architecture; Islamic Architecture Principles.

Manuscript ID: ICCAUA2025EN0214

Exploring the Impact of Climate Change on Energy Performance of a Thermal Regulation-Compliant Envelope in Algeria

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Abstract:
Climate change would play an important role in increasing temperature which could directly impacts the energy performance of buildings worldwide. The residential sector could play a crucial role in managing climate change issue, as it consumes over 46 % of final energy consumption. In arid zones where temperature already poses challenges, it is important to explore the long-term effectiveness of the actual thermal regulations in ensuring a correct thermal comfort. This study explores the limits and adaptability of Algeria's thermal regulation standards by analyzing the thermal behavior of a rural house designed in compliance with the current Algerian construction code. The method adopted relies on a comparative thermal simulation approach considering historical and the four RCPs, representative concentration pathways as considered by the IPCC. The results obtained highlight a temporal effectiveness of the Algerian thermal regulation under future climate change scenarios especially for cooling energy load. The study underlines the need to improve the thermal resistance of the opaque envelope and the larger widows would become counterproductive. This study highlights the need to revise Algeria's thermal regulation to enhance buildings' climate change resilience. Further research should focus on refining adaptive envelope guidelines and exploring their cost-effective as well as its responsiveness to climate change in the Algerian context.
Keywords: Thermal regulation; Algeria; Climate change; Arid zone; Thermal simulation.

Manuscript ID: ICCAUA2025EN0226

Harnessing the Power of Healthy Rhythmic Daylight: A Simulation-Based Approach in Healthcare Environments

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Abstract:
This research aims to examine and evaluate the presence and quality of rhythmic daylight in healthcare facilities, particularly in patients' rooms. The study evaluates whether the natural lighting design within these rooms simulates and mimics rhythmic patterns found in natural daylight. Using computer simulation tools, such as VELUX Daylight Visualizer and Rhino with ALFA, this research evaluates key daylight performance metrics, including daylight illuminance, color temperature, daylight factor, daylight availability, and the melanopic/photopic ratio in selected patient rooms at King Abdullah University Hospital (KAUH) in Irbid City. Results indicate that current daylight conditions fail to provide adequate exposure to rhythmic daylight cycles, potentially disrupting patients' circadian regulation. This study emphasizes the need for evidence-based daylighting strategies that integrate circadian-supportive design principles into healthcare architecture. These strategies aim to create environments that promote better health outcomes and well-being in healthcare settings.
Keywords: Rhythmic Daylight; Circadian Health; Simulation; Healthcare Settings.

Manuscript ID: ICCAUA2025EN0232

Developments of Medieval Romanesque and Byzantine to Modern Architecture through the Gothic: Recourse to the Darwin's Theory

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Abstract:
This study appraised the developments from Medieval Byzantine, Romanesque, and Gothic styles to Modern Architecture through a historical deductive research method. It posits that developments in Gothic and Modern Architecture were adapted from the Romanesque by what Darwin implied in the human and animal body, as beneficial selection. In this way, the study observed that major features of the Romanesque are copious in the Gothic and Modern Architecture. However, the study showed that this was further inflected in response to the demands of the era. The study observed that these demands in Gothic and Modern Architecture are a response to climate change and technical improvements in ecclesiastical architecture respectively. Thus, this study attempts to contribute to the discourse relating the human body and the changing demands of eras to architecture.
Keywords: Byzantine; Romanesque; Darwin; Musculoskeletal; Gothic Architecture.

Manuscript ID: ICCAUA2025EN0238

Mapping the Density, Diversity, and Digitization of the 21st Century: The Diagrammatic Architecture of MVRDV

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Abstract:
In today's rapidly changing architectural environment, the need for new approaches to generate knowledge is increasingly important. In this era of growing complexities, diagrams have become a crucial tool in architecture, establishing the relationship between the abstract and the concrete. This research aims to explore how diagrams can be utilized to address the challenges related to density, diversity and digitization of the 21st century and provide insights into the diagram's potential future applications. The qualitative content analysis method has been adopted, with data gathered from the unbuilt/diagrammatic works of MVRDV, a firm known for its innovative and speculative projects in the field. Findings revealed that diagrams are mostly utilized to shape forward-thinking designs, unite stakeholders, integrate data and technology into architectural spaces, and discuss environmental issues. This study emphasizes the potential of diagrams in linking architectural practice to contemporary challenges, suggesting that this potential could be further explored through various design examples and discourse in the future studies.

Keywords: Diagram; Density; Diversity; Digitization; MVRDV.

Manuscript ID: ICCAUA2025EN0244

The Alliance of BIM and Artificial Intelligence: Challenges for a Reinvented Future – The State of the Art

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Abstract:
The alliance of Building Information Modeling (BIM) and Artificial Intelligence (AI) is crucial for transforming construction management, especially for fostering more efficient and innovative practices. Despite progress in BIM and AI integration, challenges persist, such as interoperability between different platforms and data structures, as well as concerns over data security when AI algorithms are applied in construction projects. This study aims to examine these challenges and propose strategies for successfully integrating AI into BIM workflows, enhancing efficiency and security within construction management. A literature review was conducted to examine existing research on BIM and AI integration, identifying key challenges, gaps, and proposed solutions for better interoperability, data security, and workflow optimization. The study advocates adopting standardization protocols and unified APIs to improve data exchange between BIM and AI systems. It also highlights the importance of data encryption, AI skill development, and a comprehensive training framework within organizations to ensure the successful implementation of AI-integrated BIM.

Keywords: Artificial Intelligence; BIM Adoption; Construction Sector; Data Synchronisation; Security Protocols; AI Skills; Digital Transformation.

Manuscript ID: ICCAUA2025EN0245

Review on the Integration of Artificial Intelligence in Parametric Urban Design and Outdoor Thermal Comfort

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Abstract:
Artificial intelligence (AI) has shown significant potential in predicting physics-based simulation results, offering faster predictions. Urban design often relies on simulation, and this paper focuses on outdoor thermal comfort (OTC). Iterative design can be enhanced through parametric urban design (PUD). However, simulations are time-consuming, which disrupts the design flow. Integrating AI into PUD and OTC prediction presents a transformative opportunity. AI-powered PUD frameworks enable urban designers to optimize building forms and layouts for improved OTC while providing real-time feedback. This paper reviews state-of-the-art methodologies, tools, and applications of AI in PUD and OTC, highlighting its potential to improve sustainability in urban environments. By addressing key challenges and exploring future directions, this review underscores AI-powered PUD frameworks' potential to revolutionize urban design practices, significantly reducing prediction times for OTC. While still in its early stages, AI's predictions, though not as accurate as simulations, are close enough for early design stages.
Keywords: Artificial Intelligence; Parametric Architecture; Outdoor Thermal Comfort; Generative Design; Urban Design; Machine Learning.

Manuscript ID: ICCAUA2025EN0246

The Role of History in Architecture Design: An Analytical Research Study

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Abstract:
Redefining History in Architecture Education through various educational theories and concepts can be termed an innovative approach that seeks to augment how history is taught and integrated within the architectural discourse. The learning theories of Behaviourism, Cognitivism, Constructivism, Humanism, Experiential, Transformative, Connectivism, Bloom's Taxonomy, among a few others were critically analysed for the purpose of this study. The theories were understood in their existing context and further understood in the context to their possible applications towards redefining the role of history in architecture education. The theories collectively offer different perspectives on learning and teaching that can be applied to improve how students engage with the subject of architectural history, enabling more dynamic, meaningful, and enriched teaching-learning experiences. The study undertakes an analytical research approach and hence is more qualitative and exploratory in nature. The theory of constructivism came out as a more appropriate approach for application in architecture education. The study opens further avenues of education theories research in context to history, design and architecture education holistically.
Keywords: Learning Theories; Analytical Research; Architecture Education; Redefining History Role; Architecture Design in India, Constructivism.

Manuscript ID: ICCAUA2025EN0250

A Home in the Home: Domestic Servants' Residences Within the Athenian Apartment Buildings of the Pre-War Period

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Abstract:
The article explores the domestic female-workers' quarters within the urban Athenian apartments of the pre-war period. We argue that they form a specific spatial condition linked to the social phenomenon of the newly formed bourgeois class in Greece and the new social role of the bourgeois women. Contrary to the western models, these rooms were not located in attics or basements but were forming the core part of the house itself, sheltering a controversy relation of discrimination and inclusion between the family and the workers. Following a qualitative research method, we examine the legal framework, the structures and life within these places, concluding with how these places constitute a particular model of residence and activity of the "service personnel" and the new way of performing domestic works. We highlight these places as an important piece of urban and social history and, somehow, as the Genius Loci of these pre-war buildings.
Keywords: Architecture; Domestic Workers; Dwelling; Social Interaction; Identity.

Manuscript ID: ICCAUA2025EN0262

AI-Enhanced Innovation: Blending Contemporary Aesthetics with Islamic Heritage

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Abstract:
Artificial intelligence (AI) has transformed various fields, including architecture. Islamic architecture elements like domes, arches, and geometric patterns have been reimagined in simpler, occasionally abstract forms in contemporary architecture, which blends traditional aspects with contemporary aesthetics and technologies. The aim of this study is to Investigate the application of AI-driven in modern Islamic architecture design. Based on experimental methods, the study explores how to create modern Islamic architectural designs inspired by traditional principles using AI image generation tools like Leonardo AI, Prome AI and Midjourney. The study analyses the outputs each AI-driven tools in representing modern Islamic designs that are both visually beautiful and culturally appropriate. The results demonstrate how AI tools can help designers and architects combine modern innovation with traditional elements. It also highlights the limitations and challenges of AI imaginary in reflecting Islamic Architectural principles. It concludes with some futuristic possibilities of integration AI-driven with Islamic Architecture.

Keywords: Artificial Intelligence; AI-driven; Contemporary Architecture; Islamic Architectural; Traditional Elements.

Manuscript ID: ICCAUA2025EN0266

Traces of Local Identity in High Rise Building facades in Manama, Kingdom of Bahrain

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Abstract:
Manama's Skyline has witnessed a rapid evolution in the formation of High Rise Buildings during the last two centuries. The emergence of the fully glazed façade has uplifted the image of the city to new design directions influenced by global trends and technological advancements. On the contrary, Manama is well known for its rich cultural and historical values, which urge its preservation to transfer these values over generations continually. Therefore, New High Rise buildings are questioned about their implementation to withstand Bahrain's climate and to adapt to its cultural context. This research aims to examine the current design trends, focusing on integrating innovative technologies and sustainable practices in relation to the development of local identity. Selected case studies are examined to illustrate how current design trends can be applied to meet local identity. Synthesizing data from case studies and the questionnaire provides insight into effective façade design strategies for incorporating local identity in high-rise buildings. The findings contribute to the ongoing discourse on sustainable architecture in the Gulf region and offer practical recommendations for future developments.

Keywords: Architects; Architectural Firms; Building Façades; Bahrain; Façade Design.

Manuscript ID: ICCAUA2025EN0267

Towards Eco-Friendly Brick Production in Rajshahi: Overcoming Barriers to Transition from Traditional Practices

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Abstract:
Traditional clay bricks are the most used construction material in Bangladesh, yet its manufacture pose considerable environmental and health problems. Pollution from energy-intensive processes has led to calls for a switch to automated, cleaner manufacturing. The transition to automation is being pushed by governments and other organizations. This study investigates the obstacles of the shift from traditional to automated brick manufacture in Rajshahi, Bangladesh's third-largest metropolitan area, using surveys and interviews with kiln owners and operators at the root level. The findings show that approximately 90% of kilns still utilize polluting Fixed Chimney Kilns (FCKs), with little awareness of sustainable alternatives. Excessive investment, lack of experience, limited access to subsidies, qualified personnel, and equipment are all significant impediments. This paper identifies policy and technology options that will enable this transformation. The findings give a framework for policymakers to promote environmentally friendly brick production throughout Bangladesh.

Keywords: Clay Brick Industry; Sustainable Brick Manufacturing; Environmental Challenges; Policy Frameworks.

Manuscript ID: ICCAUA2025EN0271

Tools and Lifehacks for Participatory Design of Public Spaces With Children 5-16 as Co-authors

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Abstract:
The workshop explores the transformative potential of children's empowerment in shaping public environments. It provides insights why participatory practices are essential and how they differ from urban placemaking with adults. Participants will delve into practical methodologies that engage young children and learn how to harness children's ideas to enhance public spaces. Architects, educators and psychologists present an overview of the theoretical framework, highlighting unique challenges and opportunities, the crucial conditions for participation. Through interactive format, we demonstrate techniques for interpreting children's wishes and assessing their involvement in decision-making processes. Participants gain practical tools to support children's self-expression and active participation. The workshop cover methods for co-creating tangible, contextually relevant projects with kids, fostering a strong sense of identity and community. We share real-world examples and outcomes, illustrating how these practices transform physical spaces and rejuvenate relationships within the school, promoting collaborative and project-based learning.

Keywords: Co-design; Participatory Design; Kids as Co-authors; Placemaking; Early Year Children.

Manuscript ID: ICCAUA2025EN0272

Achieving Sustainability Through Retrofitting in the Retail Sector: A Case Study of Carrefoursa

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Abstract:
Within the framework of SDG 7: Affordable and Clean Energy, this research explores recent energy efficiency initiatives, with a particular focus on the retail sector. Following a comprehensive literature review on sustainability and global retrofitting strategies and best practice for mall buildings, the study examines CarrefourSA's implementations in Turkey as a notable example of innovative energy management, renewable energy integration, and AI-supported systems. A SWOT analysis is conducted on the İstanbul İstinye Hypermarket Solar Power Plant Integration Project, which has reduced the store's annual energy consumption by 45%—a major step toward reducing fossil fuel dependency and minimizing environmental impact by preventing 374.8 tons of carbon emissions annually. The findings will underscore the potential of retrofitting in sustainable architecture and foster discussions on how such initiatives can serve as a benchmark for the retail industry.

Keywords: SDG 7; Retrofitting; Mall Buildings; Energy Efficiency; Renewable Energy; Retail Sector.

Manuscript ID: ICCAUA2025EN0279

Bauhaus Principles and Reflection on Design by Women

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Abstract:
The Bauhaus school was a revolution in itself, it had an entirely different approach to teaching students and that is what made it famous and a milestone in design education. But what is often forgotten is that apart from important men at Bauhaus, there was this group of women at Bauhaus who made innumerable contributions to making it the Bauhaus it ultimately became. They became the masters of their respective arts and this was an entire journey that displays their hard work and determination to learn. They made many artifacts not only in the women-dominated weaving workshops but also in the ceramic, wood, and metal departments. This research aims to explain Bauhaus movement, the impact of the women at Bauhaus movement, and their concept on design. The examined examples have been chosen among the valuable units in order to be clear and compare the way the supporters express their examples.

Keywords: Bauhaus Movement; Women at Bauhaus; Bauhaus Design.

Manuscript ID: ICCAUA2025EN0289

Extended Reality (XR) Technology in ADHD-Friendly Classroom Design

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Abstract:
The educational environment in elementary schools significantly impacts the learning process, children's physical and mental health, and student achievements. This study aims to explore how Extended Reality (XR) technology transforms classroom design into engaging and supportive environments for students with ADHD (Attention Deficit Hyperactivity Disorder). The literature study collected data from four schools in the United States to understand the current classroom challenges for ADHD students aged between 6 and 11. Moreover, it explains the technology-based learning method and the implementation of immersive technology in classrooms for individuals with ADHD. The research uses a quantitative approach; a comprehensive survey reveals educators' perspectives on Extended Reality (XR) as a tool for ADHD-friendly classroom design. The results highlight both enthusiasm and concerns regarding XR implementation. This research summarizes the key findings and proposes a roadmap for integrating XR into ADHD education.

Keywords: Children with ADHD; Classroom Interior Design; Contemporary Furniture Design; Extended Reality (XR) as a Learning Tool; ADHD Education.

Manuscript ID: ICCAUA2025TR0039

Unmanned Shopping Stores and Interior Architecture

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Abstract:
Unmanned shopping stores represent a revolutionary shift in the retail industry, integrating artificial intelligence (AI), computer vision, and the Internet of Things (IoT) to streamline operations and enhance customer convenience. By eliminating traditional checkout processes, these cashier-less stores introduce new challenges and opportunities for interior architecture. This study explores the spatial implications of unmanned retail environments, focusing on store layout, wayfinding strategies, and material selection through a comparative case study of leading unmanned stores. Findings indicate that the success of these stores depends on flexible spatial configurations, intuitive navigation, AI-driven personalization, and adaptive lighting systems that enhance the user experience. However, concerns regarding security, data privacy, and accessibility remain significant challenges. As retail automation continues to evolve, interior architects must develop human-centered design strategies that balance technology with usability. Future trends suggest that augmented reality (AR), biometric authentication, and sustainable materials will further redefine the design of unmanned retail spaces.

Keywords: Unmanned Shopping Stores; Interior Architecture; Retail Automation; AI-Driven Design; User-Centered Spatial Planning.

Manuscript ID: ICCAUA2025EN0311

Traditional is Modern Vernacular

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Abstract:
This paper explores the potential of Indian vernacular construction techniques, specifically focusing on the use of recycled bricks as a core material, to create more energy-efficient and sustainable built environments. By considering the embodied energy of traditional materials and their ecological footprint, the study demonstrates how recycled brick can be used not only for wall construction but also for spanning, contributing to reduced energy consumption in buildings. Here, the authors have taken local case-study in Gujarat. The paper emphasizes the preservation and revitalization of nearly extinct local construction practices, advocating for a return to methods that are both environmentally and economically beneficial. This approach not only enhances the sustainability of the built environment but also stimulates local economies by fostering the revival of traditional craftsmanship. The integration of these techniques into contemporary construction practices could serve as a viable pathway towards a more resilient, energy-efficient, and culturally rich architectural future.

Keywords: Vernacular Techniques; Construction Techniques; Efficiency; Recycled Material.

Manuscript ID: ICCAUA2025EN0329

Comparative Study of Heating and Cooling Degree Days for Rajshahi: Evaluating Different Methods and Base Temperatures

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Abstract:
Bangladesh is not an exception to the global problem of building energy use. Ineffective cooling systems frequently result in discomfort and energy waste, particularly in Rajshahi, one of the warmest towns in the nation. As a simple way to calculate energy requirements for building comfort, Degree Days (DD) are often employed. However, a typical base temperature cannot be generalized and may not be the most appropriate fit for Rajshahi's Degree Days (DD) calculation. Thus, this study calculates Cooling Degree Days (CDD) using multiple approaches, including the Mean Degree Hours Method, Meteorological Office formulae, and the Hitchens formula, to obtain more precise energy requirements. By comparing these approaches, we aim to provide insights into Rajshahi's specific energy demands, promoting better energy planning and efficiency. A more accurate assessment of HDD and CDD can help optimize resource use, reduce energy waste, and improve indoor thermal comfort, contributing to sustainable urban development.

Keywords: Thermal Comfort; Degree Days Calculation; Energy Efficiency; Building Energy Demand; Rajshahi.

Manuscript ID: ICCAUA2025EN0333

Impact of Cognitive Load on Learning Outcomes in Architecture Project Management Curricula

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Abstract:
Cognitive Load Theory (CLT) provides a framework for optimizing instructional design by managing learners' cognitive demands. This study explores the impact of cognitive load on learning outcomes in architecture project management curricula at Constantine 3 University. Focusing on bachelor's degree students from the past five academic years (2020–2025), the research employs a structured survey to analyze three key variables: intrinsic cognitive load (complexity of project management concepts), extraneous cognitive load (inefficiencies in instructional design), and germane cognitive load (students' ability to integrate knowledge into practice). Learning outcomes are assessed through self-reported comprehension levels, perceived workload, and academic performance trends. The findings aim to identify cognitive barriers affecting student learning and propose evidence-based instructional improvements to enhance comprehension, engagement, and project management competency. This study contributes to curriculum development strategies and improved pedagogical approaches in architecture education.

Keywords: Cognitive Load Theory; Architecture Education; Project Management Curriculum; Learning Outcomes; Instructional Design.

Manuscript ID: ICCAUA2025EN0349

Standards and Institutional Approaches in Landscape Architecture Education: Case of Turkey

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Abstract:
Since the end of the 19th century, landscape architecture, a transdisciplinary profession, has defined a quality educational framework with many global and local institutions to train competent professionals. The education of landscape architecture in Turkey is predicated on experiential learning, emphasizing the triad of design, planning, and management within the purview of TYYÇ and PEMDER's standards. The objective of this research is to ascertain the current state of the landscape architecture education environment, considering the educational standards of Turkey. Within the scope of the study, the undergraduate program curriculums of 10 universities from various faculties in Turkey were analyzed. According to results, landscape architecture curricula in Turkey vary among institutions, emphasizing theory, design and technology, professional practice, structural materials, plant materials, and out-of-field courses. As a result, landscape architecture education in Turkey evolves while maintaining differences from established educational standards.

Keywords: Landscape Architecture; Education Standards; Intuitional Approaches, Faculty Diversity.

Manuscript ID: ICCAUA2025EN0350

Mental Worlds Shaped by Neuroarchitecture: The Effects of Indoor Materials on Brain Activity and Emotional Well-Being

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Abstract:
This research explored how interior materials—natural wood, processed wood, concrete, and metal—influence brain activity, cognition, and emotional well-being in university environments. The study involved 35 participants, using EEG to monitor brain responses, the Stroop test to assess cognitive performance, and POMS test to evaluate emotions, with data analyzed via machine learning and statistical methods. Findings revealed natural wood yielded the best cognitive outcomes (93% accuracy, quick responses), boosted emotional calm (low negativity, high vigor), and fostered neural relaxation. Processed wood showed comparable benefits, whereas concrete and metal correlated with reduced cognition, elevated stress, and emotional disturbance. EEG analysis effectively identified material-specific effects. The study highlights wood's potential to enhance productivity and mental health in learning and work settings, urging a rethink of material choices in design to improve urban living standards.

Keywords: Neuroarchitecture; Material Textures; EEG; Cognitive Performance; Emotional Well-Being; Interior Design; Wood.

Manuscript ID: ICCAUA2025EN0360

AI and Louis Kahn's Exeter Library: Reimagining Monumentality, Materiality, and Human Experience through Generative Design

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Abstract:
This research paper uses Exeter Library as a case study to investigate the intersection of artificial intelligence (AI) and Louis Kahn's design philosophy. Kahn's Exeter Library exemplifies his approach to monumental form, materiality, and human-centered space. The paper explores how AI, with its generative design and data-driven capabilities, can enhance or reinterpret Kahn's architectural ideals while maintaining the essence of the original design. Through AI's ability to process real-time data and respond to environmental and human factors, the paper examines the potential for adaptive design in Exeter Library, expanding the notion of Kahn's "served" and "servant" spaces. Additionally, AI's semiotic approach can reimagine the material qualities of Kahn's concrete and light, offering new ways to create dynamic and responsive spaces without losing the original emotional and metaphysical experience that defines Kahn's work.

Keywords: Architectural Design and Artificial Intelligence; Architectural Theory and Criticism; Architectural Semiotics; Louis Kahn; Exeter Library; Generative Design.

Manuscript ID: ICCAUA2025EN0361

Reimagining Architecture: The Impact of Sound on AI Visualization in Urban Environments

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Abstract:
This paper examines the role of artificial intelligence (AI) in visualising architecture and urban environments through the lens of semiotics, with a specific focus on how sound influences AI interpretation. While traditional semiotic analysis typically views signs as visual symbols, this research investigates how AI models process auditory stimuli, such as tone, emphasis, and rhythm variations, when translating spoken words into visual forms. By exploring how robots interpret and transform these sound-based signals into architectural and urban representations, the study aims to uncover new connections between language, sound, and design. Additionally, the research considers the implications of AI's ability to visualise language through sound, offering insights into a deeper, multi-sensory understanding of built environments and emphasising the evolving role of AI in urban planning and architectural representation. How can AI visualise architectural space using sound as a semiotic tool?

Keywords: Architectural and Urban, Artificial Intelligence; Architectural Theory and Criticism; Semiotics, Multi-Sensory Design; Sound Visualisation.

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Sustainable Architecture in Egypt: A Historical Analysis

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Abstract:
growth of what we may, in the present context, describe as "unsustainable architecture" began with the industrial revolution, as more and more new technologies were incorporated into the fabric of buildings. Before all these developments most buildings employed the properties of material and form to provide appropriate relationships between their uses and the environments. In other words, Buildings of the past were sustainable. This paper will present the background of Sustainable Architecture features in Egypt by studying ancient Egyptian architecture to address sustainability features through architecture heritage with focus on the ancient civilization and Islamic civilization in Egypt. The research methodology encompasses the establishment of criteria for evaluating sustainability of architectural products, followed by a comprehensive review of these products during period under study. Furthermore, the current state of sustainability practices will be examined in relation to historical approaches, allowing for the formulation of recommendations aimed at enhancing contemporary Egyptian architecture.

Keywords: Sustainable Architecture; Architectural Heritage; Historical Sustainability Practices; Egyptian Architecture.

Manuscript ID: ICCAUA2025EN0374

Data-Driven Insights into LEED Certification Trends: Saudi Arabia's Path to Sustainability

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Abstract:
This study investigates the adoption and impact of LEED certification in Saudi Arabia, aligning with the nation's Vision 2030 goals for sustainability and environmental stewardship. It analyzes trends over the past decade, focusing on certification growth, building types, rating levels (Certified, Silver, Gold, Platinum), and regional distribution. Data were collected from public directories and official LEED databases to identify patterns and driving factors. Findings reveal a consistent increase in LEED-certified projects, predominantly in major cities such as Riyadh, Jeddah, and the Eastern Province. Commercial and institutional buildings lead in certification, with a noticeable rise in Platinum-level projects. The study concludes that LEED certification is increasingly influencing sustainable urban development in the Kingdom. The insights provided can support policymakers, planners, and developers in advancing green building initiatives and promoting environmentally responsible construction practices across Saudi Arabia.

Keywords: LEED Certification; Saudi Arabia; Sustainable Buildings; Vision 2030; Green Urban Development.

Manuscript ID: ICCAUA2025EN0378

Traditional is Innovative: Redefining Role of Conventional Building Materials and Construction Methods

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Abstract:
In the pursuit of modernity, vernacular settlements are increasingly abandoning conventional building materials and traditional construction methods, resulting in the erosion of cultural identity and craftsmanship. This paper explores how contemporary architectural practices are reclaiming and revitalizing this intangible cultural heritage through hands-on training and deep learning. By examining several recent case studies, the research highlights how architects are redefining the "new vernacular" by integrating traditional techniques into modern practice. The architects' evolving roles—from designers to craftsmen—underscore a commitment to sustainable, culturally rooted practices. Regular academic documentation further contributes to this knowledge transfer, transforming learning into application. This study sheds light on emerging architectural models based on a "theory - research - practice" framework, emphasizing the architect's role in preserving and transmitting regional building traditions to future generations.

Keywords: Building Materials; Construction Methods; Traditional; Conventional; Innovative; Architectural Practices.

Manuscript ID: ICCAUA2025EN0383

Bamboo Dome: Tradition Meets Digital Manufacturing

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Abstract:
This study describes the planning and construction process of a bamboo dome structure within the framework of an Indian-German international project. The dome design is designed in collaboration with a group of students. Each student creates a design idea for each of the triangles on the dome with a specific design idea and connection details. The design aims to show how bamboo material can be designed with digital manufacturing techniques as well as constructed using traditional connection methods. The aim of the design build project is not only to construct a bamboo dome, but also to investigate how bamboo can be integrated with modern manufacturing techniques. In the design, specific connectors and surfaces are planned to be produced with digital fabrication tools integrated into the dome design. This research, therefore, aims to provide a model for sustainable and innovative building systems by investigating the integration of bamboo with digital fabrication.

Keywords: Bamboo; Dome; Digital Manufacturing; Sustainable Design.

Manuscript ID: ICCAUA2025EN0384

AI-Driven Knowledge Transfer in Architectural Education

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Abstract:
The development of the AI model Mini-Spyra marks a key advancement in applying AI to architectural education. Designed to store and provide architectural knowledge, Mini-Spyra supports planning processes, facilitates teaching, and enhances knowledge transfer. Using high-performance hardware and a flexible software environment, the model was systematically evaluated, fine-tuned, and optimized for reliability, adaptability, and response efficiency. Key improvements include iterative training, structured data formatting, and quantization, with Retrieval-Augmented Generation (RAG) enhancing answer quality through curated knowledge. Challenges such as data overload and hardware constraints were addressed through targeted optimizations. The project explores AI's integration into teaching, developing didactic models, conducting test runs, and evaluating effectiveness. The results contribute to the digital transformation of architectural education, improving knowledge accessibility and fostering innovation. This research was conducted within a "Young Researchers" project supported by the Jade University of Applied Sciences.

Keywords: AI, Architecture; Knowledge Transfer; Retrieval-Augmented Generation; Digital Education; Model Optimization.

Manuscript ID: ICCAUA2025EN0389

Shaping Space with Color: Perception, Emotion, and Representation

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Abstract:
Color plays a fundamental role in architectural design, influencing both perception and emotional response within a built environment. Beyond its aesthetic and psychological impact, color is also an essential tool in architectural representation, shaping the way ideas, concepts, and spatial intentions are communicated. From hand-drawn sketches to advanced digital renderings, the evolution of representational techniques has transformed how architects visualize and materialize design solutions. This paper explores the intersection of color, perception, and representation in architecture, analyzing how chromatic choices affect spatial experience, cultural interpretation, and design communication. Through a multidisciplinary approach, the study examines historical and contemporary examples, technological advancements, and material innovations that expand the possibilities of color application in both built space and architectural drawing. By bridging perception and expression, this research highlights the crucial role of color in architectural practice, not only as a design strategy but also as a medium for articulating spatial narratives and engaging with users.

Keywords: Color Theory; Architecture; Perception; Spatial Experience; Psychological Impact; Visualization.
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Optimizing Powerline Infrastructure Inspection, Monitoring and Asset Management Using UAVs and Artificial Intelligence Techniques

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Abstract:

Ensuring the reliability of powerline infrastructure requires efficient inspection and maintenance. Traditional methods are labor-intensive, costly, and expose workers to risks. This project integrates Unmanned Aerial Vehicles (UAVs) with Artificial Intelligence (AI) to enhance powerline inspection and predictive maintenance. The system employs a Tello drone to capture high-resolution images, which are processed using OpenCV and analyzed by a Convolutional Neural Network (CNN) model to detect faults such as insulator cracks, conductor sagging, and corrosion. Experimental results demonstrated an 85% fault detection accuracy, with the AI model correctly identifying and classifying defects in powerline components. The system's real-time monitoring capability significantly improved fault identification speed compared to manual inspections. Additionally, the asset management framework enabled proactive maintenance scheduling, reducing downtime by 40%. These findings highlight the potential of AI-UAV integration to improve infrastructure reliability, reduce costs, and enhance worker safety, making powerline management more efficient and sustainable.

Keywords: Unmanned Aerial Vehicles (UAVs; Artificial Intelligence (AI); Powerline Inspection; Asset Management; Convolutional Neural Networks (CNNs).

Manuscript ID: ICCAUA2025EN0403

Symbolism and Concept in Design: Lessons from Crafting the Alanya University Logo for Architecture Students

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Abstract:

Designing a logo for a university demands a forward-looking perspective, balancing institutional identity with local heritage. This study examines the strategic process of logo development for Alanya University, employing feasibility studies, search conferences, and focus group findings. Preliminary research entailed scanning existing university logos in Turkey for best practices, emphasising simplicity, distinctiveness, and scalability across diverse media. Drawing upon Alanya's natural environment, the final colour palette symbolises the region's multifaceted character, whilst geometric elements reference local historical motifs like the Seljuki star. Futura, a modernist font, was carefully chosen to convey professionalism and inclusivity, aligning with the institution's mission and values. The result is a flexible logo that resonates with staff, students, and the broader community, imparting a warm yet globally relevant image. This merges cultural authenticity with contemporary design principles.

Keywords: Logo Design; University Branding; Visual Identity; Institutional Identity; Graphic Design.

Manuscript ID: ICCAUA2025EN0395

Proposal For a Prototype Model Using Advanced Technologies for Post-Disaster Permanent Housing

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Abstract:

The process of rapid urbanization has made inadequate housing a significant global issue today. Displaced individuals affected by natural disasters, wars, and conflicts often face insufficient and unhealthy living conditions, which have severe impacts on societies. The efforts of governments to address this problem can sometimes be insufficient, especially during post-disaster and mass migration periods. Rapidly meeting the housing needs of victims is of utmost urgency, and leveraging technological advancements to accelerate intervention processes can contribute to more effective management of such crises. In this context, 3D printing technologies are among the innovative solutions proposed for fast and cost-effective construction. This study addresses an architectural model developed for constructing permanent housing using parametrical design methods and 3D printing technology. The proposed model aims to provide permanent and sustainable housing solutions to individuals affected by natural disasters in various geographical conditions.

Keywords: Post-Disaster Permanent Housing; Advanced Technologies; 3D Printing; Parametric Design.

Manuscript ID: ICCAUA2025TR0005

Comparative Analysis of LEED Certified Projects in Antalya Within the Scope of Sustainable Building Design

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Abstract:
LEED Certificate, which is of American origin, is an international evaluation system that reveals the sustainability of buildings. Within the scope of the study, LEED Certified projects in Antalya were scanned and their sustainability was examined. The purpose of the study is to reveal which criteria support the sustainability of projects within the scope of LEED. In addition, the five projects in the sample of the study were compared and their strengths and weaknesses were discussed. In the study, an evaluation was made on the score cards of LEED Certified projects using the descriptive design method. As a result, among these five projects, Güzel Enerji Fuel Station and Otokoç Otomotiv showed the highest success, receiving 73 out of 100 with the LEED O+M: Existing Buildings (v4.1) Gold certificate. Then, the LEED BD+C: Hospitality (v4) Gold certified Kempinski The Dome Belek Villas and the LEED BD+C: New Construction (v4) Gold certified Technopark Administrative Building achieved above average success by receiving 62 points out of 110. Finally, it has been revealed that the LEED BD+C: Hospitality (v4) Silver certified Süral Saray Hotel achieved a success slightly below the average by receiving 50 points out of 110.
Keywords: LEED Certificate; Sustainability; Antalya.

Antalya'daki LEED Sertifikalı Projelerin Sürdürülebilir Yapı Tasarımı Kapsamında Karşılaştırmalı Analizi

Özet:
Amerikan menşeili olan LEED Sertifikası, yapıların sürdürülebilirliğini ortaya koyan uluslararası bir değerlendirme sistemidir. Çalışma kapsamında Antalya'daki LEED Sertifikalı projeler taranarak sürdürülebilirlikleri incelenmiştir. Çalışmanın amacı LEED kapsamında hangi kriterler ile projelerin sürdürülebilirliğinin desteklendiğini ortaya koymaktır. Ayrıca çalışmanın örnekleminde yer alan beş proje karşılaştırılarak üstün ve zayıf yönleri ele alınmıştır. Çalışmada betimsel desen yöntemi kullanılarak LEED Sertifikalı projelerin skor kartları üzerinden bir değerlendirme yapılmıştır. Sonuç olarak bu beş projeden Güzel Enerji Akaryakıt İstasyonu ve Otokoç Otomotiv, LEED O+M: Existing Buildings (v4.1) Gold sertifikasıyla 100 üzerinden 73 alarak en yüksek başarıyı göstermiştir. Ardından LEED BD+C: Hospitality (v4) Gold sertifikalı Kempinski The Dome Belek Villas ile LEED BD+C: New Contruction (v4) Gold sertifikalı Teknopark İdari Binası 110 üzerinden 62 puan alarak ortalama üstü bir başarı göstermiştir. Son olarak ise LEED BD+C: Hospitality (v4) Silver sertifikalı Süral Saray Otel 110 üzerinden 50 puan alarak ortalamanın biraz aşağısında bir başarı gösterdiği ortaya konulmuştur.
Anahtar Kelimeler: LEED Sertifikası; Sürdürülebilirlik; Antalya.

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Evaluation of Spatial Uncertainty and its Elements in Different Types of Spaces

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Abstract:
Uncertainty in the field of architecture is a concept that shapes the design process, free from negativity, and can be analyzed through various subcategories. Spatial uncertainty, one such category, refers to the undefined nature of factors influencing space and offers flexibility, presenting a forward-looking approach to innovation in architecture. It can be categorized into three aspects: functional, formal, and user-oriented, enabling these elements to be analyzed through space. Recognizing these distinctions helps clarify the concept's complexity and assess its impact on the design process. The study proposes that spatial uncertainty, when approached systematically, can serve as a valuable tool, facilitating the design process. By examining elements of spatial uncertainty in diverse architectural examples, the research aims to provide a new perspective on its impact on design and contribute to the architectural literature.

Keywords: Uncertainty; Spatial Uncertainty; Functional-Formal-User-Oriented Uncertainty; Types of Spaces.

Mekansal Belirsizlik ve Unsurlarının Farklı Mekan Türlerinde Değerlendirilmesi

Özet:
Mimarlık alanında belirsizlik, tasarım sürecinde etkili olan, olumsuzluktan uzak bir kavramdır ve farklı alt kategorilere ayrılarak ele alınabilmektedir. Mekânsal belirsizlik, mekanı etkileyen birçok unsurun net bir şekilde belirlenmemesi durumunu ifade eder ve tasarım sürecinde esneklik sağlayarak, mimarlık bağlamında geleceğe yönelik yeniliklere açık bir yaklaşım sunmaktadır. Çalışma özelinde mekansal belirsizlik, fonksiyonel, formsal ve kullanıcı odaklı belirsizlik olarak ayrılmakta ve mekan üzerinden bu unsurlar analiz edilmektedir. Bu ayrımların belirlenmesi, kavramın karmaşıklığını anlamamıza ve tasarım sürecindeki etkisini daha kolay değerlendirmemize olanak tanımaktadır. Bu çalışmada, mekânsal belirsizliğin tasarımcı için sistematik bir şekilde ele alınmasıyla, belirsizliğin tasarım aracı olarak tanımlanarak süreçte kolaylık sağlayabileceği bir argüman olarak kullanabilmesini hedeflemektedir. Bu amaçla çalışmada mekânsal belirsizlik unsurları, farklı mekan türlerinden seçilen yapı örnekleri üzerinden incelenecek ve tasarım sürecine etkileri değerlendirilerek literatüre yeni bir bakış açısı ortaya konulacaktır.

Anahtar Kelimeler: Belirsizlik ; Mekansal Belirsizlik; Fonksiyonel-Formsal-Kullanıcı Odaklı Belirsizlik; Mekan Türleri.

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Aesthetic Architecture through Artificial Intelligence

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Abstract:
Artificial intelligence (AI), one of the newest technologies today, is rapidly changing our lives. AI is also making more effective changes in the fields of art, design and architecture. The inclusion of architecture, art and design processes in these sectors makes it easier to solve complex problems. On the other hand, the interaction of AI and architectural design has caused many discussions. AI design provides many recognized and important benefits such as fast and convenient data analysis. However, can AI's ability to produce visually appealing designs be a way to define the Concept and produce architecturally valuable and aesthetic designs? This study aims to create aesthetic and cultural designs by examining the designs created by AI using concept data. According to the research, it has been shown that AI can only work together with architects/designers, and can only create good results with the help of the imagination of architects and designers.
Keywords: Artificial Intelligence; Aesthetics; Architecture; Turkey.

Yapay Zeka ile Estetik Mimari

Özet:
Günümüzdeki en yeni teknolojilerden biri olan yapay zeka (YZ), hayatımızı hızlı bir şekilde değiştiriyor. YZ ayrıca sanat, tasarım ve mimarlık alanlarında da, daha etkili değişiklikler yapmaktadır. Mimarlık, sanat ve tasarım süreçlerinin bu sektörlere dahil edilmesi karmaşık sorunları çözmeyi kolaylaştırmaktadır. Diğer taraftan, YZ ve mimari tasarım etkileşimi çok sayıda tartışmaya neden olmuştur. YZ tasarımı, hızlı ve uygun veri analizi gibi birçok tanınmış ve önemli fayda sağlamaktadır. Bununla birlikte, YZ'nin görsel olarak çekici tasarımlar üretme yeteneği, Konsepti tanımlayarak, mimari değeri olan ve estetik tasarımlar üretmenin bir yolu olabilir mi? Bu çalışma, konsept verilerini kullanarak yapay zeka tarafından oluşturulan tasarımları inceleyerek, estetik ve kültürel tasarımlar oluşturmayı amaçlamaktadır. Araştırmaya göre, yapay zekanın yalnızca mimarlar/ tasarımcılarla birlikte çalışabileceğini, ve yalnızca mimarların ve tasarımcıların hayal gücünün yardımıyla iyi sonuçlar yaratabileceğini gösterilmiştir.
Anahtar kelime: Yapay Zeka; Estetik; Mimari; Türkiye.

Manuscript ID: ICCAUA2025TR0018

The Contribution of Glass Material to the Circular Economy: Recycling and Reuse Approaches

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Abstract:
In the construction sector, although glass is an indispensable building material due to its structural, aesthetic, and functional properties, its disposal at the end of its life cycle—as well as the raw material extraction and production processes required for new materials—contributes to an increase in environmental issues. This study aims to examine the contributions of recycling and reusing glass materials to the circular economy. Within the scope of this research, the life cycle of glass-based materials has been analyzed, and sustainable projects implementing reuse and recycling applications have been compared. The findings indicate that by reducing glass waste and enhancing resource efficiency in terms of energy and raw materials, environmental problems can be mitigated, thereby increasing sustainability in the construction sector.
Keywords: Glass Recycling; Circular Economy; Reuse Strategies; Sustainable Construction; Material Lifecycle.

Cam Malzemenin Döngüsel Ekonomiye Katkısı: Geri Dönüşüm ve Yeniden Kullanım Yaklaşımları

Özet:
İnşaat sektöründe cam, yapısal, estetik ve fonksiyonel özellikleriyle vazgeçilmez bir yapı malzemesi olmasına karşın yaşam döngüsünde sonunda camların bertaraf edilmesi ve yeni malzeme üretimi için hammadde, üretim gibi aşamalardaki süreçler çevresel sorunların artmasına sebep olunmaktadır. Bu çalışmada cam malzemenin geri dönüşüm ve yeniden kullanımlarıyla döngüsel ekonomiye katkılarının incelenmesi amaçlanmıştır. Çalışma kapsamında cam esaslı malzemelerin yaşam döngüsü incelenmiş, bu malzemelerin yeniden kullanım ve geri dönüşüm uygulamalarının yapıldığı sürdürülebilir projeler karşılaştırılmıştır. Bu uygulamalarla cam atıkları azaltarak, enerji, hammadde gibi kaynak verimliliğini artırarak çevresel sorunların azaltılabileceği ve inşaat sektöründe sürdürülebilirliğin arttırılabileceği görülmektedir.
Anahtar kelime: Cam Geri Dönüşümü; Döngüsel Ekonomi; Yeniden Kullanım Stratejileri; Sürdürülebilir İnşaat; Malzeme Yaşam Döngüsü.

Manuscript ID: ICCAUA2025TR0020

An Example of Public Art-Architecture Synthesis: TRT Orkut (Arı) Studio

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Abstract:
TRT Orkut Studio was designed in 1968 by architects Demirtaş Kamçıl and Rahmi Bediz, who played a transformative role in Ankara. Completed in 1971, the building, which is a complex that includes functions such as a school, cinema, theater, printing house, patisserie, wedding hall and office building, bears elements of the modern style. The building is also one of the rare examples of art-architecture synthesis in studios among public buildings with the ceramic panels of Ülkü Bora, Bingül Başarır, Hamiye Çolakoğlu and Cemil Eren, important ceramic artists of the period. By determining the surfaces where the artworks will take place during the design process, it appears as one of the strongest examples of art-architecture synthesis with the presence of artworks not only on the façade or entrance of the building, but also on uncommon surfaces such as columns and borders. This study aims to emphasize the relationship between the ceramic panels in TRT Orkut Studio and its space, its effect on the user's perception of space and its contribution to the spatial experience, and the importance of TRT Orkut Studio among the buildings in the art-architecture synthesis.

Keywords: TRT Orkut Studio; Art-Architecture Synthesis; Ceramic Wall Panel; Architecture; Art.

Kamusal Bir Mimarlık-Sanat Birlikteliği Örneği: TRT Orkut (Arı) Stüdyosu

Özet:
TRT Orkut Stüdyosu, 1968 yılında Ankara'da dönüştürücü rol oynamış mimarlar Demirtaş Kamçıl ve Rahmi Bediz tarafından tasarlanmıştır. Yapımı 1971 yılında tamamlanan; okul, sinema, tiyatro, matbaa, pastane, düğün salonu, işhanı gibi işlevleri de bünyesinde barından bir kompleks olan yapı modern üslubun öğelerini taşımaktadır. Yapı aynı zamanda içerisinde yer alan, dönemin önemli seramik sanatçıları Ülkü Bora, Bingül Başarır, Hamiye Çolakoğlu ve Cemil Eren'e ait seramik panoları ile mimarlık-sanat birlikteliğinin kamusal yapılar arasından stüdyolarda az rastlanan örneklerinden biridir. Sanat eserlerinin yer alacağı yüzeylerin tasarım sürecinde belirlenmesiyle, genelin aksine yalnızca yapının cephesinde ya da girişinde değil kolon ve bordür gibi sık karşılaşılmayan yüzeylerinde de eserlerin varlığıyla mimarlık-sanat birlikteliğinin güçlü örneklerinden biri olarak karşımıza çıkmaktadır. Bu çalışma, TRT Orkut Stüdyosu'nda yer alan seramik panoların bulunduğu mekân ile kurduğu ilişkiyi, kullanıcının mekân algısı üzerindeki etkisini ve mekân deneyimine katkısını; mimarlık-sanat birlikteliğinde yer alan yapılar arasında TRT Orkut Stüdyosu'nun önemini vurgulamayı hedeflemiştir.

Anahtar Kelimeler: TRT Orkut Stüdyosu; Mimarlık-Sanat Birlikteliği; Seramik Duvar Panosu; Mimarlık; Sanat.

Manuscript ID: ICCAUA2025TR0021

The Role of Computer-Aided Design in Architectural Education

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Abstract:
Computer-aided design (CAD) tools have transformed architectural education by offering enhanced precision, efficiency, and flexibility over traditional drawing methods. This study investigates the influence of CAD, especially AutoCAD, on architectural training, focusing on its impact on students' technical competencies, spatial understanding, and creative output. Survey findings from first-year architecture students suggest that CAD significantly improves technical drawing skills and streamlines the design process. However, some students report feeling creatively limited due to software constraints. Despite this, CAD enhances visualization and analytical thinking. The research highlights the importance of a balanced educational approach that integrates both hand-drawing and digital tools. A hybrid method is favored by many students as it supports both creative exploration and design accuracy. Ultimately, CAD programs function not just as design platforms but as essential educational resources. Future curricula should promote the strategic use of both traditional and digital methods to support comprehensive architectural development.

Keywords: Architectural Design; Architectural Education; Computer-Aided Design (CAD); Design Process.

Mimarlık Eğitiminde Bilgisayar Destekli Tasarımın Rolü

Özet:
Bilgisayar destekli tasarım (CAD) araçları, mimarlık eğitimini geleneksel el çizimi yöntemlerine kıyasla daha hassas, verimli ve esnek hale getirmiştir. Bu çalışma, CAD programlarının mimarlık eğitimindeki etkisini, özellikle teknik bilgi, mekânsal algı ve yaratıcılık üzerindeki rollerini incelemektedir. Birinci sınıf mimarlık öğrencileriyle yapılan anket çalışması, AutoCAD başta olmak üzere CAD programlarının teknik çizim becerilerini ve tasarım süreçlerini önemli ölçüde geliştirdiğini göstermektedir. CAD araçları görselleştirme ve analitik düşünmeyi desteklerken, bazı öğrenciler yazılımın belirli kalıplarının yaratıcılığı kısıtladığını düşünmektedir. Bulgular, geleneksel ve dijital yöntemlerin entegre edilmesinin önemini vurgulamaktadır. Öğrencilerin çoğu, yaratıcı esnekliği koruyarak projeleri daha verimli şekilde gerçekleştirmek için el çizimi ve CAD araçlarını birleştiren hibrit bir yaklaşımı tercih etmektedir. Sonuç olarak, CAD programları sadece teknik araçlar değil, aynı zamanda kapsamlı bir mimari beceri setini geliştiren eğitimsel araçlar olarak değerlendirilmektedir. Gelecekteki eğitim stratejileri, geleneksel ve dijital tasarım tekniklerinin dengeli entegrasyonunu teşvik etmelidir.

Anahtar Kelimeler: Mimari Tasarım; Mimarlık Eğitimi; Bilgisayar Destekli Tasarım (CAD); Tasarım Süreci

Manuscript ID: ICCAUA2025TR0025

Reproduction of Nature-Inspired Architectural Forms through Artificial Intelligence

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Abstract:
This study investigates the reproduction of biomimetic sustainable architectural forms through artificial intelligence tools and presents a comparative analysis between these AI-generated outputs and their built counterparts. The aim is understand to what extent AI models can reinterpret nature-inspired architectural forms. In this context, three iconic buildings were selected as samples: the Eastgate Center, inspired by termite mounds; the Clyde Auditorium, known for its armadillo-like shell; and the Bahai Temple, which draws its form from the lotus flower. Using text-based prompts, these structures were regenerated via DALL-E, DeepAI, and Midjourney. The resulting visuals were compared with the constructed buildings. Findings reveal that AI models can produce aesthetically creative designs; however, many of the outputs display formal complexities that exceed the capabilities of current construction technologies. While AI-generated visuals offer conceptual richness, their physical feasibility remains limited. This study offers an interdisciplinary perspective at the intersection of biomimicry, architectural design, and AI.

Keywords: Biomimicry; Sustainability; Architectural Visualization; DALL-E; Midjourney.

Yapay Zeka ile Doğa Esinli Mimari Formların Yeniden Üretimi

Özet:
Bu çalışmada biyomimikri temelli sürdürülebilir mimari formların yapay zeka araçlarıyla yeniden üretilme süreci incelenmiş ve bu üretimlerin inşa edilmiş gerçek yapılarla karşılaştırmalı analizi yapılmıştır. Çalışmanın amacı yapay zeka modellerinin doğa esinli mimari formları ne ölçüde yeniden yorumlayabildiğini anlamaktır. Bu bağlamda termit yuvasından ilham alınarak inşa edilen Eastgate Binası, armadillo benzeri dış kabuğuyla dikkat çeken Clyde Oditoryumu ve formunu lotus çiçeğinden alan Bahai Tapınağı örneklem olarak ele alınmıştır. Bu üç ikonik yapı DALL-E, DeepAi ve Midjourney yapay zeka modellerinde metinsel yönlendirmelerle yeniden üretilmiştir. Elde edilen görseller yapının inşa edilmiş haliyle karşılaştırılmıştır. Elde edilen bulgularda, yapay zeka modelleriyle üretilen tasarımlarda estetik olarak yaratıcı çıktılar oluştuğu ancak elde edilen görsellerin önemli bir bölümünün günümüz inşa teknolojileriyle gerçekleştirilemeyecek karmaşıklıkta olduğu görülmüştür. Bu durum, yapay zekâ üretimlerinin görsel düzeyde değerli olmasına rağmen fiziksel uygulanabilirliğinin sınırlı olduğunu ortaya koymuştur. Çalışma, biyomimikri, mimari tasarım ve yapay zekâ kesişiminde disiplinlerarası bir perspektif sunmuştur.

Anahtar Kelimeler: Biyomimikri; Sürdürülebilirlik; Mimari Görselleştirme; DALL-E; Midjourney.

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Examining the Concepts of Future and Experimentation in Architecture through Expo2025

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Abstract:
Architecture is a discipline that reflects changing trends, offering new perspectives on the evolving world and bridging the gap between the past and the present. Today's rapidly advancing technologies are influencing design in pavilions at fairs, exhibitions, Expos, and biennales, introducing innovative approaches. This study aims to examine the concept of experimentation and analyze how new approaches in materials, design processes, and production techniques are applied in pavilions designed for future-oriented projects. The study will focus on pavilions designed for Expo 2025 in Japan, examining them within the framework of the theme "Designing the Society of the Future for Our Lives" and the impact of the concept of experimentation on the design process. The analysis will evaluate innovative approaches in the form, materials, and structure of the pavilions. In recent years, the changing design paradigm, coupled with experimental approaches in pavilions, has increasingly reflected socio-cultural interactions as well as the influence of new technologies and production techniques. This process provides a fresh perspective on these new approaches, offering an opportunity to assess developments throughout the design process and creating a unique roadmap for the future of architectural design.
Keywords: Future in Design; Technology; Pavillion; Experimentation.

Mimaride Gelecek ve Deneysellik Kavramının Expo2025 Üzerinden İncelenmesi

Özet:
Mimarlık, değişen trendleri yansıtarak gelişen dünyaya yeni bakış açıları kazandıran ve geçmiş ile günümüz arasında köprü kuran bir disiplindir. Günümüzün hızla gelişen teknolojileri, fuar, sergi, Expo ve bienallerdeki tasarlanan pavilyonlarda yenilikçi yaklaşımlarla birlikte tasarıma etkisini göstermektedir. Bu çalışma, deneysellik kavramını incelemeyi ve geleceğe yönelik tasarımlarda kullanılan malzeme, tasarım süreci ve üretim tekniklerindeki yeni yaklaşımların pavilyonlarda nasıl uygulandığını analiz etmeyi amaçlamaktadır. Çalışma, Japonya'da gerçekleştirilecek Expo 2025 için tasarlanan pavilyonları "Yaşamlarımız İçin Geleceğin Toplumunu Tasarlamak" teması çerçevesinde ve deneysellik kavramının tasarım sürecindeki etkileri açısından inceleyecektir. İncelenen pavilyonlarda biçim, malzeme ve strüktür gibi unsurlardaki yenilikçi yaklaşımlar değerlendirilecektir. Son yıllarda değişen tasarım olgusunun pavilyonlar üzerindeki deneysel çalışmalarla, hem sosyo-kültürel etkileşimleri hem de yeni teknoloji ve üretim tekniklerin etkisi artmaktadır. Bu süreç, yeni yaklaşımlara farklı bir bakış açısı kazandırarak, mimari tasarımlarda gelişmeleri değerlendirme fırsatı sunmakta ve özgün bir yol haritası oluşturulmasına olanak sağlamaktadır.
Anahtar Kelimeler: Tasarımda Gelecek; Teknoloji; Pavilyon; Deneysellik.

Manuscript ID: ICCAUA2025TR0033

Artificial Intelligence in Architectural Education: New Learning and Design Approaches

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Abstract:
In recent years, artificial intelligence (AI) technologies have been increasingly incorporated into architectural design and education, offering advanced capabilities in data analytics, machine learning, and visual generation. AI-powered tools enable the optimization of design decisions, the provision of personalized solutions based on user needs, and the acceleration of parametric design processes. This study aims to examine the role of AI in architectural education by identifying its benefits and potential limitations. A qualitative research approach based on a comprehensive literature review. It systematically examines how AI tools can be utilized in architectural education to support students in solving design problems, analyzing different scenarios, and developing innovative solutions. Various AI applications are categorized according to their usage in design education, and their effectiveness is assessed through comparative analysis. The findings indicate that AI-assisted design processes offer architecture students new creative opportunities, helping them generate optimized solutions and explore diverse design alternatives.

Keywords: Artificial intelligence; AI tools; Data analytics; Design Education; Learning Methods; Visual Generation.

Mimarlık Eğitiminde Yapay Zekâ: Yeni Öğrenme ve Tasarım Yaklaşımları

Özet:
Son yıllarda yapay zekâ (YZ) teknolojileri, mimari tasarım ve eğitim alanlarında giderek daha fazla kullanılmaya başlanmış ve veri analitiği, makine öğrenmesi ile görsel üretim gibi ileri düzey yetenekler sunmuştur. YZ destekli araçlar, tasarım kararlarının optimize edilmesini, kullanıcı ihtiyaçlarına göre kişiselleştirilmiş çözümler sunulmasını ve parametrik tasarım süreçlerinin hızlandırılmasını mümkün kılmaktadır. Bu çalışma, yapay zekânın mimarlık eğitimindeki rolünü, faydalarını ve olası sınırlılıklarını belirleyerek incelemeyi amaçlamaktadır. Nitel bir araştırma yaklaşımı benimsenmiş olup, kapsamlı bir literatür taramasına dayanmaktadır. YZ araçlarının, öğrencilerin tasarım problemlerini çözmeleri, farklı senaryoları analiz etmeleri ve yenilikçi çözümler geliştirmeleri sürecinde nasıl kullanılabileceği sistematik bir şekilde ele alınmaktadır. Çeşitli YZ uygulamaları, tasarım eğitimindeki kullanım alanlarına göre kategorize edilmekte ve etkinlikleri karşılaştırmalı analiz yoluyla değerlendirilmektedir. Bulgular, YZ destekli tasarım süreçlerinin mimarlık öğrencilerine yeni yaratıcı fırsatlar sunduğunu; onların optimize edilmiş çözümler üretmelerine ve farklı tasarım alternatiflerini keşfetmelerine yardımcı olduğunu göstermektedir.

Anahtar Kelimeler: Görsel Üretim; Öğrenme Metodları; Yapay Zeka; Yapay Zeka Araçları; Veri Analitiği; Tasarım Eğitimi.

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Manuscript ID: ICCAUA2025EN0004

Tactical design as a strategy for innovation

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Abstract:
Tactical design is an emerging strategy for redeveloping disused or underused railway areas, combining temporary and participatory interventions with experimental urbanism. The research, conducted through mixed methods, included field analysis, interviews with local stakeholders and mapping of users' spatial behaviour. The interventions studied included temporary installations such as modular gardens, mobile public spaces and recycled street furniture designed to improve these areas' usability and social integration. The main results show an increase in community involvement and re-appropriation of public space, accompanied by a perceived improvement in the safety and attractiveness of the areas. The research implications suggest that tactical design can catalyse urban regeneration, facilitating the transformation of railway areas through more structured and long-term planning processes. These results offer a promising perspective for more sustainable and inclusive urban policies.

Keywords: Design; Tactical Design; Public Space; Experimental Urbanism; Innovation.

Manuscript ID: ICCAUA2025EN0012

Assessing the Impact of Integrated Building Management Systems on Energy Reduction and Sustainability Initiatives in a Selected Sydney Hotel

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Abstract:
This study analyses the effectiveness of Integrated Building Management Systems (iBMS) as an option to reduce Greenhouse Gas (GHG), such as carbon emissions and improving energy consumption in a hotel building within the busy urban areas of Sydney, Australia. In this research, a case study approach using quantitative data was employed to provide a comprehensive assessment. By time series analysis, 12-months worth of energy consumption data during pre- and post-implementation of iBMS in the selected hotel has been calculated and analysed using percentage reduction formula to identify whether there is a significant impact of implementing iBMS in reducing energy consumption. Although the system may require a considerable upfront costs, the overall benefits in a longer term fulfill its intended objectives. Since commissioning iBMS, the findings indicate a significant reduction in electricity and gas consumption, as well as carbon (GHG) emissions one year's time, by around 16, 18 and 21 percent respectively, which is on track in comparison with similar studies in other regions.

Keywords: iBMS; energy consumption; sustainability; hotel; Sydney.

Manuscript ID: ICCAUA2025EN0016

Impact of Green Roofs and Facades on Urban Microclimate Improvement (Case Study of the City of Batna)

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Abstract:
In the face of growing urbanization, green spaces play a crucial role in mitigating environmental risks such as the urban heat island effect, water runoff, and air pollution, all of which may worsen with climate change. However, urban densification and soil sealing limit available areas for horizontal greening. In this context, green facades utilize vertical surfaces that are significantly more extensive, promoting biodiversity, enhancing ecological networks, and improving the energy efficiency of buildings. This study aims to assess the impact of green roofs and facades on the outdoor climatic conditions of a residential neighborhood in Batna, Algeria. Initially, field measurements were conducted. Following this, a numerical approach using ENVI-met software was employed to create scenarios incorporating greening elements on roofs and facades. The results reveal a significant distinction between configurations with and without green roofs and facades, indicating that their integration positively contributes to the improvement of the urban climate.

Keywords: Green Roofs; Green Façades; Urban Heat Island; Microclimatic Parameters; Numerical Simulation.

Manuscript ID: ICCAUA2025EN0025

From Use to Design: Rethinking Urban Furniture for Sustainable Urban Spaces (Case of Plazas in Batna)

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Abstract:
Urban furniture, long relegated to a purely decorative role, is now recognized as a crucial component in the design of public spaces. In Algeria, it often remains poorly adapted to local socio-economic and environmental realities. This research focuses on analyzing the impact of urban furniture on the plazas in Batna, assessing its role in transforming these spaces into sustainable and functional areas. The aim is to demonstrate that urban furniture design, far from being incidental, profoundly influences key factors such as comfort, safety, utility, and the aesthetics of public spaces. By reflecting on the adaptability of urban furniture elements, we highlight their fundamental contribution to sustainable urban planning. This study underscores the importance of thoughtful, adaptive, and intelligent furniture in creating more resilient, pleasant, and genuinely functional cities, aligned with the needs of users and contemporary environmental challenges.

Keywords: Urban Furniture; Public Space; Sustainable Urban Planning; Resilient Cities.

Manuscript ID: ICCAUA2025EN0034

"Designing Small Urban Green Spaces for Equity" a Framework for Environmental Justice

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Abstract:
Small urban green spaces, often called "pocket parks," provide vital ecosystem services, recreational opportunities, and aesthetic value within dense urban areas. Beyond the cultural values they offer, the inequitable physical design issues of these urban green spaces—such as limited accessibility, physical barriers that lead to walkability problems, limited lighting, and improper urban furniture—can hinder marginalized groups of people from visiting them, raising questions of environmental justice. This research develops a city-level methodological framework that contributes to long-term resilience and supports the physically equitable design of small urban parks in terms of environmental justice and inclusivity, thereby contributing to community engagement. While most studies investigate larger urban green spaces, this research will explore small urban green parks, aiming to address important gaps in the physical and structural elements of these parks. The results provide a framework for urban planners to create equitable small urban green spaces.

Keywords: Urban Green Spaces; Pocket Parks; Equitable Design; Environmental Justice; Urban Parks.

Manuscript ID: ICCAUA2025EN0036

Biophilia: From A Sociological and Environmental Theory to an Urban and Architectural Approach

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Abstract:
Bipohilia is a sociological, psychological and environmental theory based on the reality of human beings' close relationship and attachment to nature and natural processes. This behavior is defined through an analytical approach based on the way in which human beings conceive their architectural and urban space, integrating the natural element as a principal element of spatial design. How can the theory of biophilia be introduced as an urban and architectural method and approach? The present work proposes a complex approach to ensure a clear, logical transition that has already been adopted in published scientific articles.

Keywords: Biophilic Design; Biophilic Behaviour; Landscape; Urban Space; Domestic Space.

Manuscript ID: ICCAUA2025EN0055

The Socio-Cultural and Built Environment Impact on the Walkability of Shopping Streets in Bahrain: SH. Hamad Avenue in Muharraq as a Case Study

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Abstract:
The vitality of shopping streets has a crucial role in the liveliness of cities. By making these streets more walkable, we can improve community connections and put sustainable urban planning into practice. However, the impact of socio-cultural and built environment factors on walkability remains a challenge. This study used a mixed-method approach to examine the influence of socio-cultural behavior and built environment elements on the growth of perception toward walking in Shaikh Hamad Avenue, the historic shopping street in Muharraq City. The users' perceptions of walkability were determined via questionnaires and by examining the built-environment characteristics through site observations. These data were later integrated into GIS mapping to correlate the pedestrian movement patterns with built environment metrics. The study's findings highlight the importance of pedestrian networks and urban design elements in developing sustainable and walking-friendly city policies and offer well-informed suggestions to benefit Bahraini commercial and urban planning regulations.
Keywords: Urban Vitality; Commercial Streets; Walkability; Human Behavior; Built Environment; Bahrain.

Manuscript ID: ICCAUA2025EN0065

Comparative Analysis of Informal Vendors around Stations through a Sustainable Livelihood Framework: Case Study of Dhaka Metro Rail

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Abstract:
Dhaka city, like many rapidly growing metropolises, is undergoing profound urban transformations fueled by rapid urbanization, population growth, and economic development. The introduction of the Dhaka Metro rail, aimed to reduce traffic congestion and improve public transport, has significantly reshaped mobility patterns and economic activities around transit hubs. Informal vendors, who provide essential and affordable commodities and services to commuters and residents, have become integral to this evolving urban landscape. However, their livelihoods are often precarious, challenged by regulatory constraints and socio-economic vulnerabilities. The Sustainable Livelihood Framework (SLF) is employed in this study through questionnaire, interview, field observation and photographic documentation to analyze the informal vendors in Dhaka's various metro stations. It examines the opportunities and difficulties posed by metro rail and investigates at how station locations affect vendors' access to livelihood assets, strategies, and outcome. The findings offer insights to policies aimed at fostering sustainable livelihoods and promoting inclusive urban development in Dhaka.
Keywords: Urban Space; Informal Vendors; Sustainable Livelihood Framework (SLF); Dhaka Metro Station; Inclusive Urban Development.

Manuscript ID: ICCAUA2025EN0078

Identifying Key Parameters for Enhancing Urban Resilience in Commercial Spaces: A Comparative Study in Saida, Lebanon

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Abstract:
Urban resilience plays a vital role in sustaining the functionality and vitality of commercial spaces in the face of evolving socio-economic and spatial challenges. This research investigates the key parameters that enhance urban resilience in commercial spaces, focusing on the interrelationship between spatial configuration, land use activities, and consumer perception. The study examines Saida's historic commercial street in the old city alongside two contemporary shopping malls, employing a mixed-method approach to highlight the differences in spatial and consumer experiences across these typologies. Space syntax analysis is used to assess spatial configurations, complemented by data from UN-Habitat Geoportal and field observations. The research also incorporates consumer surveys to explore perceptions and behavioral patterns. The findings reveal distinct spatial and consumer dynamics between traditional and modern commercial spaces, offering actionable insights into the urban design variables, critical for enhancing urban retail resilience. These insights aim to support urban designers and planners in creating adaptable and sustainable commercial environments.

Keywords: Urban Environment; Urban Resilience; Commercial Spaces; Consumer Perception.

Manuscript ID: ICCAUA2025EN0081

Pedestrian Safety and Sustainable Urban Planning: A Literature Review on Walkable City Design

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Abstract:
Approaching green infrastructure and walking-based urbanism is the need for an hour in an urban context; hence, the life of a cyclic plan becomes essential. This study conducted a literature review addressing measures to improve pedestrian safety and comfort in urban spaces. At the design level, core strategies such as sidewalk expansion, restricted access pedestrian-only areas, and integrated green spaces were explored in terms of their contribution to minimizing traffic incidents and promoting sustainable movements. The examination of pedestrian/cycle-centric planning lacks existing research, particularly in determining socioeconomic effects. Through a synthesis of recent studies, this review seeks to provide actionable insights for urban planners and policymakers to promote walkable, safe, and inclusive cities. The findings enhance the understanding of how pedestrian-focused designs improve safety, promote environmental sustainability, and improve public health while providing implications for future research.

Keywords: Pedestrian Safety; Sustainable Urban Planning; Pedestrian-Friendly Design; Urban Mobility; Walkable Cities; Public Health; Traffic Reduction; Inclusive Urban Spaces; Urban Design Strategies; Green Infrastructure.

Manuscript ID: ICCAUA2025EN0083

Placemaking Strategies for Public Spaces in Bahrain: By Integrating Inclusivity and Cultural Expression

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Abstract:
Public spaces play an integral role in forming the social and cultural fabric of cities. However, many public spaces lack connection to their users by only focusing on their physical needs. The aim of this research is to establish strategies for placemaking in public spaces in Bahrain by creating inclusive and culturally expressive spaces. Hence, a mixed approach of quantitative and qualitative analysis is used. The research is performed by collecting data, guidelines, and case studies, conducting 69 questionnaires to measure people's satisfaction with public spaces, analyzing data using Excel and NVivo to find similar parameters and themes and to establish placemaking strategies for open spaces. The results found that creating inclusive public spaces and providing platforms for cultural expression enhance the quality of the design. Therefore, incorporating strategies inspired by placemaking parameters into future planning policies improves the performance and quality of public spaces and attracts more visitors to the spaces.

Keywords: Place Making; Open Public Spaces; User Participation; Urban Development.

Manuscript ID: ICCAUA2025EN0085

(Re)Considering Agriculture, Urbanisation, and Environment Through Plasticulture in Antalya, Türkiye

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Abstract:
This study examines Plasticulture Urbanism (PU), where plastic-covered agricultural systems, such as greenhouses and polytunnels, transform rural and peri-urban landscapes. Integrating agricultural innovations with urban market demands, PU embeds cultural, economic, and infrastructural dynamics of urbanization into traditionally non-urban areas. Drawing on preliminary findings from ethnographic fieldwork in Antalya, Türkiye, this research conceptualizes PU through four themes: agrarian urbanism integrating agriculture and urbanization; a planetary political-economic system shaped by global food production and resource extraction; an assemblage of human and non-human actors sustaining agricultural systems; and cultural and aesthetic imagery framing Anthropogenic climate crisis. These themes highlight PU's environmental, technological, and cultural impacts on emerging geographies. The study argues that PU is not merely morphological patterns seen through satellite images but material and lived space for farmers, plants, bees, and insects. By exploring these dynamic assemblages, it offers new perspectives on the interconnected relationships between agriculture and cities.
Keywords: Agricultural Urbanism; Plasticulture; Greenhouses; Antalya.

Manuscript ID: ICCAUA2025EN0092

Urban Flood-risk Mapping for Urban Resilience Through Multi-Criteria Analysis of Pluvial Flooding in the Coastal City of Kochi, India

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Abstract:
Kochi City, located in India, features a low-lying terrain with elevations ranging from 0 to 2.5 meters above sea level, making it highly susceptible to urban pluvial flooding during the annual monsoon season. This study focuses on a 3 sq. km area within the city's central business district (CBD) to identify flood-risk zones using Analytical Hierarchy Process (AHP) analysis in ArcMap 10.3. The multi-criteria analysis incorporates both natural and anthropogenic factors, applying normalized weights to develop flood risk maps for the monsoon months (June to October). Findings reveal that high-risk zones are consistently prone to flooding throughout the monsoon season. Approximately 26% to 30% of the study area comprises high and medium-risk zones, indicating the persistent threat of urban flooding. These results highlight the critical need for a comprehensive urban resilience plan to mitigate flood risks and enhance the city's preparedness for future monsoons.
Keywords: Urban Pluvial Flooding; Flood Resilience; Flood-risk; Urban Flood Management; Resilient Planning; Coastal City

Manuscript ID: ICCAUA2025EN0096

Urban Renaturation of The City of Constantine

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Abstract:
The creation of green spaces provides invaluable benefits to improving the quality of life in the city. Despite this they have been largely ignored by the urbanization process in Algeria, indeed; Space-consuming urban extensions exert pressure on land and develop to the detriment of space. The city of Constantine is a very dense and growing city, its urban landscape is deteriorating at an uncontrollable speed, it has lost all the symbiosis it had woven throughout history with its natural environment. The city of Constantine is undergoing an alarming degradation of its natural environment and the living environment of its citizens and has experienced a disappearance of its green heritage and this is due to the absence of an effective strategy for protection, enhancement and management. This study will make it possible to enhance the natural spaces and allow ecological links.
Keywords: Green Spaces; Urban Landscape; Green Infrastructure; Global Warming; Adaptation Strategy.

Manuscript ID: ICCAUA2025EN0104

A Situated Understanding of Care: Co-production of a London Park

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Abstract:
This paper aims to examine the potential of community engagement in promoting biodiversity of urban environments and explore the complexities encountered when navigating environmental care through voluntary management structures in a London park. It uses archival research including policy documents and reports; and detailed ethnography through participant observation and semi-structured with the people articulating this park. Inspired by feminist care ethics, I argue that urban open spaces are the entanglements of multiple actors, different commitments, competing agendas, transience of volunteering intertwined with politics and economy. Focusing on the practical and ethical dimensions provides an opportunity to explore the role of the urban parks as a place of biodiversity and how the actors and strategies affect this role. Hence, we can start to see those aspects of urban park design or specific agendas within it such as 'building biodiversity' are, in fact, co-produced in the everyday life of urban spaces by relationship between human and non-human forms of life.
Keywords: Care; Urbanism; Urban Park; Urban Biodiversity; Ethnography.

Manuscript ID: ICCAUA2025EN0106

The Influence of Spatial Affordances of Urban Design on Pedestrian Behaviour in Public Spaces: A Food Market in Lund, Sweden.

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Abstract:
Every year, the main public space in Lund, Sweden, hosts the International Food Market. It attracts pedestrians from near and far who come to enjoy the food and street life. This study focuses on how pedestrians interact with the physical aspects of the public spaces during this event. The used methods are observation and photography to identify key urban design features that this space affords and dynamic interactions in the urban environment. The findings show that designing features of spatial affordances promotes accessibility, comfort, protection, and social engagement while improving the overall functionality of public spaces. This study highlights the importance of integrating urban design and pedestrian behavior by offering conceptual tools that provide urban designers with a deeper understanding of users' needs. This will lead to creating vibrant, livable, adaptable environments that enhance social life and sustainable communities in city public spaces.
Keywords: Urban Design; Public Spaces; Pedestrian Behaviour; Affordance; Food Market.

Manuscript ID: ICCAUA2025EN0109

Augmented Reality as a Design Tool in Enhancing Community Engagement: A Case Study of Souq Al Muharraq

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Abstract:
This research investigates the implementation of Augmented Reality as a design tool in order to improve community involvement in Bahrain's Souq Al Muharraq. It advocates a paradigm shift regarding issues arising from by using AR to nourish social connections and improve living quality in an urban setting. This paper focuses on observational studies that pinpoints how AR applications may enable community involvement in the design process of an urban environment. This shows how AR enhances public awareness and participation, further strengthening social bonds among residents. The research addresses the integration of AR in architectural practice, that will lead to more inclusive and responsible design, aiding the regeneration of cultural heritage and community well-being. This research gives useful insights to urban planners and architects who are open to adopting innovative technological approaches to enhance civic engagement in cities. Using AR, stakeholders will have a clearer view of local aspirations and community needs.
Keywords: Augmented Reality; Community Involvement; Urban Development; Souq Al Muharraq; Technology Integration.

Manuscript ID: ICCAUA2025EN0116

An Interdisciplinary Approach to Co-Designing Safe School Zones Through Placemaking

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Abstract:
The research explored how social design might facilitate the creation of safe school zones for children with the tools of participatory placemaking focusing on their physical and mental well-being in an urban environment. The research applies both traditional (interviews, questionnaires, observations, etc.) and design research tools (problem mapping and participatory design workshops) together with quantitative speed measurement. The project was realized by an interdisciplinary team involving experts of urban mobility and traffic safety, child and environment psychology, pedagogy as well as policymakers. By involving students (aged 12-14) and their teachers into the research process, their insights were integrated into small-scale urban interventions, transforming school front areas into dedicated spaces, where they can gather, socialize and strengthen their connection towards each other and the school area. The implemented prototype proved to be an often used space and it offers transferable and scalable solutions for other school fronts in the city.
Keywords: Co-Design; Placemaking; Interdisciplinarity; Public Space; Urban School Zones.

Manuscript ID: ICCAUA2025EN0117

Contentious Issues and the Reality of Urban Sprawl

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Abstract:
Urban development has grown increasingly complex, with rising informal housing and peri-urban clustering of low-income families driving urban sprawl globally. Although widely studied, urban sprawl remains contentious due to its ambiguous definition and ideological overlaps. This study explores these challenges through a case study in Minna, Nigeria, analyzing causes, measurement, and implications of urban sprawl. Key drivers include urbanization, economic growth, and transportation costs. Advanced tools like GIS and remote sensing mitigate analytical challenges, revealing sprawl's mixed social, economic, and environmental impacts. In Minna, urban areas expanded over 2000% from 1972 to 2015, driven by unregulated development. The study calls for sustainable spatial planning to formalize land titles and promote orderly peri-urban growth, ensuring development aligns with strategies for equity and sustainability.
Keywords: Development; Housing; Informal; Settlement; Urban.

Manuscript ID: ICCAUA2025EN0157

Enhance the Green Outdoor Spaces Towards Creating Sustainable Residential Neighborhoods in Egypt: Port Said City as a Case Study

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Abstract:
Green outdoor spaces are the most significant social areas for everyday interaction and a sustainability factor for increasing residential neighborhood quality of life. Cairo's significant green space shortage threatens its resilience, sustainability, and residents' well-being. Due to space, resource, and development pressures, green outdoor spaces in Egyptian residential neighborhoods are overlooked. Neglected spaces cause pollution, criminality, insects, and community unsociability. The research collected qualitative data utilizing case studies. The literature review of green outdoor space design characteristics and relevance, on-site observation, and resident questionnaire survey results to quantify neighborhood satisfaction inform this method. The research found that creating applicable sustainable green outdoor space will achieve the residents' satisfaction. The research concludes with a new model for a sustainable green open space in Port Said city with an implementation outline to help housing developers, urban designers, and stakeholders create a successful urban living environment for current and future residential neighborhoods.
Keywords: Green Outdoor Spaces; New Sustainable Green Space Model; Residents' Satisfaction; Recreational Spaces; Neighborhoods Residents' Perception.

Manuscript ID: ICCAUA2025EN0168

Informal Mobility Typologies Towards a Better Understanding of Informal Public Transportation

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Abstract:
Bangkok, the capital of Thailand, is known for its cultural heritage and thriving tourism, however, it is also notorious for its traffic congestion and air pollution, which are frequently ranked amongst the world's worst. With the city focusing on developmental approaches around mass transit systems other aspects such as informal mobility options are overlooked in terms of urban transportation. This research aims to investigate various types of informal public transportation, with their systematic classification according to their common characteristics, by developing a framework for analyzing informal transportation systems with the use of a matrix that clearly establishes criteria and categories for the systematic evaluation of various transportation types. This matrix serves as a tool for examining mobility systems, offering insights into their functions, patterns, and contributions to urban and sub-urban transportation networks. The study contributes to a deeper understanding of informal transport systems and how they contribute to formal transportation.
Keywords: Traffic Congestion; Air Pollution; Informal Mobility; Public Transportation; Matrix.

Manuscript ID: ICCAUA2025EN0169

Policy and Institutional Frameworks for City Information Modeling (CIM) Adoption in Bahrain: A Pathway to Achieving Sustainable Urban Development Goals

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Abstract:
City Information Modeling integrates Building Information Modeling (BIM), Geographic Information Systems (GIS), and real-time data analytics to optimize urban planning. While CIM holds significant potential for sustainable urban development, its adoption in Bahrain faces policy and institutional challenges. This study examines how policy frameworks and institutional structures influence CIM integration, aligning it with Bahrain's Economic Vision 2030 and the United Nations Sustainable Development Goals. Using a mixed-methods approach, the research combines policy analysis, stakeholder interviews, and comparative case studies to identify barriers such as fragmented regulations, limited inter-agency coordination, and capacity gaps. Findings highlight CIM's potential to enhance infrastructure efficiency, urban resilience, and public engagement, contingent on addressing these barriers. The study proposes a policy-driven roadmap, emphasizing standardized data protocols, cross-sector collaboration, and capacity building. By focusing on institutional and policy reforms, this research offers actionable insights for leveraging CIM to achieve sustainable urban development in Bahrain and beyond.
Keywords: City Information Modeling (CIM); Policy Frameworks; Institutional Barriers; Sustainable Urban Development; Bahrain Economic Vision 2030; SDGs.

Manuscript ID: ICCAUA2025EN0187

Heritage-Driven Urban Sustainability: Cultivating Soft Skills for Community Development

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Abstract:
Heritage is one of the elements of sustainable development of territories. Due to its fragility, it requires constant attention from the community. It is essential to clearly articulate the practical significance of heritage for communities to maintain their motivation. One way to practically use heritage is to integrate it into programs for developing soft skills in children and adults. Moscow City University conducted a study of 40 museums and significant cultural street objects to answer the question of what conditions have been created for the development of citizens' thinking and communication. Methods: parametric scale assessment, observation, interviews, focus groups. Findings: the main deficits include working with contradictions, multi-positioning, personal narratives, social reflection, as well as creativity and imagination. Wider implications: creating a tool for organizations working with heritage for comprehensive parametric assessment of historical urban landscapes in different countries in terms of their impact on the soft skills of citizens.
Keywords: Museums; Soft-skills; Sustainability; Social Reflection.

Manuscript ID: ICCAUA2025EN0190

Annaba at the Crossroads of History, Architecture, and Nature

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Abstract:
Annaba, one of Algeria's oldest cities, is shaped by its rich history, diverse architecture, and natural landscapes. This study examines how these elements intersect to define the city's spatial identity and future. Through a multi-scalar reading of the city, combining field visits, official documents, and online research, the study explores Annaba's urban fabric, architectural layers, and natural environment. Key findings reveal the city's evolution from Roman to modern times, with a contrast between its historical core, modern developments, and informal settlements. The architectural landscape is marked by a blend of traditional, colonial, and contemporary forms. At the same time, the city's natural setting, including its coastline and parks, faces challenges such as urban sprawl and environmental degradation. The study advocates for an integrated urban planning strategy that values Annaba's heritage, promotes sustainable regeneration, and enhances the quality of urban life.

Keywords: Annaba City; Spatial Identity; Urban Fabric; Architectural Layers; Natural Environment.

Manuscript ID: ICCAUA2025EN0192

Towards Sustainable Living: Improving Living Conditions of Low-Income Workers in Bahrain's Labour Camps

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Abstract:
The reliance on migrant workers in the GCC countries has resulted in unique challenges, including issues related to living conditions, labor rights, and social integration. Migrants are often housed in labor camps, which are characterized by cramped living conditions and poor access to basic amenities. This research aims to explore the living conditions of low-income workers residing in labor camps in Bahrain and identify ways of enhancing their livelihoods while promoting sustainable practices. It investigates the challenges they face regarding access to basic living conditions, amenities and services, and social integration. The research applies a mixed-methods approach, to gather data and generate insights into the experiences of low-income workers and strategies for promoting sustainable living. The findings of this study will contribute to knowledge on the issue and inform policy and practice in addressing the needs and rights of low-income workers in Bahrain.

Keywords: Community-Centered Design; Housing System; Labour Camps; Living Conditions; Sustainable Living.

Manuscript ID: ICCAUA2025EN0194

Spatial and Seasonal Flexibility in Blue and Green Sensitive Public Open Spaces' Designs

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Abstract:
Rapid urbanization, urban sprawl, and climate change have threatened the world, leading to serious environmental problems. Hence, there is a need for public open spaces, embracing blue and green infrastructure approach and designed according to sustainable landscape and urban design principles, to make cities more resilient, adaptable, and prepared. This research aims to develop a quantitative assessment model to evaluate spatial and seasonal flexibility of resilient green spaces. Investigating the relationship between blue- and green-sensitive public open spaces' landscape designs and their spatial and seasonal flexibility and defining the flexibility concept, it determines the three types of flexibility with ten indicators. Using a multiple case study method, it examines and assesses twelve international open public spaces, well-known in the blue-green sensitive and flexible public open spaces literature. The research findings indicate that flexibility can be achieved by using various combinations of landscape design elements at different scales to generate sustainable public open spaces.

Keywords: Blue- and Green-Sensitive Public Open Spaces; Flexible Public Open Spaces; Flexible Landscape Designs; Spatial Flexibility; Seasonal Flexibility.

Manuscript ID: ICCAUA2025EN0196

Reimagining Cities: From Traditional Urban Planning to Biophilic Urbanism

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Abstract:
The rapid pace of urbanization and growing ecological sustainability challenges underscore the limitations of conventional urban planning approaches, which often neglect integrating natural elements into the built environment. This study explores biophilic urbanization within a theoretical framework and assesses its applicability in Bursa, historically known as "Green Bursa." A comprehensive literature review on biophilic design principles will identify the fundamental components of this approach and analyze its potential benefits for urban resilience, environmental sustainability, and human well-being. Based on these findings, biophilic urbanization strategies suited to Bursa's urban fabric will be developed. In subsequent phases, the proposed strategies will be tested through field studies, and their validity will be evaluated using quantitative methods. By establishing theoretical and methodological foundations, this research aims to provide a framework for incorporating biophilic design into urban planning policies, fostering more sustainable and livable cities.

Keywords: Biophilia; Biophilic Urbanism; Biophilic Cities; Human-Nature Connection; Sustainable Urban Planning.

Manuscript ID: ICCAUA2025EN0199

Redefining the Concept of Waste: Implementation of Circular Economy for Bangkok Peri-Urban Low-Income Community

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Abstract:
Globally, over 2.1 billion tons of waste are generated annually, with much of it improperly managed, leading to severe environmental and health risks. Thailand produces approximately 27 million tons of waste each year, with significant challenges in peri-urban low-income communities like Pathum Thani, where rapid expansion has outpaced waste management infrastructure. This study aims to redefine the concept of waste through circular economy (CE) principles and systems thinking to enhance waste management and generate economic opportunities. Using a qualitative approach, it employs semi-structured interviews, focus groups, and co-design workshops to engage stakeholders in developing community-driven solutions. Findings highlight the necessity of integrating informal waste collectors into formal systems, improving infrastructure, and creating long-term incentives for participation. The study concludes that redefining waste as a resource can foster sustainable practices and economic resilience. Its contributions offer scalable strategies for other fast-growing cities facing similar waste management challenges.

Keywords: Low-Income Communities; Circular Economy (CE); System Thinking; Waste Management Practices; Co-Design Method.

Manuscript ID: ICCAUA2025EN0202

Unveiling Urban Health Resilience in the New City of Sidi Abdellah: A Cross-Sectional Analysis of Cardiovascular Risk Factors

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Abstract:
Urban design significantly influences public health outcomes, especially in new cities where the long-term health effects are indeterminate. Sidi Abdellah, occupied since 2016, represents our case study to correlate between Urban form & functionality with the cardiovascular diseases (CVDs). This study investigates the impact of the urban environment on the prevalence of cardiovascular disease (CVD) and related risk factors among inhabitants, while we had to take the relocation into consideration. This study aimed to determine the extent to which the urban environment may increase the risk of cardiovascular disease (CVD) and associated risk factors among residents, as well as the presence or absence of these problems before the move. 36 passengers, including locals, participated in a survey to assess their opinions on the immediate environment by a structured questionnaire with a mix of closed- and open-ended questions, their physical activity habits and their health status. The results raise questions about the direct influence of the city on health. Indicating pre-existing conditions rather than risks related to the urban environment, a significant proportion of respondents mentioned previous diagnoses of CVD before the move. On the other hand, environmental problems and restricted access to green spaces and sports facilities could pose long-term health risks. These results highlight the need to review the functions and structures to be included in this city that prioritize public health resilience.

Keywords: Urban Resilience; Cardiovascular Risk; New City Impact; Physical Activity; Public Health.

Manuscript ID: ICCAUA2025EN0203

Transforming Urban Mobility: Integrating the Rail Plus Property Model in Transit-Oriented Development: Exploring Property Development Opportunities Comparing Kathmandu, Bangkok and Ho Chi Minh City

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Abstract:
This study addresses the challenges of rapid urbanization and insufficient public transportation in Kathmandu, Nepal, by exploring the integration of Transit-Oriented Development (TOD) with the Rail Plus Property (R+P) model. Using Koteshwor Metro Station as a case study, it examines how the R+P model can finance and enhance public transport systems while fostering sustainable urban growth. By analyzing successful TOD practices from cities like Bangkok and Ho Chi Minh City, the research identifies strategies for creating dynamic urban spaces, improving land use, and generating revenue for transit infrastructure. This research explores urban design strategies for station planning, focusing on pedestrian-friendly layouts, connectivity, public plazas, and integration with mixed-use developments to create vibrant urban nodes. The findings aim to provide a model for economic urban development in Kathmandu, offering insights for policymakers, planners, and designers to implement innovative and sustainable urban design strategies to address traffic issues in Nepal.
Keywords: Transit-Oriented Development (TOD); Rail Plus Property (R+P) Model; Metro Station; Economic Urban Development.

Manuscript ID: ICCAUA2025EN0190

Annaba at the Crossroads of History, Architecture, and Nature

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Abstract:
Annaba, one of Algeria's oldest cities, is shaped by its rich history, diverse architecture, and natural landscapes. This study examines how these elements intersect to define the city's spatial identity and future. Through a multi-scalar reading of the city, combining field visits, official documents, and online research, the study explores Annaba's urban fabric, architectural layers, and natural environment. Key findings reveal the city's evolution from Roman to modern times, with a contrast between its historical core, modern developments, and informal settlements. The architectural landscape is marked by a blend of traditional, colonial, and contemporary forms. At the same time, the city's natural setting, including its coastline and parks, faces challenges such as urban sprawl and environmental degradation. The study advocates for an integrated urban planning strategy that values Annaba's heritage, promotes sustainable regeneration, and enhances the quality of urban life.
Keywords: Annaba City; Spatial Identity; Urban Fabric; Architectural Layers; Natural Environment.

Manuscript ID: ICCAUA2025EN0213

Lost Spaces, Lost Learning: Towards Urban Intervention to Improving Issue of Educational Disparities in Phnom Penh, Cambodia

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Abstract:
As the world rapidly urbanizes with nearly a third of four billion urban dwellers being children, it is expected that by 2050, almost 70% of the world's children will be living in urban areas, with many in slums. In Cambodia, 39.7% of the urban population lives in slums, with 17.8% of urban households living below the national poverty line. Children in these communities face significant barriers to education, including unsafe routes, long travel distances, inadequate infrastructure, and socio-economic pressures such as child labor. This research aims to investigate urban challenges contributing to educational inequities in the capital of Phnom Penh and how urban design strategies address such issues. Through field observations, community engagement, and experiential mapping, findings reveal unsafe urban conditions and poor access to educational facilities perpetuate poverty and limit opportunities for children in Phnom Penh's low-income communities. Improved urban design is essential to breaking these cycles.
Keywords: Educational Disparities; Low-income Community; Urban Intervention; Cambodia; Children.

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Road Traffic Noise in Algeria: State Decisions Comprehensive Review

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Abstract:
Urban transportation system offers a major standard for measuring general operational efficiency of a city and its compliance with traffic laws. This research supports the latest Algerian government instructions, which focuses on the legislative aspect of road noise control mechanisms via a thorough analysis of the recently adopted State Decisions. Setif and Annaba, as well as Algiers and Blida cities, are enforcing the restriction of the presence of extremely noisy sports cars and motorcycles within urban and residential zones at night. This specific project is part of a more comprehensive set of preventive and repressive measures that have been deliberately designed to lower noise pollution and maintain public tranquillity. This research aims to support the enforcement of national noise control rules as well as provide suggestions that are both financially feasible and help to improve the management of noise problems connected to urban mobility.
Keywords: Urban Transportation; Road Traffic Noise; Algeria Noise Regulation; State Decisions.

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Towards the Coexistence of Global and Local Socioeconomic Urban Conditions: Comparing Glocalization in Bangkok, Thailand

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Abstract:
Urbanization and globalization have transformed Bangkok from a traditional, community-centered settlement into a vertical metropolis shaped by global capital and economic modernization. As Thailand's economic hub, Bangkok thrives on trade, tourism, and investment, but this growth often costs cultural identity and socio-economic equity. While globalization fosters opportunities, it also brings income inequality, labor exploitation, and cultural homogenization. The dominance of international businesses in Sukhumvit displaces local communities, dilutes Thai heritage, and challenges SMEs facing regulatory hurdles. Conversely, Bantadthong exemplifies a "glocal place," balancing cultural heritage preservation with sustainable development. Its approach integrates modernization without compromising local identity. These challenges highlight the need for balanced policies integrating global practices while preserving cultural continuity. This study evaluates glocal development strategies through case studies, exploring urban policies that bridge global business models with local contexts. It aims to ensure Bangkok remains competitive and culturally distinct as a thriving global city.
Keywords: Globalization; Cultural Identity; Income Inequality; International Business; Glocal.

Manuscript ID: ICCAUA2025EN0219

Integrating Green Spaces with Mass Transit: A Comparative Analysis of Bangkok, Singapore, and Kuala Lumpur for Sustainable Urban Development

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Abstract:
As Southeast Asia faces rapid urbanization, cities struggle to balance infrastructure development, environmental sustainability, and green space access. Bangkok faces poorly planned urban expansion, leading to limited green spaces and a disconnected, public transportation system. This study examines the relationship between green spaces and mass transit in Bangkok, compared with Singapore and Kuala Lumpur. Analyzing the 400-meter catchment around transit stations, the research explores green space distribution and road network connectivity through spatial analysis and space syntax methods. It evaluates how these cities integrate green spaces with transit systems and whether adopting a Transit-Oriented Compact Green City (TOCGC) model could improve Bangkok's connectivity. The findings highlight that green space accessibility is more important than size, with land subdivision and road networks influencing this relationship. The study proposes strategies for improving green space access and public transport integration, contributing to sustainable urban planning in line with UN SDGs 3 and 11.
Keywords: Green Space; Transit; GIS; Space Syntax; Bangkok; Singapore; Kuala Lumpur.

Manuscript ID: ICCAUA2025EN0221

Towards Human Smart City: An Integrated Vision for Al-Madinah Al-Munnawwarah, KSA 2030

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Abstract:
Saudi Arabia is embracing Smart Cities Initiatives to transform urban and rural areas into sustainable, citizen-centric hubs aligning with vision 2030—a blueprint for a prosperous, inclusive, and equitable future. The research explores the potential of Al-Madinah Al-Munawwarah, one of the world's most significant religious cities, to evolve into a Human Smart City. Human Smart Cities are the new generation of smart cities, which balances the technological infrastructure with human aspects. This research aims to analyze the technology–based solutions and the human-centered initiatives in Al-Madinah, supported by a literature and case studies of projects that emphasize citizen participation. The research begins with theoretical overview of smart city concepts. Then, the research analyzes both the technology-based solutions and the human-centered urban initiatives shaping Al-Madinah's development. The research concludes with an integrated framework outlining strategies to transform Al-Madinah into a Human Smart City, ensuring sustainable future for both residents and visitors.
Keywords: Smart Cities; Human Smart Cities; Madinah- KSA; Citizen Empowerment; Sustainable Urban Development; Integrated Framework; Human Crowd Management.

Manuscript ID: ICCAUA2025EN0224

Natural Solutions to Combat Urban Heat and Noise Islands: Investigation of Earth-Sheltered Buildings, Green Roofs and Urban Plantations

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Abstract:
Urban areas with higher temperatures than surrounding rural areas are defined as "Urban Heat Islands" (UHI), while "Urban Noise Islands" (UNI) are defined as higher noise levels. These two problems often occur simultaneously in the same place. The use of high-reflective cool materials and sound-absorbing materials in building envelopes are common methods applied to mitigate UHI and UNI. The aim of this study is to investigate natural solutions such as earth-sheltered buildings, green roofs, green walls, urban-scale plantations, parks, water bodies, and rain gardens. The current study includes relevant applied techniques and significant results revealed in the literature works. In this study, the use of the proposed natural methods aims to mitigate UHI and UNI, as well as to make multifaceted contributions to the fields of architecture and urban planning, such as increasing energy efficiency, reducing carbon emissions, creating aesthetic and social areas at the urban scale, and supporting biodiversity.
Keywords: Urban Heat Island; Urban Noise Island; Earth-Sheltered Building; Green Roof; Green Wall.

Manuscript ID: ICCAUA2025EN0228

Environmental Impacts from the Construction Sector, as a Consequence of the Planning that Has Been Subjected to the Territory of the Municipality of Tirana, Albania

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Abstract:
This study aims to assess the impacts on the environment from the construction sector in the territory of the municipality of Tirana, Albania, as a consequence of planning that has been subjected to the territory, accompanied by negative interference from temporary or continuous human actions. The results obtained from this study are based on the method of qualitative and quantitative analysis. For the period 2017-2023 according to the Institute of Statistics of Albania, 2464 construction permits were approved in Tirana region, while for the period 2015-2023 according to the National Environmental Agency of Albania, 2015 projects with an impact on the environment were approved in Tirana region, of which 1491 only in Tirana municipality, mainly in the construction sector. The Municipality of Tirana, as a result of territorial planning at the national level, ranks with the highest number of impacts on the environment, as a result of the construction sector.
Keywords: Sector; Construction; Environment; Quality; Impact.

Manuscript ID: ICCAUA2025EN0233

Metaheuristic Approaches to Urban Bus Route Optimization: Integrating Spatial Dynamics for Improved Accessibility and Efficiency in Istanbul

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Abstract:
Public transportation ensures access to employment, education, healthcare, and social services. Effective urban transport management requires optimizing scheduling, demand, and routing to enhance service efficiency. Bus route planning is a dynamic process influenced by fluctuating demand, traffic, and urban development, requiring optimization to minimize travel time and costs while maximizing accessibility. This study evaluates five existing bus routes in Istanbul using two metaheuristic algorithms—Genetic Algorithm (GA) and Ant Colony Optimization (ACO). These methods integrate spatial dynamics via GIS to optimize routes based on three key performance indicators (KPIs): minimizing travel time and distance, enhancing accessibility, and maximizing service coverage for points of interest (POIs). GA efficiently generates initial route designs, while ACO refines them for real-time adaptability. The findings offer valuable insights for urban planners, demonstrating how metaheuristic approaches improve data-driven public transport planning by creating efficient, accessible, and POI-oriented bus networks.

Keywords: Metaheuristic Algorithms; Route Optimization; Accessibility; POIs; Istanbul.

Manuscript ID: ICCAUA2025EN0235

Pedestrian Oriented Development in India: A Review of Theory and Practice

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Abstract:
Pedestrian oriented development (POD) helps in lowering the traffic congestions by increasing the pedestrian modal share. It is a challenge to integrate the well designed pedestrian infrastructure in a highly dense existing urban fabric especially in a country like India due to haphazard growth, lack of pedestrian paths and encroachments of existing footpaths. A critical review of policy documents, research articles and news articles were conducted to comprehend the correlation between theory and practice and found an inverse relation. Policies were talking about implementation of POD through smart city projects but in practice, pedestrians are struggling for basic access pathways to public transport. This demands an exploratory study to understand the nuances between stakeholders involved and implement Sustainable development goal (SDG) 11 as POD is a key indicator in SDG 11 which helps in reduction of vehicular pollution, relieves from economic burden of spending on transportation and promotes social health.

Keywords: Pedestrian Infrastructure; Urban Policy; Active Transportation; Pedestrian Impediments; Implementation Strategies.

Manuscript ID: ICCAUA2025EN0236

Nature-Based Solutions for Urban Coastal Resilience: Adaptations for Climate Change in Singapore's East Coast

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Abstract: Coastal cities like Singapore having 30% of its land at only 5 meters above sea level are highly vulnerable to flood and sea-level rise, consequently requiring coastal conservation. This research questions conventional coastal protection methods as they negatively impact the natural environment and fail to ensure long-term sustainability. The study investigates the extent to which Landscape Urbanism can be adapted to Singapore's East Coast environment to boost ecosystem resilience and reduce exposure to risks. The methodology includes the study of existing and developing theoretical approaches, literature review and comparative analysis. The proposal examines Nature-based solutions (NbS) including siltation, mangrove restoration and wetland incorporation in the urban planning of Singapore's East Coast that regenerates ecological balance considering its historical coastal changes. It aims to provide a framework for the East Coast to adapt to climate change while redefining coastal urbanization through an ecological perspective.

Keywords: Nature-Based Solution; Coastal Resilience; Climate Change Adaptation; Ecological Regeneration; Landscape Urbanism.

Manuscript ID: ICCAUA2025EN0242

Assessment of Housing Condition and Maintenance Practice in Nigeria University Staff Quarters: A Case Study of University of Ilorin

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Abstract:
The Provision of staff housing, particularly in Nigeria's tertiary institutions of learning is becoming unrealistic, a need for efficient maintenance of existing housing. This study investigates the condition of housing and maintenance practices in staff housing. The study utilized primary and secondary data collected from staff in the University of Ilorin quarters with questionnaire, 117 sample size out of 234 sample frames were randomly selected. Primary data such as residents' socio-cultural, housing typology, facilities condition and maintenance procedure were collected. The Statistical Package for Social Sciences (SPSS) was used for the analysis while frequency count, percentages, and tables were employed in the presentation of the findings. The study revealed that 53%, 43.6% foundations, floor respectively is in good condition while 47.7% of walls are in poor condition, 40.2%, 29.1% show dissatisfaction, satisfaction respectively with maintenance procedures. The study suggested periodic assessments, development of maintenance policies.
Keywords: Condition Of Housing; Maintenance; Procedures; Facilities.

Manuscript ID: ICCAUA2025EN0263

The Urban Sensory Ambiance of Batroun's Old Patrimonial Souk In The Face of Overtourism

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Abstract:
The old patrimonial souk of Batroun, in northern Lebanon, is undergoing significant changes as a result of overtourism, profoundly changing its urban sensory ambiance and the experience of its inhabitants. Formerly a place for local trade and crafts, this souk experienced a decline after the civil war. Since the 2000s, it has undergone a reconversion focused on tourist consumption and entertainment. These transformations generate a disruption of the sensory perceptions of the place, leading to tensions between heritage preservation and tourist attractiveness. Using the methods of "commented city walks" (Thibaud, 2001), this article analyzes the impact of these changes on the inhabitants and their relationship to the souk. The results highlight feelings of dislocation (Goetz, 2001) and solastalgia (Albrecht, 2022), reflecting a loss of behaviors and an emotional disorder in the face of the transformation of the urban environment. The study thus questions the possibilities of a co-construction of urban sensory ambiances, with the possibility of a dialogue between heritage and tourist dynamics.
Keywords: Batroun, heritage souk, urban sensory ambiances, overtourism, dislocation, solastalgia.

Manuscript ID: ICCAUA2025EN0269

Retrofitting of Historical Parks to Mitigate Urban Heat Island and Enhance Thermal Comfort in Cities

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Abstract:
Historical parks are crucial landscapes that significantly impact the quality of life in communities. The study raises the topic of neglecting historical gardens in Egypt and how they suffer from distortion in many of its plants and landscape elements. As a result of this decline, there is a loss in parks that contains large green spaces within the urban fabric which in turn leads to the increase of urban heat island and the decrease of thermal comfort in cities. The study focuses on the concept and the environmental importance of historical parks to the surrounding environment. It analyzes different historical parks worldwide and how they were retrofitted to reach an environmental approach that can balance the microclimate. Then, the study applies these environmental approaches on Antoniadis Park in Alexandria, Egypt to transform it to a sustainable historical park. The main aim of the study is to propose guidelines to preserve and retrofit the existing historical parks in Egypt and reactivate their environmental role.
Keywords: Environmental, Historical Parks; Microclimate; Retrofit, Thermal Comfort; Urban Heat Island.

Manuscript ID: ICCAUA2025EN0274

From Concept to Practice: Crafting Responsive Spaces for Sustainable Urban Living

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Abstract:
Over the last half century, cities have faced multiple and contradictory crises of economic stagnation, social inequality and environmental degradation. As a result, urban planning has begun to focus on solutions based on making urban environments sustainable. The study aims to unravel the principles of Responsive Environments theory and explore their capacity to reshape urban spaces into liveable and sustainable environments. Employing the review and descriptive research method, the study intends to answer the question: What is the role of Responsive Environments theory in bridging the gap between the current urban spaces and sustainable urban environments? The study found that this strategy fundamentally impacts how people interact in cities, prioritizes social justice and economic development, and also advocates the realization of environmental aspirations. The study's findings inform architects and urban planners on how to design and redesign vibrant and more sustainable urban environments for the manifest future.

Keywords: Sustainable Urban environments; Responsive Spaces; Urban planning.

Manuscript ID: ICCAUA2025EN0275

Integrated Approaches to Urban Energy Efficiency and Carbon Sequestration: A Framework for Implementing Urban Digital Twins

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Abstract:
Energy efficiency and carbon sequestration are fundamental components of sustainable urban development, as cities account for majority of global energy consumption and carbon emissions. This research explores Urban Digital Twins (UDTs) as an innovative approach to optimizing operational energy use and enhancing carbon sequestration in urban environments. UDTs integrate real-time data processing, simulation models, and public participation to drive sustainable energy management and emissions reduction. The study examines two pilot buildings in Thailand and Vietnam, using energy data to evaluate the feasibility of UDTs. Key implementation challenges, including regulatory barriers, setup costs, and limited public engagement, are analyzed, with proposed strategies to address them. A digital twin-based energy framework enables cities to integrate renewable energy systems, intelligent controls, and carbon sequestration strategies, optimizing energy use while reducing emissions and costs. This research aligns with UN Sustainable Development Goals (SDGs) 7 and 11, supporting clean energy adoption and sustainable urban development.

Keywords: Urban Digital Twins; Energy Efficiency; Carbon Sequestration; Renewable Energy; Smart Infrastructure; Sustainable Cities.

Manuscript ID: ICCAUA2025EN0280

A User-Centric Framework for Revitalizing Neighborhood Green Public Spaces in New Cairo City

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Abstract:
This research explores the revitalization of neighborhood green public spaces in New Cairo, Egypt, emphasizing their role in enhancing urban quality of life and sustainable development. These spaces foster social interaction and community cohesion, yet assessing their quality, particularly for neighborhood-scale gardens, lacks defined tools addressing human needs and space activeness. This study advocates a user-centric approach to transforming neglected green areas into vibrant, functional spaces aligned with residents' needs. Tailored to New Cairo City's neighborhood parks, it employs a mixed-methods approach, integrating qualitative data from resident surveys, mapping, observations, and photography with quantitative survey analysis to assess perceptions, usage patterns, and design preferences. A Green Open Space Assessment Framework was developed to evaluate accessibility, safety, aesthetics, and community engagement. Implementing this tool can help stakeholders enhance park quality, fostering more active and successful neighborhood gardens. The findings provide actionable guidelines for planners and policymakers to create sustainable, community-driven green spaces in rapidly urbanizing contexts.

Keywords: Urban Green Spaces; User-Centric Design; Neighborhood Gardens; Community Engagement; Quality Assessment Framework.

Manuscript ID: ICCAUA2025EN0281

How Can Urban Resilience Manages the Wadi Floods: Case of Oued El Harrach in Algiers

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Abstract:
The safety of people and ecosystems is seriously threatened by severe weather events and natural catastrophes. To guarantee that every community benefits from a safe, sustainable built environment, social and economic factors must be considered in resilient urban planning. The commune of El Harrach is situated in the east of Algiers and traversed by the same-named river. With growing urbanization throughout the years, El Harrach is strategically located overlooking the Bay of Algiers. However, a number of threats persist, such as the chemical pollution and the risk of flooding. Through this study, we will explore the advantages and limits of urban resilience against the risk of flooding in El Harrach region using a combination of two urban analysis methods: SWOT (for the risk analysis) and NBS (for the proposed alternatives). The results will also be presented in the form of GIS maps in order to suggest future decision-making in the land use regional plan framework.

Keywords: Urban Resilience; Flood Risk; Algiers; SWOT Analysis; NBS Method.

Manuscript ID: ICCAUA2025EN0283

Sustainability at Crossroads: The Conflicting Needs of Affordable Housing Development Versus Saltpan Conservation in Mumbai, India

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Abstract:
Housing in Mumbai has emerged as a contentious issue, sparking the urban growth debate, with recent attention on Mumbai's salt pans earmarked for development. This study explores the aspect of sustainability amidst the conflicting needs of affordable housing development and salt pan conservation. It aims to evaluate the sustainability challenges and trade-offs between affordable housing development and salt pan conservation in Mumbai. The study uses data reviewed from a variety of journals, news articles, books, websites, etc., and using these it employs a PESTEL (Political, Economic, Social, Technological, Environmental, and Legal) analysis to delve into the issue. Results show that the conversion of the salt pans into housing zones will potentially undermine their critical ecosystem functions while failing to achieve critical sustainable development goals. Recommendations include prioritising ecologically sensitive urban planning, alternative sites such as brownfield developments, redevelopment of slums into well-equipped high rises, the use of derelict buildings, etc.

Keywords: Housing; Salt Pans; Sustainability; Urban Growth; Wetland.

Manuscript ID: ICCAUA2025EN0284

Mapping Informal Mobility: A Comparative Study of GPS Tracking of Motorcycle Taxis to Better Understand User's Behaviors Between University Campuses in Thailand and Vietnam

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Abstract:
Rapid urbanization in Southeast Asia is placing significant pressure on urban infrastructure, housing, and transportation systems, resulting in challenges such as traffic congestion, urban inequalities, and environmental degradation. Motorbike taxis play a significant role in urban mobility systems in Thailand and Vietnam. This research examines and enhances the comprehension of motorcycle taxi operations and their effects on urban mobility, particularly within the context of a Smart City framework. Using a mixed-methods approach, this research aims to use GPS tracking of motorbike taxis to compare two university campuses, Thammasat University, Thailand and UEH University, Vietnam, to identify patterns in the way that motorcycle taxis operate and examine driver behaviors. The results will hence contribute to enhancing urban mobility decision making, reduce congestion states, and improve route choices, enabling the integration of motorcycle taxis into Smart City projects, thus increasing the overall efficiency and sustainability of urban transportation in Southeast Asian cities.

Keywords: Motorcycle Taxi; Mix-methods Approach; Spatial Analysis; GPS Tracking Tools; Space Syntax; Smart Cities.

Manuscript ID: ICCAUA2025EN0294

Sustainable and Energy-Efficient Urban Space Design: Theoretical Framework and Case Studies in Water Management

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Abstract:
This study examines the role of water management in the context of sustainability and energy efficiency in urban areas. It emphasizes the necessity of effective water management strategies to preserve the urban water cycle, ensure energy savings, and support ecosystem integrity. The study explores sustainable water management principles and green infrastructure applications within a theoretical framework, analyzing innovative design solutions such as rainwater harvesting, greywater reuse, and permeable surfaces. Selected successful case studies at both national and international levels are evaluated in terms of their integration into urban space design. Ultimately, this study proposes a roadmap for designing energy-efficient and environmentally sustainable urban spaces by introducing policies and technological solutions that promote the efficient use of water resources in cities.

Keywords: Sustainable Water Management; Water-Sensitive Urban Design; Green Infrastructure; Energy Efficiency in Cities, Urban Landscape.

Manuscript ID: ICCAUA2025EN0295

A Global Perspective on Quality of Urban Life: A Comparative Analysis of Spatial Quality Criteria

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Abstract:
Urban design is a set of planning and design principles that shape the aesthetic and functional quality of urban spaces, ensuring cities are sustainable, efficient, and livable. Enhancing urban spatial quality requires defining key principles and making them measurable. This study identifies criteria for evaluating urban spatial quality, examines their application in different cities, and assesses urban life quality. The research focuses on Quality of Urban Life (QoUL), evaluating selected cities from different countries based on established criteria. These criteria were derived from a literature review and incorporated into an evaluation framework. A comparative analysis of QoUL criteria among cities was conducted, providing insights into spatial quality differences. The study contributes to the development of objective measurement methods for urban quality assessment and offers a guiding framework for improving urban livability.

Keywords: Quality of Urban Life; Spatial Quality; Urban Design; Livable Cities; Sustainable Urbanization.

Manuscript ID: ICCAUA2025EN0296

The Interplay of Water, Space, and Human Behavior: Urban Morphology by Means of Urban Palimpsest and Juxtaposition Concepts at the Bosphorus

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Abstract:
The interplay of water, space, and socio-cultural configurations that grounds human behavior structures the morphological development of coastal urban public spaces. Istanbul, as a palimpsest city, derives its unique identity from its relationship with the Bosphorus, which influences the city's spatial and socio-cultural structures. However, rapid urbanization along the coast threatens the city's authenticity, with no sense of site background sensibility. The Bosphorus, an ancient geographical divider, also serves as a unifying element that shapes spatial and socio-cultural dynamics delineating human behavior that connects disparate urban realms. This study explores whether analyzing the palimpsest heritage and juxtaposing spatial and socio-cultural palimpsest layers at the Bosphorus can improve coastal urban development based on principles of universal design, conservation, and sustainability. The research employs a combination of qualitative and quantitative methods, with future stages incorporating phenomenology, semiology, and agent-based modeling to support smart city development at coastal urban nodes along the Bosphorus.

Keywords: Urban Morphology; Urban Palimpsest and Juxtaposition; Coastal Urban Public Spaces; Spatial and Socio-cultural Configurations; Smart City Development.

Manuscript ID: ICCAUA2025EN0297

Salutogenic Parks: Health Promoting Green Infrastructure in Urban Environments

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Abstract:
The urban expansion and growth of the urban populations worldwide have negatively affected human health and well-being. Expansion of urban green infrastructure and considering salutogenic solutions in solving environmental problems are effective strategies for improving the quality of life and achieving an appropriate level of health and well-being of city residents. Salutogenic parks are an important part of sustainable urban green infrastructure and enhance the quality of the environment in order to achieve health dimensions. This article, by examining topics such as sustainable development, urban planning and urban green infrastructure with urban human health, addresses the salutogenic relationship of parks with various dimensions of physical, mental and social wellbeing as important health-generating and promoting resources in the urban environments and finally presents a conceptual framework for salutogenic urban parks and urban green infrastructure. Furthermore, the paper examines application of findings in the metropolitan area of Tehran, the capital of Iran.
Keywords: City, Sustainable Development, Green Infrastructure, Health-promoting, Park.

Manuscript ID: ICCAUA2025EN0298

Reading urban form: The Impact of urban policies on housing layout and market trends

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Abstract:
This study examines how urban regulations shape housing layouts and their economic consequences in Tehran. Using space syntax analysis, we explored the spatial impact of standardized apartment design policies and identified a recurring pattern in layouts directly influenced by these regulations. Findings indicate that a key consequence of this standardization is a reduction in direct sunlight access, particularly in northern plots, where market demand is noticeably lower compared to southern plots, where the effect is minimized. Cross-referencing these spatial findings with housing market data reveals that reduced sunlight exposure leads to a decline in property value in affected units, demonstrating the economic impact of urban design policies. The study highlights how regulations intended to create uniformity inadvertently result in spatial disadvantages, affecting housing desirability and market performance. These insights underscore the need for policy adjustments that balance regulatory objectives with residential livability and economic sustainability.
Keywords: Urban Policies; Housing Market; Spatial Configuration; Sunlight Accessibility; Real Estate Value; Tehran.

Manuscript ID: ICCAUA2025EN0299

Urban Green Infrastructure Development with Zero-Carbon City Approach: A Case Study of Karaj District One, Alborz, Iran

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Abstract:
The rising emission of greenhouse gases has made the concept of zero-carbon cities central to urban planning. Previous research has highlighted the effectiveness of urban green infrastructure, such as regional parks, vertical greenery (green roofs and walls) and biological systems like moss and algae, in reducing CO_2. However, their quantitative impact remains understudied. This study aims to assess and quantify the effect of vertical green spaces development on CO_2 reduction in Karaj District One, Alborz, Iran. Carbon sequestration data were extracted from Google Earth Engine, and various urban green infrastructure scenarios were simulated using the ENVI-met model. The results indicated that combining these green strategies could significantly lower CO_2 levels. These findings are crucial for planning and design policies focused on sustainable development, improving air quality, enhancing biodiversity, optimizing urban green infrastructure efficiency, and mitigating urban heat island effects.
Keywords: Zero-Carbon City; Urban Green Infrastructure; Environmental Modeling; Sustainable Development.

Manuscript ID: ICCAUA2025EN0300

Analyzing Cognitive Differences in Spatial Perception and Urban Wayfinding Behaviour Among Local and Internally Migrant Students: A Trip from BUET Campus to Dhaka University MRT Station

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Abstract:
Wayfinding is fundamental to how individuals perceive and navigate urban spaces. Kevin Lynch identified five key elements that shape mental maps and enhance urban legibility. As many students migrate to Dhaka for higher education, their spatial perception differs from that of local students. This study examines cognitive differences in wayfinding between local and internally migrant students of Bangladesh University of Engineering and Technology, focusing on their journey from the Campus to Dhaka University MRT Station. Using PedCatch, the study identifies 15-minute walkable potential routes. A structured questionnaire and sketch map analysis assess students' spatial awareness based on Lynch's framework. Findings indicate that Lynch's spatial elements significantly influence students' wayfinding behavior. Results also show that local students demonstrate detailed mental representations, suggesting that familiarity with the urban environment enhances spatial cognition. The study offers insights for urban designers to integrate cognitive perceptions into urban planning strategies, improving urban legibility and walkability.
Keywords: Wayfinding; Legibility; Cognitive Mapping; Urban Environment; Walkability.

Manuscript ID: ICCAUA2025EN0302

Investigating Accessibility and Spatial Integration of Dholaikhal Narinda Pond and Shajahanpur Jheel of Dhaka City through Space Syntax Analysis

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Abstract:
Waterbodies are vital components of urban environments, providing leisure opportunities for city dwellers. However, in rapidly urbanizing cities like Dhaka, waterbodies are shrinking at an alarming rate and becoming less accessible. Again, these spaces are underutilized and often turn into negative spaces within the urban fabric. The Dhaka City Neighborhood Upgrading Project seeks to revitalize the open spaces of Old Dhaka, to maximize benefits for the disadvantaged communities. This study aims to analyzing accessibility of two proposed sub-projects- Dholaikhal Narinda Pond and Shajahanpur Jheel, using space syntax to assess their potential as accessible urban open spaces. Results show that Dholaikhal Narinda Pond has higher connectivity and integration, making it more accessible for public. However, the poor connectivity in Shajahanpur Jheel limit its accessibility from the city. Findings from this analysis are expected to guide urban planners and policy makers for future urban developments and revitalization strategies for these crucial areas.
Keywords: Space Syntax; Urban Waterbodies; Accessibility; Dhaka City; Urban Planning.

Manuscript ID: ICCAUA2025EN0303

Translating the Sustainable Temporary Housing

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Abstract:
Natural and manmade disasters can destroy the built environment and displace people, creating an urgent need for temporary shelters. In such cases, the planning process is often brief, nonexistent, or constrained by policies and regulations. Despite these challenges, providing sustainable shelters for the displaced is essential. This paper examines how sustainable temporary housing can be implemented by analyzing refugee sheltering practices over recent decades. It aims to highlight key factors considered in planning and to define sustainable temporary housing. The methodology combines qualitative and quantitative research with an observational and exploratory approach. Based on a literature review and supported by case studies, this paper explores various design approaches to temporary housing. Finally, the researcher concludes that the concept of "Cities of the Displaced" underscores the urgent need for sustainable development in temporary housing solutions.
Keywords: Temporary Housing; Sustainability; Shelter; Refugee; Camp.

Manuscript ID: ICCAUA2025EN0305

Managing an Invisible Disaster: Developing an Action Plan for Extreme Heat Risks in Istanbul

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Abstract:
Historically, Istanbul has endured various disasters, including fires, earthquakes, and floods, resulting in major destruction. These disasters have shaped the trajectory of the city's urban development over centuries. However, as climate change accelerates, there's a new and growing threat: extreme heat. Climate projections indicate a significant increase in summer temperatures in the region as well as more prolonged and frequent heatwaves. The urban heat island effect due to dense development further exacerbates heat-related morbidity and mortality risks. However, unlike other disasters, heat and its impacts remain largely invisible, making it an overlooked hazard in disaster planning. Despite rising public concern, Istanbul lacks a heat action plan. Moreover, the urban redevelopment policy initiated under the premise of disaster resilience fails to account for heat risks. This study aims to identify heat risks in Istanbul's neighborhoods using GIS and lay out a framework to integrate them into Istanbul's disaster risk management.
Keywords: Climate Change; Extreme Heat; Urban Heat Island; Disaster Risk Management; Public Health.

Manuscript ID: ICCAUA2025EN0309

Urban Landscape Design for Promoting Healthy and Sustainable Behaviors: A Nature-Based and Environmental Psychology Approach

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Abstract:
Urban landscape design plays a significant role in enhancing health and promoting sustainable behaviors within society. This study examines the impact of urban space design on the physical and mental well-being of citizens and the encouragement of sustainable behaviors, incorporating nature-based solutions and environmental psychology approaches. Elements such as green spaces, walking paths, natural lighting, and social interaction areas can reduce stress, increase physical activity, strengthen the sense of place, and improve quality of life. Studies show that thoughtful urban design not only improves individual and social health but also fosters behaviors such as reducing car dependency and increasing social interactions. Ultimately, this research offers recommendations for designing urban spaces that, through the integration of nature and environmental psychology principles, contribute to creating healthier and more sustainable cities.
Keywords: Space Design; Quality of Life; Public Spaces; Physical Activity; Social Interactions.

Manuscript ID: ICCAUA2025EN0317

Istanbul Disaster Gathering Places: A Study on Condition and Suitability

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Abstract:
In today's world of multiple crises, disasters becoming emergencies are linked to a city's vulnerability. Istanbul, in a complex urban ecosystem, faces irregular development, risky buildings, and inadequate infrastructure that undermine its resilience. Following an earthquake, disaster assembly areas serve as critical evacuation points and safe gathering spots, yet vulnerabilities intensify crisis impacts. This study investigates whether Istanbul's disaster assembly areas meet necessary adequacy criteria and how current vulnerabilities affect overall resilience. The methodology addresses gaps in the literature, including the absence of datasets and inadequate classification frameworks. This research is a comparative analysis of required assembly area characteristics against current conditions using GIS analysis of open-source spatial data, complemented by a literature review. Results reveal discrepancies between established international standards and the actual conditions of Istanbul's disaster assembly areas, underscoring the urgent need for targeted enhancements in urban planning and emergency preparedness to strengthen the city's resilience against disasters.
Keywords: Disaster Gathering Places, Urban Resilience, Urban Vulnerability, GIS Analysis.

Manuscript ID: ICCAUA2025EN0318

Vaastushastra Based Indian City Design Theory – The Ancient Solution to the Latest Problems of Sustainability

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Abstract:
Modern cities face growing sustainability challenges, requiring urban planning models that ensure ecological balance and resilience. This study examines Vaastushastra, an ancient Indian city design theory, to determine its relevance in addressing contemporary urban issues. Using a comparative analysis of historical Indian cities and modern planning frameworks, the study identifies key Vaastushastra principles, including mandatory ecological services, geometric street grids, and essential urban infrastructure such as educational institutions, hospitals (*vaidya*), markets, and administrative centres. The theory also mandates folk planning to ensure diverse professional representation and strictly prohibits encroachments on ecosystem services. Furthermore, it provides a structured expansion strategy for controlled urban growth. The findings suggest that integrating Vaastushastra's principles with modern urban planning can enhance sustainability, resilience, and community well-being. This research highlights the potential of traditional knowledge in shaping future cities, offering a holistic solution to environmental and socio-economic challenges.

Keywords: Vaastushastra; Vaastu-Purusha-Mandala; City Design Theory; Urban Planning; Sustainability.

Manuscript ID: ICCAUA2025EN0320

Integrating Urban Landscape Design and Carbon Sequestration: A Sustainable Approach for Beyhaghi Terminal, Tehran

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Abstract:
Urban landscape design plays a crucial role in mitigating climate change by enhancing carbon sequestration. This study examines the potential of integrating green infrastructure to improve carbon absorption in the Beyhaghi Terminal area of Tehran. The research employs a mixed-methods approach, incorporating spatial analysis, vegetation assessment, and carbon sequestration modeling to evaluate existing conditions and propose sustainable design strategies. Findings indicate that incorporating native vegetation, optimizing green spaces, and using permeable surfaces can significantly increase carbon capture while enhancing environmental quality. The study underscores the necessity of integrating ecological principles into urban planning to achieve long-term sustainability. The proposed design framework serves as a replicable model for similar urban spaces, contributing to climate resilience and improved urban air quality. By prioritizing carbon sequestration in urban landscapes, this research aligns with broader sustainability goals, offering practical insights for policymakers, urban planners, and environmental designers.

Keywords: Urban Landscape Design; Carbon Sequestration; Sustainability; Green Infrastructure; Climate Resilience.

Manuscript ID: ICCAUA2025EN0326

Quality and Quantity Parameters for Developing Urban Design Regulations for Public Open Spaces in Kerala

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Abstract:
Urbanization is rapidly diminishing open spaces, presenting numerous challenges for Kerala, including reduced access to green areas, intensified urban heat island effects, fragmented ecosystems, diminished water retention, erosion, pollution, weakened community cohesion, economic impacts, loss of cultural identity, and decreased resilience to climate change. This study aims to address these issues by developing a comprehensive framework for open spaces in Kerala, ensuring both quantitative and qualitative standards are met. Through a detailed examination of existing policy frameworks and master plans, significant gaps were identified in the criteria used to assess the quantity and quality of public open spaces. To bridge these gaps, this research identifies essential qualitative and quantitative parameters necessary for creating a robust and context-specific framework for Kerala. The study employs a mixed-methods approach, including policy analysis, stakeholder interviews, and field assessments, to formulate actionable guidelines. The findings contribute to improved urban planning practices, promoting sustainable, accessible, and culturally relevant open spaces in Kerala, enhancing overall urban resilience and community well-being.

Keywords: Open Space; Public Space; Urbanization; Ecosystem; Landscape; Urban Resilience; Quality of Open Space.

Manuscript ID: ICCAUA2025EN0327

Determining Design Criteria for Re-connecting Muharraq City with the Waterfront

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Abstract:
This paper focuses on the design considerations for city open space projects, especially those near waterfront projects. In this perspective, the objective is to discuss the expertise involved in dealing with the Sa'ada project Phase 2, which aims to establish a sustainable connection to the nearby waterfront projects via proposing an innovative concept of a pedestrian bridge connecting the adjacent Plaza in Muharraq City, Bahrain, to the nearby waterfront. The research methodology is qualitative analysis. Moreover, conducting focus group discussions with specialists will guide the research to embody Muharraq's heritage features, practical solutions for an innovative, sustainable pedestrian bridge and plaza, and foster the social uses of Muharraq's residents and tourists are critical points of discussion. The study provides design strategies for integrating regional identity with modern city development. Its findings can offer important implications for future urban development initiatives to vitalize urban areas.

Keywords: Muharraq; Walkability; Commercial Streets; Waterfront; Focus Group; Urban Development.

Manuscript ID: ICCAUA2025EN0340

Challenges and Suggestions for Sustainable Urban Revenue

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Abstract: Ensuring sustainable urban revenue is a critical challenge for municipalities aiming to enhance economic competitiveness within regional urban networks. This study identifies key financial and economic obstacles faced by urban management, including dependency on unstable revenue sources and financial inefficiencies. Using a qualitative analysis of urban finance models and case studies, the research evaluates alternative strategies for sustainable municipal revenue. The findings suggest that reducing reliance on construction-related fees, promoting private sector investment, and leveraging financial institutions can contribute to financial resilience. Additionally, implementing renovation taxes as a continuous revenue stream can enhance municipal financial stability. These insights provide policymakers with a strategic framework for achieving long-term urban economic sustainability.

Keywords: Urban Economy; Sustainable Revenue; Municipal Finance; Financial Resilience; Private Sector Investment; Urban Policy.

Manuscript ID: ICCAUA2025EN0341

Advancing Urban Design: Parametric Approaches for Energy-Efficient Urban morphologies

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Abstract:
Urban design is increasingly influenced by computational methods, with parametric approaches emerging as key tools for optimizing energy efficiency in urban forms. This literature review explores the integration of parametric design in urban planning, emphasizing its role in shaping energy-efficient morphologies. The methodology involves a systematic review of recent research on parametric modeling, simulation tools, and performance-based design strategies in urban planning. The study highlights how parametric tools enhance solar access, ventilation, and thermal performance, contributing to sustainable urban development. Additionally, it discusses the synergies between generative algorithms, multi-objective optimization, and environmental analysis in designing resilient cities. The review identifies key challenges, including computational complexity, data integration, and the gap between theoretical models and real-world applications. This review offers insights into the evolving relationship between parametric urbanism and energy efficiency, establishing a foundation for future research and practice in sustainable urban design.

Keywords: Sustainable Urban Design; Parametric Design; Energy Efficiency; Urban Morphologies; Literature Review.

Manuscript ID: ICCAUA2025EN0345

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 efficientarrangement 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.

Manuscript ID: ICCAUA2025EN0356

Day and Night Image of Cities

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Abstract:
Light is a fundamental element in shaping the perception of spaces and the urban image. The changes in how cities are perceived day and night are directly related to natural light and lighting. Therefore, this study aims to explain the change of urban image concept in the day and night in the most frequently visited cities determined based on annual visitor numbers. The selected cities were analyzed by reviewing posts on the Instagram platform, using hashtags, through a new, non-interactive Instagram account. The overall urban images of the first 100 posts reached through the hashtags were analyzed. Subsequently, the same research and analysis were conducted for the city's central square, one of the most dynamic and symbolic urban areas. Finally, the change in the city's image at different times of the day was examined through Instagram posts, with the change explained through concrete findings.
Keywords: Square; Image; Day Image; Night Image; Instagram.

Manuscript ID: ICCAUA2025EN0347

Enhancing Urban Mobility in Cairo: A PTV VISSIM-Based Simulation of Salah Salem Corridor

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Abstract:
Over the past decade, extensive research has explored the causes of traffic congestion in Cairo, proposing diverse solutions such as redesigning road geometry, optimizing traffic signals, and introducing public transportation projects. However, there has been little justification for selecting specific approaches and determining their appropriate applications. This Research aims to develop a consolidated framework for urban designers to diagnose the primary causes of traffic congestion and select the most effective solutions using traffic simulation tools. Salah Salem Axis, one of Cairo's most congested roads, was chosen as the case study. This axis includes five consecutive intersections, connecting Nasr City to October Bridge and Youssef Abbas Street, offering a diverse environment for testing. The Research employs both quantitative and qualitative approaches to evaluate three strategies derived from the literature review: road geometry redesign, traffic signal optimization, and public transportation enhancements. The PTV VISSIM software was used to simulate traffic flow. Optimization was conducted at each intersection along the case study area, and the Level of Service (LOS) was measured. The study concludes with a comprehensive framework and recommendations for urban designers and policymakers to reduce time wasted in Traffic congestion for Cairo's urban context.
Keywords: Traffic Congestion; Urban Design Framework; Traffic Simulation Tools; Cairo Urban Transportation.

Manuscript ID: ICCAUA2025EN0352

How Can User-Oriented Evaluation Enhance Public Space Design? Insights from the Üsküdar Waterfront

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Abstract:
A user-oriented public space enhances urban living by prioritizing the needs, preferences, and experiences of its users, a key approach for fostering sustainable development. This study evaluates the recently regenerated Üsküdar waterfront using a user-oriented framework that integrates community perspectives. The conceptual framework, based on a thorough literature review, informs a structured questionnaire examining dimensions such as Accessibility (physical, social, cognitive, and economic), Spatial Functionality, and Environmental Quality Perception. The framework encompasses the multifaceted nature of user experiences and perceptions of public space. Data were collected using a Likert scale, and statistical analysis was employed to interpret the findings. The study identifies areas for improvement and advocates for a user-oriented design approach, where incorporating user insights enhances public spaces and contributes to the sustainable development of communities. This approach offers a systematic methodology for design assessment with practical implications for urban planning, design, and policy-making.

Keywords: Public Space Design; Public Space Evaluation; Sustainable Development; User-Oriented Approach; Waterfront.

Manuscript ID: ICCAUA2025EN0365

Invisible Boundaries: Contemporary Art and Class-Based Alienation in Thailand

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Abstract:
As an intangible cultural asset and the lifeblood of urban areas, art reflects and communicates society; denying access to it undermines both the right to the city and cultural participation. In Thailand, contemporary art museums often struggle to engage lower social classes, revealing a socio-cultural disconnect between institutional narratives and Thai cultural realities. This study investigates why public contemporary art spaces may contribute to social exclusion and how art's connection to society might be redefined as a cultural value. Focusing on the Bangkok Art and Culture Centre (BACC) and the Museum of Contemporary Art (MOCA), the research draws on interviews with local communities to explore how design, atmosphere, and perception influence accessibility. Comparative insights from Tate Modern (UK) and Pirelli HangarBicocca (Italy) highlight alternative engagement strategies. The study aims to reposition the role of contemporary art museums in Thailand toward more inclusive, socially sustainable cultural institutions that address class and identity.

Keywords: Social Alienation; Spatial Exclusion; Culture; Art Museums; Reconciliation.

Manuscript ID: ICCAUA2025EN0357

Urban Sprawl Between Spatial Dynamics and Sustainability Issues Case of the City of Béjaïa, Northern Algeria

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Abstract:
This paper analyzes the evolution of urban sprawl in the city of Béjaïa, located in northern Algeria, by examining land consumption from the country's independence in 1962 to the present day. Using a diachronic approach supported by Geographic Information Systems, the study highlights the increasing artificialization of land and its impacts on the environmental, social, and economic dimensions of sustainable development. The results reveal a diffuse and uncontrolled urban expansion, characterized by fragmented urban fabric, the loss of agricultural and forested land, and growing spatial disparities. A critical analysis of urban planning tools reveals their limited capacity to manage this phenomenon and provide appropriate solutions. This paper aims to encourage local decision-makers to adopt a more forward-looking urban governance strategy, based on the strategic use of geographic information systems and a prospective approach, to promote a more sustainable and balanced urban development.

Keywords: Urban Sprawl; Béjaïa; Land Artificialization; Sustainable Development; Geographic Information Systems.

Manuscript ID: ICCAUA2025EN0362

The Impact of Urban Sprawl on Agricultural and Natural Lands: A Case Study of Çanakkale

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Abstract:
Since the Industrial Revolution, the rapid and continuous increase in urban populations led to the sprawl of urban areas. The urban sprawl exerts pressure on agricultural land, forests, pastures, meadows, and wetlands surrounding settlements, resulting in changes in land cover and land use. This study examines the relationship between urban sprawl and agricultural land, forests, pastures, meadows in the city of Çanakkale from 1984 to 2024 using remote sensing data and methods. Results showed that while agricultural lands, pastures, and meadows have decreased due to urban sprawl over the years, forests have declined primarily due to natural disasters such as wildfires and human activities such as mining. Additionally, urban expansion has led to the loss of apricot, peach, and olive cultivation in nearby rural areas. Therefore, this indicates that urban sprawl has significantly altered local lifestyles, contributing to socioeconomic change.
Keywords: Forest; Urban Sprawl; Remote Sensing; Çanakkale.

Manuscript ID: ICCAUA2025EN0364

Critical Analysis of Supply Side (In-Situ Slum Redevelopment) & Demand Side Affordable Housing Policy in India Using Frank Fischer's Public Policy Framework

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Abstract:
Migrants play crucial role in driving urban economies, yet they require adequate shelter, social upliftment, and strong policy support. The research dives into the Affordable Housing Scheme in India, Comparing two key approaches within the scheme—supply-side model In-Situ Slum Redevelopment (ISSR) and demand-side approach Economically Weaker Section (EWS) Housing scheme with Frank Fischer's framework of public policy analysis. This study investigates the policy's implementation, governance, and long-term impact while cross examining by on-site survey & government reports. The research critically analyses the underlying problems with Urban Public Housing supply side policy within the Indian housing market and emphasizes post-occupancy issues in the city of Ahmedabad, India, which ultimately led to its discontinuation in September 2024. This research would help analyze the post-occupancy challenges related to affordable housing and critically justify whether the discontinuation of scheme and what lessons can be learned for future affordable housing initiatives.
Keywords: In-situ Slum Development, Affordable Housing, Post Occupancy Management, Supply-Demand in the Housing market.

Manuscript ID: ICCAUA2025EN0366

Urban Configuration and Residential Building efficiency: A Case Study in Hebron, Palestine

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Abstract:
The aim of the study and evaluation of the impact of urban formations on the efficiency of residential buildings in the city of Hebron, Palestine. The study evaluates energy consumption together with thermal comfort factors in order to analyze how building density and orientation and openness systemically impact each other. Researchers conducted an assessment which compared residential settings between traditional Old City arrangements and unplanned densely populated areas of Zeitoun and Sheikh. GIS research showed that the energy efficient traditional Old City buildings provided better thermal comfort and lower energy demand than Sheikh's unplanned residential with high density. The importance of the study lies in its ability of providing quantitative results that relate diverse urban patterns to their impact on the building's performance through the help of a simulation approach, beside the spatial indicators so, this can improve the development of urban sustainability for difficult condition, like Hebron.
Keywords: Building Efficiency; Hebron;Urban Morphology; Energy Performance; Urban Configuration; Spatial Analysis.

Manuscript ID: ICCAUA2025EN0375

Between Stone and Greenery: Reimagining Naples' Historic Center Through Sustainable Urban Landscape Interventions

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Abstract:
As a UNESCO World Heritage Site, the historic center of Naples, embeds nearly three millennia of history, architecture, and cultural transformation. While extensive researches have been conducted on the architectural and cultural significance of Naples' historic center, A critical gap remains in understanding the role of green spaces within this dense urban environment and their impact on community well-being, environmental sustainability, and spatial resilience. The study addresses this gap by examining Naples' historic center's spatial and environmental elements to assess potential green infrastructure integration possibilities into the existing urban fabric. A multi-method research approach is applied through structured interviews, onsite observations, and experimental manipulation. The study aims to revitalize Naples' historic center while maintaining environmental resilience and social well-being through temporary interventions that preserve cultural heritage, architectural values, and community needs serving as a universal model for cities encountering comparable issues.
Keywords: Naples' Historic Center; Temporary Urban Interventions; Sustainability; Landscape Architecture; Revitalization.

Manuscript ID: ICCAUA2025EN0307

Geospatial Evaluation of The Effects Of Urbanization On The Air Quality In Selected Urban Areas of Lusaka

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Abstract:
This study investigates the impact of urbanization on air quality in Lusaka, Zambia, focusing on carbon monoxide (CO) and sulfur dioxide (SO_2) concentrations from 2009 to 2024. Utilizing geospatial analysis, time series maps, air quality data and statistical validation, the research examines pollutant trends in industrial and non-industrial zones alongside urbanization rates. Key findings reveal a significant increase in CO concentrations, correlating with rising urbanization rates from 21.06% in 2009 to 38.05% in 2024, while SO_2 levels fluctuated due to emission control measures. Non-industrial areas exhibited lower pollutant levels, highlighting the disproportionate impact of industrial activities. The study demonstrates the effectiveness of geospatial tools in monitoring air quality and urbanization trends, providing actionable insights for policymakers to mitigate pollution. Contributions include a validated framework for integrating air quality monitoring with urban planning, emphasizing the need for sustainable development strategies in rapidly urbanizing regions.
Keywords: Urbanization; Air Quality; Carbon Monoxide (CO); Sulfur Dioxide (SO_2); Geospatial Analysis.

Manuscript ID: ICCAUA2025EN0381

Influence of Mass Rapid Transit System on Plotted Residential Property Prices: A case of Gurugram, India

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Abstract:
Mass Rapid Transit Systems (MRTS) significantly influence urban land markets. However, research on the effects on plotted residential properties in emerging cities remains limited to apartment and commercial properties and without metro project phases. To analyze MRTS's impact on residential property prices, we applied mixed methodology, including a literature review, primary survey, and hedonic pricing model, by taking MRTS Gurugram as a case to capture contextual factors and quantitative impact. The results reveal that MRTS accessibility affects price rise by 20-25% at the time of announcement and commands a significant appreciation of ≈30% in post-operational, especially within 500m. The capitalization effect diminishes within 1-2 km distance from the metro station, confirming that MRTS benefits are highly localized. The findings underscore MRTS's impact on plotted residential property prices, highlighting opportunities for planners for land value capture strategies like betterment levies and transit-oriented development for funding future infrastructure development around transit corridors.
Keywords: Mass Rapid Transit System; Residential Property Prices; Transit-Oriented Development; Hedonic Pricing Model; Gurugram.

Manuscript ID: ICCAUA2025EN0379

Examining the Superblock Concept in Dhaka: A Strategy for Sustainable Urban Growth – A Case of Tejgaon

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Abstract:
Dhaka evolved from a riverine settlement into a dense megacity driven by migration and commerce. Speculative land sales led to unplanned suburbanization, with the historic core retaining organic street networks while peripheral areas became fragmented residential and commercial enclaves. The lack of cohesive planning has reinforced Dhaka's spatially disjointed urbanization, leading to severe land-use conflicts in the Tejgaon Industrial Area (TIA). Originally a light industrial zone, TIA has haphazardly transformed into a mixed-use commercial hub, worsening congestion, environmental stress, and spatial inefficiency. This study assesses rezoning efforts and examines the superblock model—prioritizing pedestrian zones, restricted vehicular access, and green spaces—to harmonize development with sustainability. Contrasting centralized urban planning with community-driven approaches, the research employs spatial mapping, policy analysis (e.g., Dhaka's 2022–2035 Area Plan), and traffic modeling on a Tejgaon case segment. Findings indicate superblocks can redirect vehicular flow to peripheral roads, reclaim 20–30% of street space for pedestrians and greenery, and support high-density mixed-use development. Aligning with SDGs 11, 3, 13, and 15, the model curbs air pollution mitigates urban heat islands, and enhances biodiversity. The study highlights superblocks' potential to improve urban mobility, resilience, and efficiency. Integrating strategic rezoning with pedestrian-friendly infrastructure offers a scalable solution for rapidly urbanizing cities, emphasizing the need for adaptive frameworks to foster climate-resilient futures.

Keywords: Urban Planning; Spatial Efficiency; Sustainable Development; Superblock; Land-Use.

Manuscript ID: ICCAUA2025EN0385

Strategic Adaptation: A Climate-Resilient Science Park as an Urban Regeneration Strategy for Port Said's Industrial Waterfront

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Abstract:
This paper explores the strategic adaptation of Port Said Shipyard and its industrial waterfront into a climate-resilient Science and Technology Park (STP) as an urban regeneration strategy to drive economic growth. The study examines how the adaptive reuse of industrial heritage and innovation-driven development can transform the area into a sustainable economic hub. Using a comparative case study methodology and SWOT analysis, the research evaluates successful STPs developed alongside shipyards worldwide and assesses ongoing efforts in Port Said. Data was collected through field visits and focus group discussions with key stakeholders. Findings indicate that integrating the triple helix approach—linking government, academia, and industry—can stimulate investment, foster economic diversification, and enhance urban resilience. Additionally, the study highlights the role of climate adaptation strategies in mitigating sea level rise risks, while addressing challenges related to public access, land governance, and regulatory constraints.

Keywords: Science and Technology Park (STP); Port Said Shipyard; Industrial Heritage; Urban Regeneration; Triple Helix Approach.

Manuscript ID: ICCAUA2025EN0388

Integrating Blue-Green Infrastructure Strategies into Urban Planning: A Sustainable Approach for Indian Cities

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Abstract:
Water management has become an increasing concern across the world. In today's scenario of climate change. There are widespread cases of severe rainfall and flooding in many parts of the world. At the same time there are also increasing instances of drought and severe water scarcity in several regions. Most Indian cites are increasingly going through cycles of urban flooding during the rainy season followed by summer months when many parts in the city face extreme water crisis. In recent years blue green infrastructure has emerged as an effective strategy for water management in urban areas. This paper delves into the pros and cons of integrating blue green infrastructure into Indian urban planning. The paper closely examines the current policies and guidelines related to blue green infrastructure in the Indian context. It further reiterates the importance of integrating water management as an essential component of urban development.
Keywords: Water Management; Blue Green Infrastructure; Policy; Urban Development; Sustainability.

Manuscript ID: ICCAUA2025EN0390

Smart City and Sustainable Development in Iskele City (North Cyprus)

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Abstract:
Rapid urbanization has introduced complex challenges, including traffic congestion, pollution, urban sprawl, and security risks, compromising urban livability and management. As environmental degradation worsens these issues, sustainable development emerges as a critical framework for optimizing resource use and enhancing urban resilience. Smart growth, a keystone of this approach, integrates technology-driven solutions to improve efficiency and quality of life in smart cities. This study evaluates the synergy between smart city principles and space syntax theory in Iskele, North Cyprus. Using mixed-methods research, combining field surveys and Space Syntax analysis, the study assesses urban adaptability to smart city models. Findings reveal spatial inconsistencies in city structure, identifying Royal Sun Residence as the optimal pilot zone for phased smart city implementation due to its superior integration potential. The results emphasize the need for context-sensitive smart urban transitions, offering a replicable framework for cities balancing growth with sustainability.
Keywords: Smart City; Sustainability; Connectivity; Integration; Urban Development; Space Syntax.

Manuscript ID: ICCAUA2025EN0391

Cinema as a Mirror of Urban Identity Crisis: Semiotics and Sustainability in 'Dark City'

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Abstract:
Identity is a foundational element of human civilization, shaping the meaning and sustainability of urban spaces. This study examines how evolving identities, influenced by modernism, impact urban sustainability, using the film *Dark City* as a case study. Modernism has drastically altered individual and collective identities, with these shifts evident in cultural mediums like cinema. Applying Saussure's semiotic framework, the research analyzes sustainable place indicators to assess identity's role in defining spaces across historical periods. Findings indicate that modernism has eroded place identity, weakening urban sustainability in social, environmental, and cultural dimensions. The study concludes that sustaining meaningful urban environments requires preserving and revitalizing identity, positioning it as a critical factor in future urban development. By linking cinematic representation to real-world urban challenges, this research highlights the urgent need to reconcile modernity with place-based identity to foster resilient, sustainable cities.
Keywords: Identity; Sense of Place; Sustainable Place; Modernism; Urban Sustainability; Semiotics.

Manuscript ID: ICCAUA2025EN0394

Assessing Urban Sprawl Using a Composite Compactness–Connectivity Index: Building Footprints and Street Network Efficiency in Erbil

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Abstract:
Urban sprawl—marked by low-density development, fragmented land use, and inefficient transportation networks—poses significant challenges to sustainable urban growth. This study introduces a Composite Sprawl Compactness-Connectivity Index (SCI), a novel metric that integrates spatial compactness and network connectivity to assess the degree of urban sprawl. The SCI combines three core components: a convex hull-based compactness measure, Betweenness Centrality, and Closeness Centrality, with transformations and normalization techniques applied to ensure comparability and emphasize poorly performing zones. The model was tested in Erbil city using GIS and spatial network analysis. Additionally, the SCI was validated against average travel distance to hospitals as a proxy for accessibility, using linear regression to examine statistical relationships. Results show that all components are significantly correlated with SCI, with betweenness and compactness emerging as the strongest predictors of sprawl. The SCI effectively identifies sprawl hotspots and supports data-driven urban planning by offering a holistic, scalable, and interpretable framework. This approach enables planners to design more compact, connected, and accessible urban environments.

Keywords: Urban Sprawl; Compactness; Network Centrality; Betweenness; Closeness; Accessibility; Sprawl Centrality Index (SCI), Sustainable Urban Development.

Manuscript ID: ICCAUA2025EN0400

A New Methodological Framework for Assessing Sustainable Urban Form: The Role of Typo-Morphological Analysis

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Abstract:
Rapid urbanization and globalization since the industrial revolution have significantly reshaped the built environment, posing major urban challenges. This research explores the reciprocal relationship between Urban Morphology (UM) and Sustainable Urban Form (SUF), highlighting their combined potential in guiding sustainable urban planning. UM analyses the spatial structure of urban fabrics, while SUF promotes planning strategies centered on compactness, density, and integrated transport system. Adopting a qualitative methodology, including grounded theory and Integrated Modification Methodology (IMM), the study develops a conceptual model that integrates analytical tools to reveal correlations between urban morphological layers and sustainable design principles. By incorporating the typo-morphological approach and the concept of scale hierarchy, the model offers a comprehensive framework for evaluating sustainable urban structures. The findings demonstrate that all components of SUF are significantly shaped by typo-morphology, providing planners and designers with deeper insights for achieving context-sensitive, resilient, and sustainable urban forms.

Keywords: Urban Morphology; Sustainable Urban Form; Typo-Morphological Approach; Concept of Scale Hierarchy.

Manuscript ID: ICCAUA2025EN0401

Prediction of Fire-Induced Pollution Dispersion in Watersheds using ANN, A Case Study of Dareh-Moradbeyg River Watershed

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Abstract:
Post-fire runoff, driven by the loss of vegetation cover and alterations in soil characteristics, represents a significant source of pollutants in downstream ecosystems, residential, and urban areas. This study employs an artificial intelligence approach, optimized using the Artificial Bee Colony (ABC) algorithm, to predict water quality in a fire-affected watershed. pH variation data, collected following a prescribed burn in the study area, was utilized as input for developing an artificial neural network. The network's interlayer connection weights and threshold parameters were optimized using an enhanced version of the ABC algorithm. The results indicate that, compared to conventional models, the neural network trained using the ABC algorithm demonstrates approximately 25% greater predictive accuracy. These findings emphasize the critical role of machine learning techniques in forecasting pollutant dispersion in post-fire watershed environments.

Keywords: Prediction; Post-fire Pollution Dispersion; Watershed; Neural Network; Artificial Bee Colony (ABC).

Manuscript ID: ICCAUA2025EN0404

Morphological Transitions in Tehran's Residential Fabric

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Abstract:
This study investigates the transformation of Tehran's residential fabric through six distinct morphological stages, tracing a shift from typological logic—rooted in climate-responsive and culturally grounded spatial configurations—toward regulation-driven patterns dictated by abstract urban codes. Focusing on mass-space configurations and plot-based design principles, the research analyzes how traditional courtyard-centered plots gave way to fragmented, code-compliant footprints, particularly under the influence of the "60% + 2m" regulation. Using methods that study the form and structure of buildings and plots over time (called typo-morphological analysis) and by comparing diagrams of different layouts, the study shows that neighborhoods are losing their original, harmonious layout. The streets and building frontages are no longer consistent or connected the way they used to be, resulting in fragmented urban areas with a broken overall structure. The study contributes to the urban morphology discourse by advocating for planning frameworks that integrate regulatory needs with context-sensitive, typologically-informed design.
Keywords: Urban Morphology; Typo-Morphology; Plot Transformation; Regulatory Impact; Residential Grain.

Manuscript ID: ICCAUA2025EN0268

Investigating the Interconnection Between Urbanization, Human Capital, Economic Growth, and Ecological Footprint in Nigeria: A Quantile–on–Quantile Analysis

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Abstract
Every country is creating policies that are geared toward achieving environmental sustainability. This is because countries want to address climate change, protect public health, preserve natural resources, and promote economic stability and innovation. As a result, using the quantile–on–quantile (QQ) technique, this research will investigate the interconnection between urbanization, human capital, economic growth, and ecological footprint in Nigeria from 1961–2020. Nigeria is used as a case study because it has natural resources and aims to achieve net–zero emissions between 2050 and 2070. This study contributes to the existing literature using ecological footprints to measure environmental soundness. In addition, the QQ method employed is a novel technique. In conclusion, policies will be suggested for implementation.
Keywords: Environmental Sustainability; Ecological Footprint; Urbanization; Human Capital; QQ Method**.**

Manuscript ID: ICCAUA2025EN0339

Eco Town Planning Scheme :A Sustainable approach to Urban Resilience in Ahmedabad

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Abstract:
Ahmedabad, contributing 29.95% to Gujarat's GDP, faces environmental challenges due to rapid urbanization, including a 7% decline in green cover and a 2% loss in blue cover over the past decade. This study proposes the Eco Town Planning Scheme, integrating blue-green infrastructure to enhance urban resilience. The scheme focuses on stormwater management, biodiversity enhancement, and reducing reliance on traditional water infrastructure through principles of Protect, Delay, Store, and Release. Interventions at building, street, and town planning levels include rainwater harvesting, bio-swales, green buffers, and retention pits. The framework aligns with the United Nations Sustainable Development Goals (SDGs), promoting climate resilience, biodiversity, and sustainable urban growth. Key outcomes include improved water resource management, reduced urban flooding, and enhanced public health. This study provides a replicable model for balancing urban development with ecological preservation.
Keywords: Eco Town Planning; Blue-Green Infrastructure; Urban Resilience; Stormwater Management; Sustainable Urban Growth; Climate Resilience; Biodiversity Enhancement; Nature-Based Solutions; United Nations Sustainable Development Goals (SDGs).

Manuscript ID: ICCAUA2025EN0407

Digital Inclusion and Sustainability in Nigerian Urbanism: Adaptive Service Frameworks for Smart City Resilience

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Abstract:
This study aims to explore and develop adaptive urban service frameworks that leverage smart technologies to promote sustainable urban development, enhance resource efficiency, and ensure resilience and inclusivity in response to the challenges of rapid urbanisation. The objectives of the study include: (i) To elicit adaptive urban service models, integrating smart technologies that can enable resource efficiency, environmental sustainability, and high quality of life in rapidly urbanising cities in Nigeria; (ii) To study the role of adaptive urban services to foster resilience and inclusiveness in Nigeria Smart City as a result of population growth, infrastructure demands, and challenges posed by environmental change. Survey analysis was used to assess satisfaction, inclusivity, and efficiency of adaptive urban services. Statistical Package for the Social Sciences (SPSS), Version 22, conducted descriptive, inferential, and regression analysis. The result of the regression model assessing the adaptive urban services on sustainability outcomes demonstrated a strong overall fit (R-value=0.987), indicating a highly positive correlation between adaptive urban services and sustainability outcomes. In addition, the regression model for adaptive urban services fosters resilience and inclusivity within a smart urban environment and reveals a strong correlation coefficient (R-value=0.865), indicating a robust relationship between the predictor variables and the outcome. Findings provide lessons for the potential of adaptive services for sustainable urban development while ensuring inclusiveness to ensure equitable benefits. These findings underscore the need for policies addressing digital inclusivity to ensure equitable access for all residents.

Keywords: Adaptive urban services; Smart cities initiatives; Urbanising cities; Sustainable urban development.

Manuscript ID: ICCAUA2025EN0208

Design Strategies To Prevent Sexual Harassment At Public Transportation Nodes: A Case Study Of Transit-Oriented Development Areas In Bangkok, Thailand

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Abstract:
One in three women and one in six men experience sexual harassment, which is still a widespread problem. The study employs the conceptual frameworks of Crime Prevention Through Environmental Design (CPTED) and Transit-Oriented Development (TOD) to investigate Bangkok's public transit system and communities susceptible to sexual offenses. By examining crime statistics and environmental variables, the research pinpoints areas at risk of sexual crimes. This study applied physical analysis of public transportation development areas to identify appropriate locations and construct questionnaires to inquire about public perceptions of safety. The findings demonstrate that poorly planned public places, such as dark locations and isolated sidewalks, raise the crime rate and heighten feelings of unsafety. Low visibility and insufficient surveillance also raise perceived and actual dangers. The study helps create appropriate design guidelines and emphasizes the need for gender-inclusive urban planning to develop safe and socially equitable areas in Bangkok's future public transit zones.

Keywords: Urban safety, Mass rapid transit, Sexual crime.

Manuscript ID: ICCAUA2024EN0003

Examining Campus Alleys in Terms of Spatial Quality and Architectural Space for Campus Sustainability

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Abstract:
This study investigates the spatial quality, architectural structure, and contemporary functional quality parameters of alleys within university campuses in Turkey. Alleys play a significant role in shaping public spaces on campuses, fostering social interaction, and enhancing the aesthetic and functional value of urban environments. Contemporary campus designs prioritize principles of sustainability, accessibility, and urban aesthetics. Technological advancements are increasingly integrated to enhance the functional quality of university campuses. Smart lighting systems improve safety while ensuring energy efficiency, whereas interactive information boards and augmented reality (AR) applications enrich user experience. Furthermore, IoT-based sensors enable efficient management of public spaces by analyzing air quality, pedestrian density, and noise levels. Focusing on Akdeniz University, this study analyzes the architectural and spatial attributes of its alleys, evaluating their contribution to urban identity and public life. It also explores how technological innovations can elevate the utility and value of these alleys.

Keywords: Alley, Spatial Quality, Sustainability, Technological Advancements, Public Space.

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Bridging Urban Mobility Gaps: Integrating Rapid Transit Railways into Lusaka City's Transport Network

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Abstract:
This study explores the feasibility of a rapid transit railway system to address Lusaka City's growing transportation challenges caused by rapid urbanization and population growth. The research proposes the Chongwe-Kafue line through Lusaka to enhance urban mobility. Using Google Earth and QGIS for station identification, mapping and distance analysis, the study delineates a 92.8 km main corridor with 13 branch-off lines spanning 51.6 km, including two direct airport connections, designed to enhance accessibility and efficiency. Travel time analysis, based on Delhi Metro's operational model, estimates a 105.6-minute journey with an average speed of 60 km/h. Additionally, fare structures and construction costs were evaluated. The findings demonstrate the system's viability as an efficient alternative to minibus-dominated transport, offering reduced travel times and improved connectivity, stimulating economic growth and supporting sustainable urban development. This research provides a practical framework for policymakers and urban planners to implement a feasible transit solution in Lusaka.

Keywords: Rapid Transit; Urban Mobility; Railway Network; Transportation Planning; Sustainable Development.

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Empowering Urban Sustainability Through Higher Education: A Strategic Framework for Student-Driven Initiatives at Istanbul Gelisim University

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Abstract:

University campuses serve as critical infrastructures within specific regions, playing a pivotal role in the development of surrounding communities by fostering knowledge dissemination and contributing to the establishment of knowledge clusters. This study explores the impact of Istanbul Gelisim University's sustainability initiatives, focusing on student engagement, strategic planning, collaboration, and innovation as key drivers of urban sustainability. Using structured questionnaires, the research gathers quantitative data on students' perceptions and identifies barriers, opportunities, and strategies for enhancing sustainability efforts on campus. It proposes an integrated framework combining current practices with innovative, actionable steps to guide sustainable campus development. Emphasising alignment with the UN Sustainable Development Goals (SDGs), the study highlights the university's role in minimising environmental impact and promoting inclusive stakeholder participation. Key recommendations include forming a sustainability committee, launching awareness campaigns, conducting energy audits, and initiating waste reduction programs. Long-term goals suggest investing in renewable energy, incorporating sustainability into infrastructure planning, and supporting sustainability-focused research. This approach positions Gelisim University as a model for sustainability in higher education, demonstrating how education, collaboration, and practical initiatives can address urban sustainability challenges and empower students to contribute meaningfully to a sustainable future.

Keywords: Urban Sustainability; Higher Education; Student Engagement; Sustainable Development Goals (SDGs); Sustainability Initiatives

Manuscript ID: ICCAUA2025TR0001

Investigation of the Effect of Public Space Transformations on the User's Perception of Space and its Relationship with Local Government Atakum Yalı Café Example

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Abstract:
The transformation of modern cities under the pressure of rapid urbanization and planning has made public spaces critical points of social life. When the spatial organization of cities is shaped by social and cultural contexts, it is seen that there are factors that affect individuals' perception of space and their relations with public spaces. Norberg-Schulz (1971) argues that space has not only a physical but also an emotional and cultural dimension, while Tuan (1990) emphasizes that culture, experience and environmental attitudes form perception. The aim of the study is to examine the deterioration of individuals' perception of space in the context of planning and spatial perception if the user's relationship with space and society turns into a tactical tool of planning, which is an implementing tool of the state. In this context, the study is based on two main research questions. First, how power relations and political structure affect planning processes in public spaces will be analyzed. Secondly, the change in the perception of the public as the user of the spaces that are produced or not completed on the grounds of conflict will be investigated. The Yalı Kafe project area in Atakum district of Samsun, where the transformation process is ongoing, has been selected as the sample area.
Keywords: Public Space; Public Area; Perception; Perception of Space; City.

Kamusal Alan Dönüşümlerinin Kullanıcının Mekân Algısına Olan Etkisi ve Yerel Yönetim ile Olan İlişkisinin İncelenmesi Atakum Yalı Kafe Örneği

Özet:
Modern kentlerin hızlı kentleşme ve planlama baskısı altında geçirdiği dönüşüm, kamusal alanları toplumsal yaşamın kritik noktaları haline getirmiştir. Kentlerin mekânsal organizasyonu, toplumsal ve kültürel bağlamlarla şekillendiğinde, bireylerin mekân algısını ve kamusal alanlarla kurdukları ilişkileri etkileyen faktörler olduğu görülmektedir. Norberg-Schulz (1971), mekânın sadece fiziksel değil, duygusal ve kültürel bir boyutu olduğunu öne sürerken; Tuan (1990) kültür, deneyim ve çevresel tutumların algıyı oluşturduğunu vurgulamaktadır. Çalışmanın amacı, kullanıcının mekân ve toplumla olan ilişkisi, devletin uygulayıcı bir aracı olan planlamanın taktiksel bir aracına dönüşürse, bireylerin mekân algısındaki meydana getireceği bozulmaları, planlama ve mekânsal algı bağlamında irdelemektir. Bu bağlamda çalışma, iki temel araştırma sorusu üzerine kurulmuştur. İlk olarak, güç ilişkileri ve politik yapının kamusal mekanlardaki planlama süreçlerini nasıl etkilediği incelenecektir. İkinci olarak, üretilen ya da çatışma zemininde tamamlanamayan alanların kullanıcısı olarak kamunun algısındaki değişim araştırılacaktır. Örneklem alanı olarak, dönüşüm süreci devam eden Samsun'un Atakum ilçesindeki Yalı Kafe proje alanı seçilmiştir.
Anahtar Kelimeler: Kamusal Alan; Kamusal Mekân; Algı; Mekân Algısı; Kent.

Manuscript ID: ICCAUA2025TR0006

The Role of Local Governments in the Transformation of Public Spaces: The Case of Atakum City Square

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Abstract:
Beyond being physical spaces, public spaces are critical for social interaction and social integration. Local governments have great influence over public spaces due to their authority to regulate, improve and open these spaces for use. Power conflicts between local governments and plan changes accelerate the transformation of these spaces. This article examines the effects of interventions and power dynamics in planning processes on the transformation of public spaces through the example of Atakum City Square. It presents a theoretical framework for public spaces and squares and evaluates how planning decisions and local government actions affect the functionality and social dynamics of public spaces. In the study, qualitative and quantitative methods are combined to collect data through spatial observations, interviews with local government representatives and user surveys. The main findings show that the power dynamics of local governments affect the functional structure of the square and lead to a narrowing of the diversity of activities. Despite physical improvements, social inclusion deficiencies persist. This study contributes to the literature by providing recommendations for the preservation of democratic and inclusive public spaces.

Keywords: Public Space; Power Dynamics; Local Governments; Plan Changes; Atakum.

Kamusal Alanların Dönüşümünde Yerel Yönetimlerin Rolü: Atakum Kent Meydanı Örneği

Özet:
Kamusal alanlar, fiziksel mekânlar olmanın ötesinde, toplumsal etkileşim ve sosyal bütünleşme için kritik öneme sahiptir. Yerel yönetimlerin bu alanları düzenleme, iyileştirme ve kullanıma açma yetkileri nedeniyle, kamusal alanlar üzerindeki etkileri büyüktür. Yerel yönetimler arasındaki güç çatışmaları ve plan değişiklikleri, bu alanların dönüşümünü hızlandırmaktadır. Bu makale, planlama süreçlerindeki müdahalelerin ve güç dinamiklerinin kamusal alanların dönüşümüne etkilerini Atakum Kent Meydanı örneği üzerinden incelemektedir. Kamusal alanlar ve meydanlar özelinde teorik bir çerçeve sunulmakta, planlama kararlarının ve yerel yönetim eylemlerinin kamusal alanların işlevselliğini ve sosyal dinamiklerini nasıl etkilediği değerlendirilmektedir. Araştırmada, nitel ve nicel yöntemler bir arada kullanılarak mekânsal gözlemler, yerel yönetim temsilcileri ile görüşmeler ve kullanıcı anketleri yoluyla veri toplanmıştır. Temel bulgular, yerel yönetimlerin güç dinamiklerinin meydanın fonksiyonel yapısını etkilediğini ve aktivite çeşitliliğinde daralmaya yol açtığını göstermektedir. Fiziksel düzenlemelere rağmen, sosyal kapsayıcılık yetersizlikleri devam etmektedir. Bu çalışma, demokratik ve kapsayıcı kamusal alanların korunmasına yönelik öneriler sunarak literatüre katkıda bulunmaktadır.

Anahtar Kelimeler: Kamusal Alan; Güç Dinamikleri; Yerel Yönetimler; Plan Değişiklikleri; Atakum.

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Visual Quality Analysis of the Urban Fabric and Landscape Value of Hüseyin Avni Ulaş Neighbourhood West Campus in Erzurum

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Abstract:
The aim of this study is to evaluate the urban fabric and landscape value of the West Campus of Hüseyin Avni Ulaş Neighbourhood, a new residential area in Erzurum, through visual quality analysis. The analysis was carried out using photographs taken from the study area. A questionnaire designed for visual quality assessment was administered to undergraduate and postgraduate students of the Faculty of Architecture and Design at Atatürk University during the 2024–2025 academic year. The questionnaire consisted of two parts: the first focused on the urban fabric—such as vegetation diversity, landscape quality, and the visual appearance of building façades—while the second evaluated the parks in the area, considering factors such as overall visual impact, structural design, and planting design quality. Participants rated each photograph on a 5-point Likert scale. Statistical analysis of the data was conducted using the SPSS program. Based on the results, deficiencies in the urban and landscape character of the area were identified, and planning and design suggestions for sustainable development were proposed.
Keywords: Urban Fabric; Landscape Value; Visual Quality Analysis; Erzurum.

Erzurum Hüseyin Avni Ulaş Mahallesi Batı Yerleşkesinin Kentsel Doku Ve Peyzaj Değerinin Görsel Kalite Analizi

Özet:
Bu araştırmanın amacı; Erzurum kentinin yeni yerleşim alanı olan Hüseyin Avni Ulaş Mahallesi Batı Yerleşkesi'nin kentsel doku ve peyzaj değerinin görsel kalite analizi ile değerlendirilmesidir. Araştırma alanından çekilen fotoğraflar üzerinden görsel kalite analizi yapılmıştır. Görsel kalite analizi için hazırlanan anket, 2024-2025 eğitim-öğretim yılında öğrenim gören Atatürk Üniversitesi Mimarlık ve Tasarım Fakültesi'nde lisans ve lisansüstü eğitim gören öğrencilere uygulanmıştır. Anket iki aşamadan oluşmaktadır. İlk aşamada araştırma alanının kentsel dokusu ele alınmış; bitkisel çeşitlilik, peyzaj kalitesi, yapıların dış cephe görselliği gibi, ikinci aşamada araştırma alanındaki parklar ele alınmış; parkların genel görsel etkisi, yapısal tasarımı, bitkisel tasarım kalitesi gibi değerlendirme kriterine göre katılımcıların puanlandırma yapmaları istenmiştir. Her bir fotoğrafı, 5'li Likert ölçeğinde 1 ile 5 arasında puanlandırmaları istenmiştir. Anket verilerinin SPSS programında istatistiksel analizi yapılmıştır. Elde edilen sonuçlara göre, Hüseyin Avni Ulaş Mahallesi Batı Yerleşkesi'nin kentsel doku ve peyzaj değerindeki eksikler saptanarak sürdürülebilir bir gelişim için planlama ve tasarım önerileri sunulmuştur.
Anahtar Kelimeler: Kentsel Doku; Peyzaj Değeri; Görsel Kalite Analizi; Erzurum.

Manuscript ID: ICCAUA2025TR0017

The Use of the Space Syntax Method in the Design of Landscape Areas for Users in Hospital Gardens: Van YYU Dursun Odabaş Medical Center

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Abstract:
Hospital gardens are important open spaces where many users meet their physical and mental needs. Due to the unhealthy and stressful environments in hospital interiors, hospital gardens contribute to the recovery process of patients. Today, landscape design, which gives importance to the use of green areas, offers important design suggestions for hospital gardens. These design suggestions are developed by taking hospital users into consideration, sometimes spatially and sometimes in the design and positioning of the urban equipment used. This study, the landscape design of the hospital garden of Van Yuzuncu Yil University Dursun Odabas Medical Center was evaluated using the Space Syntax method. In line with the axial and visibility analyses of this method, the missing points in the current landscape design of the garden were tried to be determined and suggestions were presented. This study will contribute to identifying suitable areas in the landscape design evaluation of hospitals using the space syntax method.
Keywords: Hospital; Landscape Design; Space Syntax; Hospital Garden.

Hastane bahçelerinde kullanıcılara yönelik peyzaj alanları tasarımında Mekan Dizimi yönteminin kullanılması: Van YYÜ Dursun Odabaş Tıp Merkezi

Özet:
Hastane bahçeleri hastalar, hasta yakınları, sağlık personelleri gibi birçok kullanıcı tipinin fiziksel ve ruhsal ihtiyaçlarını giderdiği önemli açık mekanlardır. Hastane iç mekanlarındaki yoğunluk, sağlıksız ve stresli ortamlardan dolayı hastane bahçeleri, kullanıcıların bu ortamlardan bir süreliğine uzaklaşmasına katkı sağladığı gibi hastaların iyileşme sürecine de katkı sağladığı bilinmektedir. Günümüzde dış çevrenin kullanıcıya yönelik tasarımında ve kalitesinin arttırılmasında özellikle yeşil alan kullanımlarına önem veren peyzaj tasarım disiplini hastane bahçeleri için de önemli tasarım önerileri sunmaktadır. Bu tasarım önerileri hastane kullanıcıları göz önünde bulundurularak kimi zaman mekânsal olarak kimi zaman bu mekanlarda kullanılacak donatılar özelinde geliştirilmektedir.Bu çalışmada Van Yüzüncü Yıl Üniversitesi Dursun Odabaş Tıp Merkezine ait hastane bahçesinin Mekan Dizimi yöntemi kullanılarak peyzaj tasarımı değerlendirilmiştir. Mekan Dizimi yöntemine ait aksiyel ve görünürlük analizleri doğrultusunda hastane bahçesinin mevcut peyzaj tasarımındaki eksik noktaları tespit edilmeye çalışılmış ve öneriler sunulmuştur. Bu çalışma hastanelerin peyzaj tasarımı değerlendirmesinde mekan dizimi yöntemi ile uygun alanları tespit etmeye katkı sağlayacaktır.
Anahtar Kelimeler: Hastane; Peyzaj Tasarımı; Mekan Dizimi; Hastane Bahçesi.

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Security Perception in Public Spaces and Open Public Spaces: Samsun, İlkadım, Batı Park Sample

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Abstract:
This study aims to evaluate the perception of security in public spaces and the parameters that determine this perception in the context of open and green spaces. Globalization, economic transformations and global epidemics have changed the way public spaces are used and increased the importance of the concept of security. Within the scope of the study, the public use and security status of Batıpark in Samsun city were analyzed. In the research, the intended use of the park, visitor profile, security measures and security perception were systematically addressed through survey and observation techniques. Surveys with 180 participants revealed that factors such as lighting, security personnel and regular maintenance directly affect the perception of security. The study reveals the need for improvements in design and management processes to increase the perception of security in public open-green spaces.

Keywords: Public Space; Green Space Security; Public Space and Security; Security Perception; Open Public Space.

Kamusal Alan Ve Açık Kamusal Alanlarda Güvenlik Algısı: Samsun, İlkadım, Batı Park Örneklemi

Özet:
Bu çalışma, kamusal alanlarda güvenlik algısını ve bu algıyı belirleyen parametreleri açık ve yeşil alan bağlamında değerlendirmeyi amaçlamaktadır. Küreselleşme, ekonomik dönüşümler ve küresel salgınlar, kamusal alanların kullanım biçimini değiştirmiş ve güvenlik kavramının önemini artırmıştır. Çalışma kapsamında Samsun şehrinde yer alan Batıpark'ın kamusal kullanımı ve güvenlik durumu analiz edilmiştir. Araştırmada, parkın kullanım amacı, ziyaretçi profili, güvenlik önlemleri ve güvenlik algısı anket ve gözlem teknikleriyle sistematik olarak ele alınmıştır. 180 katılımcı ile gerçekleştirilen anketler doğrultusunda, aydınlatma, güvenlik personeli ve düzenli bakım gibi unsurların güvenliğe yönelik algıyı doğrudan etkilediği belirlenmiştir. Çalışma, kamusal açık-yeşil alanlarda güvenlik algısının arttırılması için tasarım ve yönetim süreçlerinde iyileştirmeler yapılması gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Kamusal Alan; Yeşil Alan Güvenliği; Kamusal Alan ve Güvenlik; Güvenlik Algısı; Açık Kamusal alan.

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The Impact of Changing Ground-Floor Functions on Sidewalk Accessibility in Urban Spaces

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Abstract:
In urban space design, pedestrian movement and circulation areas play a crucial role. Sidewalks, as part of pedestrian circulation areas, serve as boundary elements in the interface between architecture and the city. Additionally, they function as connectors that facilitate pedestrian movement from one point to another and act as thresholds between different modes of transportation and architectural structures. However, the functional diversity of buildings adjacent to sidewalks and the interplay between active and passive transportation modes lead to various accessibility issues for pedestrians. Among these challenges, the changing functions of ground-floor units in adjacent buildings and the increasing outdoor expansions of these functions stand out. These transformations negatively impact the accessibility of sidewalks. This study examines the impact of the evolving functions of commercial ground-floor spaces on the accessibility of sidewalks. In this context, the relationship between the ground floors of mixed-use buildings and sidewalks along Elif Su Uludağ Street in the Sarıçam district of Adana, Turkey, was analyzed. The findings reveal that the diversification of commercial functions along the street has contributed to increased outdoor usage, sidewalk encroachments, and, consequently, a decline in accessibility. This situation has restricted the function of sidewalks as public spaces and hindered pedestrian mobility. The study concludes that sidewalks should be planned and designed in accordance with evolving functions. Furthermore, it emphasizes that ensuring safety, property boundaries, and accessibility should be considered together in preventing sidewalk encroachments.
Keywords: Sidewalk Encroachment; Accessibility; Urban Interface; Functional Change; Safety Strip; Property Strip.

Değişen Zemin Kat İşlevlerinin Kaldırım Erişilebilirliğine Etkisi

Özet:
Kentsel mekân tasarımında, yaya hareketleri ve dolaşım alanları büyük önem taşımaktadır. Yaya dolaşım alanları içerisinde yer alan kaldırımlar, mimarlık ve kent arayüzünde bir sınır öğesi olarak yer alırlar. Kaldırımlar aynı zamanda yayayı bir noktadan diğer bir noktaya ulaştıran bir tür bağlayıcı görev üstlenirler. farklı ulaşım türleriyle mimari yapılar arasında bir eşik görevi üstlenmektedir. Ancak, kaldırım çevresinde yer alan yapılardaki işlevsel çeşitlilik ve aktif-pasif ulaşım türleri arasındaki komşuluk ilişkisi, yayaların yürüyüş sırasında çeşitli erişilebilirlik sorunları yaşamasına neden olmaktadır. Bu sorunların başında, kaldırımlara komşu binaların zemin kat işlevlerinin değişkenlik göstermesi ve dış mekâna taşan kullanımların artması gelmektedir. Zemin kattaki bu değişimler, kaldırımların erişilebilirliğini olumsuz etkilemektedir. Bu çalışma, kaldırımlar ile binaların zemin katındaki ticari alanların değişen işlevleri arasındaki ilişkinin erişilebilirlik üzerindeki etkilerini incelemektedir. Bu kapsamda, Adana ili Sarıçam ilçesindeki Elif Su Uludağ Caddesi üzerindeki karma kullanımlı binaların zemin katları ile kaldırımlar arasındaki ilişki ele alınmıştır. Cadde boyunca ticari işlevlerin çeşitlenmesi, dış mekân kullanımlarının artmasına ve yaya kaldırımlarında işgal problemlerine yol açarak erişilebilirliği olumsuz yönde etkilemiştir. Bu durum, kaldırımların kamusal alan olarak işlevini kısıtlamış ve yaya hareketliliğini engellemiştir. Çalışma sonucunda, kaldırımların değişen işlevlere uygun şekilde planlanması ve tasarlanması gerektiği sonucuna varılmıştır. Ayrıca, kaldırım işgallerinin önlenmesi için emniyet, mülkiyet şeridi ve erişilebilirlik kavramlarının birlikte ele alınması gerektiği ortaya konmuştur.
Anahtar Kelimeler: Kaldırım İşgali; Erişilebilirlik; Kentsel Arayüz; İşlev Değişikliği; Emniyet Şeridi; Mülkiyet Şeridi.

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The Impact of Night-Time Economy Expansion on Residential Areas: The Case of Kadikoy

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Abstract:
Many cities around the world tend to expand their entertainment-oriented night-time economy to regenerate city centres and increase urban attractiveness. Cities have a complex and multifaceted 'time-space' structure. Central areas are not only places of work, leisure, and socializing but also places to live. This study, conducted as a case study in Kadikoy, one of the central areas of Istanbul, aims to understand the expansion of the night-time economy and the social, spatial, and economic consequences for residents. The research methodology is based on literature review, observation, fieldwork, and interviews. The findings show that the night-time economy contributes to urban vitality but has negative impacts on the transformation of city centers and social livability. In this context, a balanced approach should be taken to the governance and regulation of the night-time economy.

Keywords: Night; Night-Time Economy; Nightlife.

Gece Ekonomisinin Genişlemesinin Konut Alanlarına Etkisi: Kadıköy Örneği

Özet:
Dünyada pek çok kent, kent merkezlerini yeniden canlandırmak ve kentsel çekiciliğini arttırmak için eğlence odaklı gece ekonomisini genişletme eğilimindedir. Kentler, karmaşık ve çok yönlü bir ''zaman-mekan'' yapısına sahiptir. Merkezi alanlar yalnızca çalışma, eğlenme ve sosyalleşme mekanları değil, aynı zamanda yaşam alanlarıdır. İstanbul'un merkezi bölgelerinden biri olan Kadıköy'de örnek alan incelemesi olarak yürütülen bu çalışma, gece ekonomisinin genişlemesinin yaşayanlar üzerindeki sosyal, mekansal ve ekonomik sonuçlarını anlamayı amaçlamaktadır. Araştırma metodolojisi literatür taraması, saha çalışması, gözlem ve görüşmelere dayanmaktadır. Bulgular, gece ekonomisinin kentsel canlılığa katkıda bulunduğu ancak kent merkezlerinin dönüşümü ve sosyal yaşanabilirlik üzerinde olumsuz etkileri olduğunu göstermektedir. Bu bağlamda, gece ekonomisinin yönetişimi ve düzenlenmesinde dengeli bir yaklaşım benimsenmelidir.

Anahtar Kelimeler: Gece; Gece Ekonomisi; Gece Hayatı.

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BOOK OF ABSTRACTS
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SESSION C: Heritage and Cultural Landscapes

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Manuscript ID: ICCAUA2025EN0007

Resilience Strategies of Ottoman Architecture between the 15th and 16th Centuries. Case Study of the Restoration of the Columns at the Bardo National Museum in Algiers

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Abstract:
This article is related to a double disciplinary field, that of cultural history and architectural and urban history. It focuses on the emerging architectural production in Algeria during the Ottoman period, taking the Bardo Museum in Algiers as a case study. This museum has undergone numerous architectural transformations. Among its most emblematic elements are the architraves and columns, witnesses to the passage of time and the tumultuous history of the country. The restoration is of crucial importance for the preservation of this unique heritage and the transmission of its legacy to future generations. The aim of this research is to provide knowledge on professional practices in the field of material and immaterial heritage restoration. More specifically, this study explores in detail the process of restoring the architraves and columns in the courtyard of the National Bardo Museum. It highlights the approaches used and the results obtained during these restoration works.

Keywords: Column; Heritage; Restoration; The Bardo Museum of Algiers.

Manuscript ID: ICCAUA2025EN0022

Modern Architecture and Urbanism in Algeria: A Heritage to be recognized

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Abstract:
From 1830, Algerian cities underwent radical transformations, from compact and introverted entities to sprawling and extroverted ones. In fact, with the introduction of the imported model that was widespread in Europe, especially in France, a new architectural form began apartment buildings, 19th century style, neoclassical style, modern style, and the large complexes of the 60s. During this period and before embarking on the industrialization of construction and the standardization of housing after independence, the design of housing projects was largely inspired by regional architecture and urbanism producing contemporary landscapes which share a common identity and a tradition of Western building know-how inspired by ancestral local architecture. Through a retrospective reading, this research aims to recognize the housing complexes created on the concept of Urban identity, Authenticity, and their reinterpretation, during the 60s: architectural and urban productions formed a typical heritage category: the 20th-century or the modern heritage.

Keywords: Modern Architecture; 20th-Century Heritage; Mass Housing; Urban Identity; Algerian Cities.

Manuscript ID: ICCAUA2025EN0024

Traditional Aurassian Architecture: A Harmony Between Identity, Environment, and Society

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Abstract:
The traditional Aurassian architecture is distinguished by its unique response to local social, cultural, and environmental needs. This study aims to explore the specificities of this architecture, focusing on how it integrates factors such as beliefs, social relationships, climate, materials, and economic resources to create a distinctive habitat. The Aures landscape is structured into three types of settlements: scattered, semi-dispersed (mechta), and clustered (Dechra), characterized by vernacular architecture using ancestral techniques. The analysis focuses on the Chaouia house, known as "taddart," a hierarchical social and economic space that demonstrates optimal adaptation to the local context. The methodology is based on a comparative study of vernacular architectural practices and their socio-cultural influences. The results highlight the importance of integrating these principles into contemporary housing for better quality of life. This research contributes to the valorization of Aurassian architectural heritage by proposing solutions to revitalize modern housing while respecting its traditional roots.

Keywords: Aurassian Architecture; Vernacular Habitat; Socio-Cultural Factors; Architectural Heritage; Aures Landscape.

Manuscript ID: ICCAUA2025EN0026

Unveiling the Depths: Transforming an Abandoned Limestone Quarry into a Tourism Destination in Takerghat, Sunamganj

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Abstract:
Niladri Lake, located in the Takerghat region of Sunamganj, Bangladesh, is a quarry lake formed from an abandoned limestone quarry. Originally a site of industrial limestone extraction, it played a key role in the local and national economies by supplying the Chhatak Cement Factory. After mining ceased, the quarry gradually filled with water, eventually forming Niladri Lake. To understand Niladri Lake's historical and geological significance, the research follows its evolution from an industrial site to a restored water body. The paper covers initiatives to revitalize the region and establish ecological balance by combining environmental awareness, geological heritage preservation, and sustainable tourism. This study uses field surveys, interviews, and impact assessments to explore Niladri Lake's potential for tourism, demonstrating how to restore post-industrial landscapes for environmental and community benefit. The findings emphasize the dynamic relationship between nature and industrial activity and offer significant insights for land reclamation and sustainable tourism development.

Keywords: Niladri Lake; Limestone; Quarry; Geological Heritage; Sustainable Tourism.

Manuscript ID: ICCAUA2025EN0029

The Potential of Drones in Documenting and Preserving Cultural Heritage in Bahrain

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Abstract:
Unmanned Aerial Vehicles, has become significant in the field of cultural heritage preservation, offering new methods for documenting, monitoring, and conserving. In Bahrain, the potential of drones to enhance preservation efforts remains largely untapped due to regulatory, technical, and operational challenges. This research explores the application of drone technology in the protection of Bahrain's cultural heritage, focusing on their ability to produce 3D models, improve accessibility, and support conservation efforts. Through interviews with architects and case studies of successful drone implementations in other regions, this study identifies both the potential benefits and the challenges faced in using drones for heritage preservation in Bahrain. The findings suggest that, legal restrictions, data management complexities, and operational costs are significant barriers that must be addressed. The study proposes a structured framework for integrating drones into Bahrain's preservation strategies, emphasizing the need for regulatory reform, technological optimization, and collaboration between governmental and heritage organizations.

Keywords: Bahrain; Cultural Heritage; Drones; Documentation; Preservation.

Manuscript ID: ICCAUA2025EN0037

From Antiquity to Modernity: The Architectural Evolution of the Stadium as a Sports Heritage

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Abstract:
The stadium has symbolized athletic events since antiquity, from the 8th-century BCE Olympic Games at Olympia to today's modern competitions. Despite its monumental significance, its architectural evolution remains underexplored. This paper traces the stadium's journey from a simple structure in the Archaic period to a monumental typology in Imperial Rome, highlighting its decline during Late Antiquity and subsequent abandonment. After a millennium-long hiatus, the stadium re-emerged with the modern Olympic movement in the late 19th century, evolving into one of today's most sophisticated architectural forms. By analyzing its physical and intangible transformations, this study examines how the stadium resisted obscurity, adapting to changing cultural and historical contexts while maintaining its status as a prestigious architectural typology.

Keywords: Stadium Architecture; Olympics; Sports Heritage; Athletics; Sports Architecture.

Manuscript ID: ICCAUA2025EN0044

Documentation and Conservation Through Replicas and Imitations: The Case of Contemporary 'Traditional' Cafes in Bahrain

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Abstract:
This research aims to investigate the importance of authenticity from the perspective of lay people. It attempts to answer the question of authenticity and shed light on the positive side of replicas and imitations of traditional architecture as means of documentation and conservation. It discusses these ideas through case studies of contemporary cafes in Bahrain that adapts traditional themes. Through field studies, interviews and surveys, it investigates how authentic 'traditional themed cafes' are perceived by their owners, working team and visitors. Based on the findings, the paper argues that without undermining the importance of authenticity in original heritage sites, replicas and imitations of traditional architecture and interiors should be acknowledged and considered as means of documentation and indeed conservation of cultural heritage. The paper concludes by highlighting the importance of sustaining interest in cultural heritage to young and future generations in ways that makes it more accessible and inclusive.

Keywords: Authenticity; Cultural Heritage; Replicas and Imitations; Traditional Architecture; Contemporary Cafés in Bahrain.

Manuscript ID: ICCAUA2025EN0047

Designing the Future of Cultural Heritage: From A Primary School and Mansion to the Towns' Memory Museum in Zara, Central Anatolia

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Abstract:
The preservation of historical monuments is particularly important in societies that do not have a rich written history. Re-purposing historic buildings, which have become dysfunctional over time, is a method ensuring the preservation and continuation of cultural heritage. In this context, on-site documentation forms the basis of an effective re-use scheme. For many historic buildings the plans are obtained and construction phases are identified for the first time through this process. This study presents and discusses the documentation and re-purposing of a historical building under preservation in Zara, Sivas, Central Anatolia, as a local memory museum representing and upholding the towns' and its own history. Initially built as a primary school by Armenian craftsmen in 1860-1870, the building later changed hands to be reused as a mansion and is currently dysfunctional.

Keywords: Zara; Cultural Heritage; Armenian Primary School; Noah's Mansion; Towns' Memory Museum.

Manuscript ID: ICCAUA2025EN0054

The "Parco dei Tratturi della Puglia": A Historical-Cultural Heritage Between Migrations and Landscape

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Abstract:
The tratturi of Puglia (South of Italy) constitutes a historical and cultural heritage, forming the "Parco dei tratturi della Puglia", a symbol of the seasonal migrations of livestock and the anthropic signs in different eras. These routes connect the summer pastures of Abruzzo with the winter pastures of the Apulian and Lucanian plains. In Puglia, there are 9 tratturi, 61 tratturelli, 8 bracci, and 3 riposi, some of which are in different states of preservation. In particular, the Pescasseroli-Candela tratturo, crosses five municipalities. The enhancement of the tratturi includes their recognition as landscape infrastructures and the mitigation of the impact of the surrounding infrastructures. From the historical and field research analysis, guidelines have been defined to protect historical, cultural, and natural values, promoting tourism and the development of economic activities. The interventions concern mobility, ecology, identity, signage, and the creative promotion of the tratturi, to preserve them as heritage.

Keywords: Conservation; Exploitation; Recovery; Identity; Testimony.

Manuscript ID: ICCAUA2025EN0056

Transformations of Housing in the M'Zab Valley: Contemporary Urban Challenges and Threats to Identity

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Abstract:
The ksour of the M'Zab Valley, located in southern Algeria, were founded in 1101 by the Mozabites. These fortified villages, in their original configuration, incorporate exemplary architectural and urban elements, promoting sustainable housing that is perfectly adapted to the Saharan context and reflective of the local cultural identity. In recognition of their outstanding universal value, UNESCO implemented specific preservation and protection measures as early as 1982. Architect André Ravéreau described this valley as a genuine "lesson in urbanism", highlighting its remarkable balance between functionality, sustainability, and respect for the Saharan ecosystem. However, recent urban transformations in the M'Zab Valley, which are the focus of this doctoral thesis, reveal significant changes. New development projects, located outside the fortified walls surrounding the ksour, have multiplied to meet the growing demand for housing. While necessary, these interventions have caused a rupture with the urban landscape and the Saharan architectural identity. A chronological analysis of architectural samples makes it possible to trace the elements that have been abandoned, reproduced, or transformed over time, while also questioning how these developments reflect Saharan identity and impact the built heritage.
Keywords: Ksour of M'Zab; Saharan Urbanism; Cultural Identity; Urban Transformation; Built Heritage.

Manuscript ID: ICCAUA2025EN0058

Cultural Heritage in Transition: The Dynamics of Heritagization in Urban Regeneration

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Abstract:
Heritagization, as a transformative process, extends beyond preserving cultural heritage by reinterpreting and reshaping it to align with contemporary needs and aspirations. Despite its potential, heritagization has faced criticism for lacking a robust theoretical foundation and for being driven by varying motives that can commodify cultural heritage. This study investigates the dynamics of heritagization within the context of urban regeneration projects, focusing on its influence in steering such initiatives toward urban branding and the promotion of cultural tourism. Employing a descriptive-qualitative methodology, the research draws from academic literature, theoretical frameworks, and case studies to provide a comprehensive understanding of this phenomenon. The findings reveal that heritagization transcends its conventional role as a preservation mechanism, instead actively reconfiguring cultural heritage. It achieves a nuanced balance by branding and showcasing heritage to enhance tourism appeal while safeguarding the cultural heritage for future generations.
Keywords: Cultural Heritage; Heritagization; Urban Regeneration; Urban Branding; Cultural Tourism.

Manuscript ID: ICCAUA2025EN0060

Perceived Values of Zonguldak Central Scrubber Area as An Alternative Approach to Preservation of Industrial Heritage

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Abstract:
Zonguldak, a modern industrial city in Turkey, has witnessed the highest social life and production style, urban architecture, and socio-economic relations in the 20th century. As a prominent industrial symbol in the city, the Zonguldak Central Scrubber Area has become idle with the neoliberal economy. This paper focuses on the values of this site by examining the pre- and post-industrialization status. As a methodology, conceptual and value mapping have been conducted on the data, of which both 10 semi-structured in-depth interviews with three stakeholder groups: decision-makers, site employees, and researchers and archival data. This approach presents technological, document, socio-cultural, political, aesthetic, symbolic, identity, and economic values between 1970s and 2000s. The mixed method analysis of interviews emphasizes the organic role of the stakeholders in the preservation process. The importance of the study is to reveal the multi-dimensional character of Zonguldak's industrial heritage through place-based values.
Keywords: Urban Preservation; Industrial Heritage; Perceived Values; Conceptual Mapping; Value-Based Approach.

Manuscript ID: ICCAUA2025EN0068

The Impact of Historic Building Illumination on Urban Landscape: A Case Study of the Galata District

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Abstract:
The illumination of architectural, artistic, and urban features in outdoor spaces forms the core of urban lighting practices. Among these elements, buildings hold a prominent role. The primary objective of façade lighting should surpass merely rendering structures visible at night; it should aim to enhance architectural narratives and evoke aesthetic appreciation. In this context, the illumination of historic and iconic contemporary structures, along with their surroundings, plays a pivotal role in promoting the associated urban areas and reinforcing the city's identity. This research, centred on the Galata District, was carried out in two stages. In the first stage, a detailed analysis was conducted on the existing façade lighting of the emblematic Galata Tower and seven other historic buildings in its vicinity, alongside the lighting conditions of nearby pedestrian pathways. The study area, including its buildings, pathways, and existing lighting systems, was digitally modelled in three dimensions. In the second stage, proposals were developed to enhance the existing lighting conditions. These design solutions were visualized using three-dimensional models. This comprehensive study of the Galata District's lighting environment offers targeted recommendations to highlight its historical fabric, providing a valuable resource for urban beautification initiatives.

Keywords: Urban Lighting; Galata District; Historic Buildings; Façade Lighting.

Manuscript ID: ICCAUA2025EN0069

Ethno-Sustainability of an Indigenous Architecture in the Northern Philippines Using Grounded Theory

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Abstract:
This study explores, presents, and defines "Itawit architecture" as a distinct architectural practice in the Northern Philippines. The data culled are from two distinct architectural practices in the province of Cagayan: The Middle Cagayan style and the Southern Cagayan style. This research includes elicited data from the respondents (building owners, carpenters, shamans, and elders) from the Middle and Southern Cagayan. Grounded Theory a.k.a "continuing comparative analysis", with combinations of approaches (including coding, memoing, and thematic analysis) known as bricolage, was used to inductively explore the case of Itawit architecture to thematize and interpret their vernacular architecture as part of their cultural heritage. Central to this study is the idea of "ethno-sustainability" as practiced by the locals, and the transferring of knowledge via oral tradition, apprenticeship, and others. This led to a comprehensive collection of terminology, visualizations, photos, and other media showing their enduring building traditions in the Philippines.

Keywords: Sustainable Architecture; Ethno-Sustainability; Grounded Theory; Vernacular Architecture; Philippines.

Manuscript ID: ICCAUA2025EN0077

Topographical Stories: Landform and Riverscape as a Part of Landscape in Ankara's Plans

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Abstract:
Topography has been one of the fundamental elements that initiated the building of the environment in history. As an "Anatolian Highland", Ankara presents different topographical characteristics, consisting of terraces, valleys, slopes, and creeks related to the valley formations. These characteristics define the authentic qualities of the city. In the last decades, the physical topography has been vigorously flattening while the waterscape has been left out of the scope of the urban domain. To understand the roots of the problem, the urban plans reflect a significant attitude toward the city's topography. In this respect, the research will address the valleys, peaks, and sloped land and the use of central creaks in the city as significant elements of central Ankara's urban and rural landscape. A thorough reading and exploration of land use in urban plans and maps will be conducted on the Jansen Plan, the Yücel-Uybadin Plan, the 1970 Master Plan, and the 1990 Master Plan of Ankara.

Keywords: Landform; Riverscape; Landscape; Ankara; Urban Planning.

Manuscript ID: ICCAUA2025EN0082

Influence of European Modernism on the Housing Typology in Mexico

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Abstract:
Since the beginning of the last century, the shortage of housing, mainly among the lower-income groups of society, has triggered the emergence and development of new ways of conceiving a space through more advanced construction techniques and the implementation of technology. Within architecture, the New Building represented the modern movement in Europe by implementing models in a more rational way while designing functional spaces both architecturally and on an urban scale. The New Building had a great influence in Mexico through the construction of standardized housing complexes that eventually evolved into large-scale and vertical multi-family housing that represented a utopia of modernity and a solution to the demand for living space. Throughout this article I analyze the origin of this new type of housing, the changes it generated upon its arrival in Mexico, as well as its adaptation as a foreign vision inserted in the national context.
Keywords: Housing; Modern Movement; New Building; Functional Architecture; Rationalism.

Manuscript ID: ICCAUA2025EN0087

Anonymity Landscapes: Transforming An Abandoned CoVID-19 Field Medical Facility into A Memorial Park

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Abstract:
The COVID-19 pandemic has precipitated profound social disruptions and posed significant global public health challenges. Wuhan, one of the most severely affected cities in China, responded to its medical facility shortages by constructing two field hospitals, Leishenshan and Huoshenshan, in February 2020, shortly after the city's lockdown in January 2020. These temporary facilities ceased operations following the lockdown's conclusion in April 2020. The pandemic has underscored the critical role of urban parks in promoting physical and psychological well-being, particularly in densely populated environments. This study examines the potential adaptive reuse of the decommissioned field hospital sites as an urban memorial park, employing an anonymity landscape approach. The proposed design aims to create a reflective public space that engages visitors with themes of life and mortality, anonymity and commemoration, and destruction and recovery. This initiative seeks to address ongoing public health crises while fostering resilience and collective remembrance in urban contexts.
Keywords: Anonymity Landscape; Memorial Park; Landscape Design; Wuhan; Covid-19.

Manuscript ID: ICCAUA2025EN0089

Conservation Strategy Proposal for Antakya Historic City Centre after 2023 Kahramanmaraş Earthquake

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Abstract:
Throughout history, many cultural heritage buildings worldwide have been severely damaged by earthquakes and even faced the risk of destruction. On February 6, 2023, two earthquakes with a magnitude of 7.7, centered in Pazarcık, and 7.6 in Elbistan, occurred in Kahramanmaraş Province. This study examines the registered buildings in the Antakya urban conservation area after these earthquakes and provides recommendations within the framework of a holistic conservation approach. Within the scope of the study, 250 registered buildings in the area were examined, and their post-earthquake conditions were assessed. Due to its historical development and strategic location, Antioch has hosted many civilizations throughout history, and it reflects the cultural diversity and layered history shaped by these civilizations' various religious, ethnic, and cultural influences. Therefore, it is considered that this study, which will contribute to the preservation and restoration of the city's identity, is of great importance.
Keywords: Antakya (Antioch); Kahramanmaraş Earthquakes; Urban Site; Holistic Approach; Conservation.

Manuscript ID: ICCAUA2025EN0091

Adaptive Reuse vs. New Construction: Sustainable Transformation of a Transit Hostel at IIT Kharagpur

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Abstract:
With the increasing demand for built spaces it is essential for us to be mindful about its environmental impact and hence aim to minimize new construction. This paper investigates the adaptive reuse of a transit hostel at Indian Institute of Technology (IIT), Kharagpur (est. 1951) into a wellness and counseling center for students, juxtaposed against the option of new construction. The research is guided by critical parameters, including heritage value, cost efficiency, environmental impact, and functional adaptability. A comparative cost-benefit analysis, using the above-mentioned parameters, serves as the central methodological framework, incorporating both qualitative and quantitative evaluation. Furthermore, repurposing the transit hostel preserves its heritage value while accommodating the necessary transformations for a modern counseling facility. This research contributes to the discourse on sustainable campus planning by showing the differences between new construction and adaptive reuse. It offers a replicable framework for similar initiatives, bridging heritage conservation with contemporary needs.
Keywords: Adaptive Reuse; Cost-Benefit Analysis; Wellness; Counselling.

Manuscript ID: ICCAUA2025EN0108

Adaptive Reuse in Industrial Heritage: A Bibliometric Review (2004-2024)

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Abstract:
The reuse of post-industrial sites, frequently associated with contemporary themes, represents a subject of considerable interest and study at both the architectural and urban scales. The preservation and adaptive reuse of industrial heritage act as a conduit between the past and the future, while also contributing to urban sustainability. This study analyses the existing literature on repurposed industrial heritage sites, exploring relevant themes, general trends, and current directions. This study investigates approaches, concepts, keywords, authors, documents, organisations, and references within this context. English-language articles indexed in the Web of Science database were examined using the PRISMA protocol. The data obtained from the literature review were visualised through bibliometric mapping using VOSviewer software. Quantitative data were cross-analysed with qualitative and in-depth research findings. The study identifies themes, current trends, and research gaps concerning the reuse of industrial heritage sites.
Keywords: Industrial Heritage; Adaptive Reuse; Bibliometric Analysis; Bibliometric Review.

Manuscript ID: ICCAUA2025EN0119

Critics of the Adaptive Reuse of the House of Parvin Etesami in Tabriz, Iran

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Abstract:
Tabriz is one of Iran's antique cities which is enriched with gorgeous historic houses of the Qajar and Pahlavi eras. The House of Parvin Etesami is one of these beautiful houses in Iran that belonged to this famous Iranian poetess. This historic house is one of the attractive Pahlavi houses in the ancient neighborhood of Tabriz which has faced conservation and adaptive reuse improperly. This article aims to introduce and criticise the inappropriate conservation process of this unique house in Tabriz. After brief research about Tabriz, the conservation process of the House of Parvin Etesami is presented and criticised comprehensively. This historic research is based on qualitative and quantitative methods and personal observations of the author. The results of this article can be useful for the preservationists and conservationists in the field of cultural heritage, architects, and interior designers, in designing in the historic context of the ancient cities worldwide.
Keywords: Adaptive Reuse; House of Parvin Etesami; Historic House; Tabriz; Iran.

Manuscript ID: ICCAUA2025EN0120

Introduction to Tabriz Historic Bazaar Complex as One of the UNESCO World Heritage Sites in Iran

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Abstract:
Tabriz is one of the ancient cities in the northwest of Iran which suffered from natural disasters like severe earthquakes and floods during history. Tabriz Historic Bazaar Complex is one of the UNESCO World Heritage Sites in Iran, the biggest covered bazaar worldwide. This historic complex has faced several earthquakes, floods, and fire accidents but survived each time and still serves as the most important commercial part of the city. This article aims to introduce this UNESCO World Heritage Site internationally for the preservation of this significant complex in Tabriz. After brief research about Tabriz, the Tabriz Historic Bazaar Complex is introduced comprehensively. This historic research is based on qualitative and quantitative methods and personal observations of the author. The results of this article can be useful for the preservationists and conservationists in the field of cultural heritage, architects, interior designers, and urban planners of ancient cities.
Keywords: Tabriz Historic Bazaar Complex; UNESCO World Heritage Site; Cultural Heritage; Tabriz; Iran.

Manuscript ID: ICCAUA2025EN0121

Proposals for the Revitalization of the Historic Quarter of Darb-e-Ghasr, Isfahan, Iran

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Abstract:
Isfahan is one of Iran's ancient cities, famous for its magnificent buildings, especially from the Safavid era. Darb-e-Ghasr is one of the historic neighbourhoods in Isfahan, which consists of many gorgeous houses and precious landmark buildings. Although this historic quarter is rich in valuable cultural heritage, it suffers from ignorance and abandonment of significant buildings. This article aims to propose proper methods for the revitalization of the Darb-e-Ghasr neighbourhood in Isfahan, Iran. After comprehensive research about the neighbourhood's needs, the proposals for improving and revitalizing this momentous context are suggested exhaustively. This historic research is based on qualitative and quantitative methods and the personal observations of the author. The results of this article can be useful for the preservationists and conservationists in the field of cultural heritage as the architects and urban planners for designing in the historical context of ancient cities.
Keywords: Revitalization; Cultural Heritage; Historic Quarter of Darb-e-Ghasr; Isfahan; Iran.

Manuscript ID: ICCAUA2025EN0122

Adaptive Reuse of a Complex of Three Historic Houses in the Dardasht Neighbourhood of Isfahan, Iran

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Abstract:
Isfahan is a gorgeous historic city in Iran well-known for the glorious buildings of the Safavid era. Dardasht is one of the significant neighbourhoods in Isfahan consisting of elegant houses and valuable cultural heritage. There is a complex of three historic houses, Habib Abadi, Katiraei (Kadkhoda), and Badiol Sanaye which are abandoned. This article aims to propose adaptive reuse for the preservation of this historic complex in the Dardasht neighbourhood of Isfahan. After comprehensive research about Isfahan, the neighbourhood of Dardasht, and the current situation of the houses, proposals for the adaptive reuse of this historic complex are suggested comprehensively. This historic research is based on qualitative and quantitative methods and the author's personal observations. The results of this article can be useful for the preservationists and conservationists in the field of cultural heritage and also the architects and interior designers for designing in the historical context of ancient cities.
Keywords: Adaptive Reuse; Cultural Heritage; Historic House; Isfahan; Iran.

Manuscript ID: ICCAUA2025EN0123

Introducing the Masterpieces Adjacent to the Naghsh-e-Jahan Square of Isfahan, Iran

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Abstract:
Isfahan is so-called as “Nesf-e-Jahan” in the Persian language which means “half of the world” due to its magnificent constructions of especially the Safavid period. Naghsh-e-Jahan Square is one of the glorious architectural masterpieces in Isfahan containing of Shah/Imam Mosque, Sheikh Lotfollah Mosque, Gheysariye Entrance, and Aalighapu. This complex, with the aforementioned masterpieces is the symbol of Isfahan in Iran undervalued internationally. This article aims to introduce these historic buildings worldwide for the preservation of this significant complex in Isfahan. After brief research about Isfahan, the Naghsh-e-Jahan Square, Shah/Imam Mosque, Sheikh Lotfollah Mosque, Gheysariye Entrance, and Aalighapu are presented expansively. This historic research is based on qualitative and quantitative methods and personal observations of the author. The results of this article can be useful for the preservationists and conservationists in the field of cultural heritage, architects, interior designers, and urban planners for designing in the historical context of ancient cities.
Keywords: Naghsh-e-Jahan Square; Shah/Imam Mosque; Sheikh Lotfollah Mosque; Gheysariye Entrance; Aalighapu.

Manuscript ID: ICCAUA2025EN0125

The Historic City of Doha in Qatar: Tourism as a Catalyst for a Sustainable Urban Regeneration

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Abstract:
According to the World Tourism Organization, natural and cultural heritage resources are and will remain motivating factors for travel in the near future. According to the experts, people choose travel destinations where they can learn about traditional and distinct cultures in their historic context. This paper focuses on the role of tourism and its implications for urban regeneration in the context of old Doha; Qatar. Therefore, in order to use heritage wisely, it will be necessary to position heritage as an essential element of sustainability and resilience. The research methodology is based on the case study approach. Therefore, two urban regeneration projects will be examined; Souk Waqif and Msheireb. A thorough onsite investigation will be carried out through observation and informal discussions with the local and global tourists. The findings of this research will help to propose recommendations for an appropriate strategy for cultural heritage tourism in Doha and Qatar.
Keywords: Urban Regeneration; Resilience; Cultural Heritage Tourism; Identity; Sustainability.

Manuscript ID: ICCAUA2025EN0131

Criteria for the territorial planning of landscape resources. Application to olive grove landscapes in the province of Jaén (Spain)

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Abstract:
The Province Of Jaén Treasures An Important Heritage Legacy In Its Olive Landscapes, Which Have Gone Through A Long Historical Process Of Formation And Evolution From Antiquity To The Present. The Diverse Natural Support Of Mountains, Meadows And Countryside, Added To The Different Forms And Characteristics Of Cultivation, Promotes Diversity Of Olive-Growing Landscapes. Although There Are Numerous Ways To Access These Landscapes Through Roads, Paths, Urban Centers Or Viewpoints, These Landscape Resources Are Not Usually Articulated With Each Other, Nor Are The Related Interpretive Elements Available. In This Work, The Representative Landscapes Of The Olive Grove In The Province And The Resources For Visual Access Are Identified, Criteria Are Established For Their Organization To Make Them Accessible To Knowledge And Enjoyment And, Therefore, To Their Assessment And Protection By The Entire Community. Society And That They Will Offer Complementary Support For The Sustainable Development Of This Territory.
Keywords: Olive Grove Landscapes; Heritage; Landscape Resources; Territorial Planning; Interpretative Network.

Manuscript ID: ICCAUA2025EN0139

Searching in Phenomenology Theory in Practice, Multisensory Approach of Architecture in Historical Places

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Abstract:
Heritage architecture, beyond its historical, artistic or cultural value, embodies a profound symbolic significance, one that is intricately linked to the sensory experiences it evokes. Designing heritage areas must follow a unique way of dealing with the value of the heritage areas however, sensing the visitors is the target of designers while preparing their conspectus design. attracting the senses of users and having appropriate bodily experiences are major points in designing. Unfortunately, in some designs for heritage areas, designers deal with the place physically and negligee the senses of the visitors, which is the research point of this study. Therefore, this paper delves into the realm of heritage architecture through the lens of phenomenology, a theoretical framework that prioritizes the experiential aspect of architecture. Phenomenology in architecture, especially in heritage spaces, emphasizes the importance of a multisensory approach. It posits that each architectural experience is inherently multisensory, profoundly impacting visitors of cultural heritage. In this context, architecture is a physical structure and a medium that conveys and mediates meanings through a rich tapestry of sensory experiences. This exploration will encompass various phenomena such as light, sound, smell, and texture, which are integral to creating atmospheres that define the experience – atmospheres of transcendence, eternity, community belonging, and an extraordinary spatial character. This paper aims to shift the perspective on how architecture should be approached, especially in conserving and protecting cultural heritage.

Keywords: Architecture; Heritage; Multisensory; Phenomenology.

Manuscript ID: ICCAUA2025EN0141

Predictive Routing for Airborne Monitoring of Heritage Areas

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Abstract:
This research investigates the application of the eCASS (Consolidated Automated Support System) hypothesis and AESA (Active Electronically Scanned Array) radar technology to enhance the operational performance of the UCAS X-47B in the context of cultural heritage protection. By employing advanced Multi-Criteria Decision Analysis (MCDA) methods, including TOPSIS, AHP, and Fuzzy AHP, the research evaluates interference mitigation strategies, focusing on modulation rate optimization and jamming resistance. A case study on the Selinunte Heritage Park demonstrates the integration of airborne and ground-based data, enabling refined sensor fusion and trajectory adjustments. Specifically, the analysis highlights the pivotal role of eigenvector refinement in addressing modulation interference and improving radar cross-section performance. Results reveal significant advancements in interference suppression and signal clarity, underscoring the viability of adaptive EW frameworks for safeguarding vulnerable historical assets. This approach establishes a foundation for integrating military-grade technologies into heritage conservation efforts.

Keywords: Multi-Criteria Decision Analysis, Heritage Surveillance, GIS, Radar Cross-Section.

Manuscript ID: ICCAUA2025EN0142

Dielectric Profiling of Architectural Surfaces in Arid Heritage Sites

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Abstract:
This research explores the impact of barren land environments on the electromagnetic properties of urban materials and their implications for cultural heritage protection through the integration of Very High-Resolution Synthetic Aperture Radar (VHR SAR) and AESA (Active Electronically Scanned Array) radar systems. Using the Selinunte Heritage Park as a case study, the research evaluates how material properties, including dielectric constants and environmental factors, influence Radar Cross-Section (RCS) and signal coherence in barren landscapes. Advanced analytical tools, such as Gray Level Co-occurrence Matrix (GLCM) analysis, Principal Component Analysis (PCA), and Kalman filtering, are employed to refine image interpretation, enhance texture analysis, and mitigate noise. Results reveal that barren land surfaces amplify electromagnetic interactions, affecting signal clarity and target detection. These findings provide a comprehensive framework for optimizing radar performance in culturally significant yet environmentally challenging areas, bridging the gap between electronic warfare and heritage conservation efforts.

Keywords: VHR SAR, Gabor & Kalman Filters, Coherent Scattering, Dielectric Influence.

Manuscript ID: ICCAUA2025EN0143

Signal Denoising under Environmental Stressors in Heritage Monitoring

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Abstract:
This research investigates the integration of Extended Fisher Information Matrices (FIMs) into Software-Defined Radio (SDR) systems to address the challenges posed by low-frequency noise in complex operational environments, including cultural heritage sites. By applying advanced Multi-Criteria Decision Analysis (MCDA) techniques, the study evaluates the impact of noise on SDR components such as Low-Noise Amplifiers (LNAs) and Analog-to-Digital Converters (ADCs). A dual Kalman filtering framework is utilized to dynamically adjust process and measurement noise covariance matrices in real-time, ensuring robust signal estimation. Case studies from Segesta and Selinunte demonstrate significant improvements in noise resilience and signal clarity, with the FIM-driven adaptive algorithms outperforming traditional approaches in scenarios characterized by multipath interference. The findings provide a robust framework for optimizing SDR performance, with potential applications in communication, electronic warfare, and heritage preservation.

Keywords: UWB in Heritage Monitoring, Software-Defined Radio, Fisher Information Matrix, Signal Estimation Accuracy.

Manuscript ID: ICCAUA2025EN0153

Sustainability of Artistic Rural Revitalization: A Multiparty Collaborative Model Centered Around Social Organizations with Zhujia Village in Nanjing as an Example

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Abstract:
With the diversification of rural construction forms and increasing expectations on rural life improve-ment, artistic rural construction has gradually developed and is being practiced in China. To accurately guide the development and optimization of art rural construction, this study summarizes art intervention implementation methods in rural construction into four categories: NPO (Non-profit Organization) led, government led, enterprise led, and multiagency cooperation centered around social organizations. By taking Zhujia Village in Shijiu Lake, Nanjing as a typical case, this study delves into the process of a central social organization settling into the rural area, the role and participation of various entities in the rural construction process, and the effectiveness of rural construction implementation in material and cultural aspects. The “Zhujia Village” cooperation model is used to inspire theoretical research and empirical art intervention application paradigms in rural construction.

Keywords: Artistic Intervention; Rural Revitalization; Cooperative Model; Cultural Heritage; Sustainable Development.

Manuscript ID: ICCAUA2025EN0163

The Role of Digital Twin Technology in Sustainable Cultural Heritage Preservation: Case of Tyre-Lebanon

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Abstract:
The significance of digital twins is the precise virtual replicas that can be created of physical sites, the ability to capture detailed elements from the built environment. Digital Twins is a tool to collect real-time data and to continuously be able to monitor the spaces that are desired, which provides a revolutionary resource for long-term preservation. In the event of any natural disasters, such as earthquakes, floods, or fires, man-made threats\war as well like urbanization or conflict, digital twins serve as a precise pillar for saving these damaged elements or buildings acting as a tool for the rapid damage assessment and recovery. Having a Digital Twin allows for easy accessibility to detailed virtual archives that help preserve this grounding architectural heritage, enabling accurate restoration. Today, cultural heritage elements are faced with many threats, especially wars. This study examines the cultural heritage structures in Tyre, Lebanon, and evaluates possible alternatives for the use of digital twins for their sustainable preservation.
Keywords: Digital Twins; Cultural Heritage; Preservation; Lebanon; Tyre.

Manuscript ID: ICCAUA2025EN0175

Protecting Cultural Heritage in Cambodia: Developing Heritage Protection Criteria for Tangible Cultural Assets in Phnom Penh of the Post-Colonial Period

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Abstract:
Urbanization in Cambodia in 2023 is 24% and is expected to increase further. This urban growth has resulted in significant transformations as it is often rapid and uncontrolled, leading to changes in land use and landscape. This research examines the tension between urban growth and the protection of cultural heritage, specifically from the French colonial period (1863-1979) to more recent eras, which are often undervalued compared to older structures like Angkor Wat. Heritage conservation faces many challenges, with a notable issue is the absence of a legal framework due to the lack of a clear definition of heritage property and the absence of a publicly available list of protected sites. This research employs a comparative analysis, examining Cambodia's existing heritage protection criteria alongside those of selected countries in the Asia-Pacific region. This research aims to identify current challenges, regulations, planning strategies, and case studies, including the development of heritage criteria, and propose an implementation plan.
Keywords: Tangible Culture; Heritage Criteria; Rapid Urbanization; Urban Conservation; Balanced Development.

Manuscript ID: ICCAUA2025EN0180

Approaches to Representing School History Using School Artifacts

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Abstract:
In our study, we examined how teachers and students identify, preserve and use artifacts in schools interiors and everyday studying life. Our research methods include in-depth interviews, focus groups, survey and expert discussions. Students and teachers interact with artifacts related to educational routine, history, traditions, and values of the school, architectural and interior features of the building. Schools can represent their history by: considering the whole building itself as a historical artifact, preserving interior artifacts, developing new ones, creating school museums, pseudomuseums, exhibition spaces, spaces for self-expression, using artifacts in the educational process. Recommendations for representing different artifacts: preservation (historical parts of the building can be fused into a modern interior, emphasizing the value of the historical heritage); representation (historical elements can be used as art objects); demonstration (old stationery, diaries, notebooks, awards, personal belongings and the like in the public review); accumulation and integration; creation.
Keywords: Representation; Observation; Life Histories; Organizational Culture; Pedagogical Approaches.

Manuscript ID: ICCAUA2025EN0198

Architectural Sketching as a Tool for Understanding Heritage and Urban Context

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Abstract:
This study explores the role of freehand sketching in analyzing and understanding architectural heritage within its urban context. Based on workshops conducted in Istanbul in 2023 at İstanbul Kültür University, the research highlights how on-site drawing fosters a deeper appreciation of historic architecture among students. The workshops encouraged participants to observe and document characteristic details, strengthening their ability to analyze spatial relationships and contextual interactions. Through a combination of theoretical discussions and practical exercises, students developed a heightened sensitivity to heritage architecture and its integration within the urban fabric. The findings suggest that sketching not only enhances artistic and architectural awareness but also plays a crucial role in teaching future architects how to design within historical environments. This approach contributes to architectural education by promoting creativity and responsible urban development, ensuring that new designs respect and complement existing heritage structures.
Keywords: Architectural Sketching; Heritage Preservation; Urban Authenticity; Historical Analysis; Experiential Learning, Architectural Heritage; Freehand Sketching; Urban Context; Historic Architecture; On-Site Drawing; Spatial Analysis; Contextual Interactions; Architectural Education; Creativity in Design; Heritage Conservation; Urban Fabric; Responsible Urban Development.

Manuscript ID: ICCAUA2025EN0201

Patri_Patter; Digital Portal with Adaptative Paradigms for the Recognition of Architectural Heritage

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Abstract:
This summary deals with the proposal of an original method for architectural knowledge. The subject matter is architectural elements and their recognition as adaptable paradigms; interpretable and reusable. Our methodological scheme is heuristic and groups a morphogenetic protocol in synchronicity with a spatio-temporal process of narrative semiotics. It includes a morphological analysis of the genetic environment of the city under study (Blida), and the environment, the demonstration of adaptive use according to passive design and the evaluation of solar flux. The aim is to propose a design tool suitable for the sketching phase of sustainable projects. The result is the digital portal Patri_Patter, which corresponds to the ontological protocol (data, information, knowledge). Patri_Patter contains analytical, evaluative and interpretative sheets according to three levels of significant reading, namely referencing, adaptation and validation. They are available to actors who are committed to the added value of neighbourhoods and the improvement of social life.
Keywords: Architectural Heritage; Morphogenetic Protocol; Ontological Process; Adaptive Paradigms; Digital Portal.

Manuscript ID: ICCAUA2025EN0207

Preserving the Past for the Sustainable Future: Evaluating Adaptive Reuse from Sustainable Perspective in Indonesia

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Abstract:
The rapidly growing population in urban areas, the problems caused by abandoned buildings, and the increasing need for sustainable architectural practices require a more systematic approach to adaptive reuse. This study comprehensively assesses the current state of adaptive reuse practices in Indonesia from a sustainability perspective; how it is positioned in building practice in the country, what factors shape practices, and what key challenges it faces. To this end, a systematic literature review (SLR) was conducted to determine the impact of adaptive reuse strategies in Indonesia on economic, environmental, and social sustainability. The findings reveal the contributions of adaptive reuse projects in Indonesia to sustainable development, while also exploring the barriers these practices face and the best practices that should be adopted to realize successful projects in the future. Thus, the study aims to be a guide for sustainable building transformation in Indonesia at both academic and practical levels.
Keywords: Adaptive Reuse; Sustainability; Building Transformation; Systematic Literature Review; Urban Renewal.

Manuscript ID: ICCAUA2025EN0218

Architectural Design of the Vacant Space Adjacent to the Martha Peters House (Art University of Isfahan) in Isfahan, Iran

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Abstract:
Martha Peters House is one of the gorgeous houses in Jolfa neighbourhood of Isfahan. It was built during the kingdom of Shah Abbas Safavid and is now used as The Art University of Isfahan. There is a vacant space between two parts of this historic house, which can be reused as an academic space at the University. This article aims to introduce and summarise the considered rules in contemporary architectural design in the neighbourhood of historic buildings. After brief research about Isfahan and the Martha Peters House, the design process of the vacant space near it is mentioned. This historic research is based on qualitative and quantitative methods and the personal observations of the author. The results of this article can be useful for preservationists and conservationists in the field of cultural heritage, as well as architects and interior designers, in designing in the historic context of ancient cities worldwide.

Keywords: Martha Peters House; Historic House; Art University of Isfahan; Isfahan; Iran.

Manuscript ID: ICCAUA2025EN0223

Adopting GIS to Enhance Alexandrian Urban Cultural Heritage, the Case of Alexandria, Egypt

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Abstract:
Conservation of heritage is important in Egypt; and many research efforts aim to strengthen Egypt's cultural identity. In this regard, using Geographic Information Systems (GIS) in cultural mapping and heritage value assessment is useful to visualize, analyze, and manage heritage sites. Moreover, poorly connected public transit to heritage areas can cause congestion, inefficient routes, or overconcentration of visitors in sites. Addressing these issues is the focus of this research through a comprehensive analysis to optimize access to heritage zones while balancing conservation efforts. Investigating GIS tools aims to unite academic research with public realms where GIS-based visualizations of heritage values and transport network analysis lead to proposing walkable tours in the city of Alexandria ensuring sustainable urban mobility. This approach aims to achieve a balanced, equitable, and well-connected network that supports tourism while preserving cultural assets through presenting the shortest routes to walk to visit unique assets in heritage zones.

Keywords: Heritage conservation; Geographic Information Systems (GIS); Network Analysis; Tourism; Cultural Mapping.

Manuscript ID: ICCAUA2025EN0225

Architecture, Art, and Memory: Tracing Ceramic Panels in Denizli

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Abstract:
This study is the first detailed record of architectural ceramic panels in Denizli, Çamlık, offering important information about how architecture and ceramic design come together. Although architectural-artistic cooperation has been thoroughly investigated in major cities such as Istanbul, Ankara, and Izmir, research in regional contexts is scarce. This study examines the ceramic creations of Mehmet Tüzüm Kızılcan and Fatma Ilgın Şekerci, evaluating their contributions through archival material, site visits, and direct interviews. Furthermore, this study questions the broader impact and prevalence of architecture-art collaborations beyond major urban centers. The research highlights the societal changes in Denizli, especially the evolving urban landscape of Çamlık, where these artistic interventions are integrated. Beyond aesthetics, these panels reflect historical and social dynamics, marking shifts in architectural discourse. By bridging modernist architectural trends with traditional motifs, these works enrich the visual identity of public and residential spaces.

Keywords: Architectural Façade, Ceramic Panels, Art and Architecture Synthesis, Design and Spatial Integration, Denizli.

Manuscript ID: ICCAUA2025EN0229

A Grounded Theory Approach to the Transformation of Railway Sites in Türkiye

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Abstract:
This paper examines the obsolescence and transformation of historic railways in Türkiye, moving beyond conventional discussions of adaptive reuse. While existing research has primarily focused on the modes and strategies of repurposing disused railway buildings, this research investigates the broader processes of obsolescence, mapping the afterlives of railway heritage. It engages a grounded theory approach and systematically analyzes documents—maps, policies, published articles, and local news—as primary data to trace how railway sites transition beyond their original function. It identifies key processes including expansion, abandonment, invisibility, and contested redevelopment and explores how ownership structures, policy shifts, and socio-political forces shape these transformation trajectories. This study situates these transformations within different historical moments from the mid-19th century to the present, and it develops a theoretical framework for understanding railway obsolescence in evolving urban, rural, and infrastructural contexts in Türkiye. The findings offer insights for heritage policymakers, planners, conservationists, and scholars engaged in transportation history, planning, adaptive reuse, and infrastructure conservation.

Keywords: Railway Obsolescence; Infrastructure Transformation; Cultural Heritage; Adaptive Reuse; Grounded Theory.

Manuscript ID: ICCAUA2025EN0234

Revitalizing Spaces: Balancing Preservation and Modernization in Historic Buildings

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Abstract:
This study explores the revitalization of historic buildings while balancing the need for modernity and preservation. Using a case study approach, the research examines three significant historic sites: Owo Palace, Deji of Akure's Palace, and Jaekel House in Lagos. The analysis focuses on the preservation challenges posed by environmental conditions, material deterioration, and urban encroachment, alongside the need to integrate modern utilities and functions without compromising the cultural and historical integrity of structures. The findings highlight the effectiveness of stakeholder engagement, including collaboration between traditional authorities, local artisans, and conservation experts, in ensuring that modernization efforts were culturally sensitive and functionally sustainable. This study concludes that a holistic approach to preservation and modernization, guided by regulatory frameworks and community involvement, is essential for the transformation of historic buildings to meet contemporary needs while preserving their cultural and architectural heritage.

Keywords: Historic Buildings; Conservation Experts; Revitalization; Preservation; Palace.

Manuscript ID: ICCAUA2025EN0247

Integration of Cultural Heritage into Daily Life with Sustainable Conservation Approach: Iznik Example

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Abstract:
Iznik has a multilayered cultural heritage with traces of Roman, Byzantine, Seljuk, and Ottoman civilizations and is on the UNESCO World Heritage Tentative List. However, modern urbanization and tourism pressures threaten the city's historical fabric and make it challenging to protect cultural heritage sustainably. In cultural sustainability, this research aims to develop recommendations to make Iznik's historical and archaeological heritage more visible by linking it to the urban landscape and cultural identity. Using literature analysis, field analysis, and expert interviews will evaluate how cultural heritage can be integrated into social memory and urban identity beyond physical preservation. By bringing together the disciplines of urban archaeology and architecture, this study aims to preserve cultural heritage and integrate it into society as a living value. Thus, the preservation of Iznik's historical texture and the sustainable transfer of cultural heritage to the future in a social, artistic, and touristic context will be supported.

Keywords: Cultural Heritage; Sustainable Conservation; Urban Archaeology; Architecture; Urban Sustainability; Iznik.

Manuscript ID: ICCAUA2025EN0287

Rediscovering Bengaluru's Cultural Heritage: A Study of Basavanagudi and Gavipuram

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Abstract:
Bengaluru, widely recognized as India's IT capital and Silicon Valley, is undergoing rapid urbanization, attracting a dynamic and transient population. Once a city of deep-rooted heritage, Bengaluru's historic significance and cultural identity are often overlooked in the face of modernization and urban expansion. This study explores the cultural and historical importance of two of Bengaluru's oldest neighbourhoods: Basavanagudi and Gavipuram, examining their architectural, social, and cultural relevance. Qualitative research has been adopted as the study relies extensively on secondary sources for historical mapping, supplemented by primary data collection to assess the current state of these heritage-rich areas. The findings highlight the need for conservation and sustainable urban planning to ensure that Bengaluru's historical legacy remains preserved amidst ongoing urban development. By advocating for heritage conservation, this paper underscores the importance of maintaining the city's past as an integral part of its evolving identity.
Keywords: Historic Neighbourhoods; Urbanization; Culture; Urban Planning; Sustainable Development.

Manuscript ID: ICCAUA2025EN0291

A Discussion on the Urban Identity of Bursa through the Case of The Ahmet Vefik Pasha Theater

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Abstract:
The Ahmet Vefik Pasha Theater, established in the 1930s in Bursa, is one of the symbolic artifacts constructed in line with the modernization steps of the Turkish Republic and holds a significant place in the city's urban identity until today. On the 100th anniversary of the Republic, the building serves not only as a performance venue but also as a memory space that strengthens the connection between Bursa's urban identity grounded on centuries-old Ottoman tradition. From this perspective, the Ahmet Vefik Pasha Theater is discussed as a cultural bridge between the past and the present of the city. Accordingly, the Theater emerges as a living cultural asset besides its architectural and historical heritage significance. Thus, this study revealed that the Ahmet Vefik Pasha Theater is not merely an architectural structure but a living component of the urban identity of Bursa, contemporarily contributing to the city's cultural and authentic fabric.
Keywords: Ahmet Vefik Paşa Theater; Bursa; Urban Identity; Collective Memory; Republican Architecture.

Manuscript ID: ICCAUA2025EN0342

Rethinking of Culture for Self-Sustainable Regeneration

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Abstract:
This study aims to investigate the potential of culture-led urban mobility in the port hinterland of the historic city of İzmir to create a self-sustainable regenerative city. It draws attention to how the natural movement, movement economy and cultural significance value guide sustainable urban regeneration strategies. A range of analytical methodologies were employed, including space syntax, field survey, principal component analysis and Pearson correlation methods. The findings show that cultural heritage assets intersect with the natural movement envisaged by connectivity and integration. A positive relationship was found between the morphological indicators of space, intelligibility and synergy, and the cultural significance value. This is a significant finding for enhancing the movement economy through adaptive reuse of heritage. The study's comprehensive approach to understanding culture-led urban mobility through analyses of human perception and space syntax, with a focus on rethinking cultural heritage, is a significant contribution to the urban regeneration literature.
Keywords: Cultural Heritage; Urban Mobility; Urban Regeneration; Space Syntax; Movement Economy.

Manuscript ID: ICCAUA2025EN0344

Cultural Heritage and Urban Regeneration. the Campo Trincerato in Rome Between Networks and Recontextualization Strategies

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Abstract:
The development of contemporary cities is characterized by an increasing heterogeneity and dispersion of urban fabric, activities and services, and public spaces. Urban regeneration can play a key role in the revitalization of marginal or declining urban areas, enhancing Cultural Heritage as a structural component and promoting identity, social inclusion and local economy. This article is part of the authors' ongoing research on the topic of "heritage-led regeneration". A particular case in point is the Campo Trincerato in Rome, part of the military defense heritage of the 19th and 20th centuries: a system of fifteen forts and three batteries, of great historical and documentary value, part of a unified project of the Italian state to protect the new capital from the threat of foreign attack. The research aims to activate a process of recognizing the value of fortifications as nodes in a network of physical and intangible relationships, promoting shared paths of valorization and refunctionalization. Reasoning about the regeneration of this system means not only refunctionalizing the structures, but also recomposing the contextual, environmental, urban, social and cultural relationships to restore urban quality.
Keywords: Cultural Heritage; 20th-Century Military Architecture; Urban Regeneration; Marginal Areas; Public Spaces.

Manuscript ID: ICCAUA2025EN0353

An Evaluation on the Urban Identity and Spirit of Place in Shibam Historical City

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Abstract:
The identity of a city is manifested through various values that reflect its unique characteristics. This study examines the historical and architectural fabric of the Shibam historical city, exploring the components of urban identity. Shibam is an important historic city, known for the world's oldest multi-story mud-brick skyscrapers, dubbed the "Manhattan of the Desert" and included in the UNESCO World Heritage List in 1982. Therefore, with its distinctive architecture and historical texture, Shibam has a strong sense of place that carries the traces of the past to the present. The study aims to understand the cultural and architectural uniqueness of Shibam and to evaluate the historical, social, and environmental elements that compose the city's identity. Using the literature review method, evaluations were made on the preservation and sustainability of the urban fabric. The results emphasize the importance of preserving the original urban fabric of Shibam and enhancing the resilience of the city by integrating traditional construction techniques with modern solutions. It is revealed that Shibam is not only a physical urban fabric but also a carrier of cultural memory and identity. This study provides an important model for the sustainability of historic cities and their impact on urban identity.
Keywords: Urban Identity; Spirit of Place; Historic Urban Fabric; Shibam City.

Manuscript ID: ICCAUA2025EN0358

Bridging Tangible and Intangible: A Pedagogical Model for Mediterranean Cities in Architectural Education

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Abstract:
This study examines an innovative pedagogical approach implemented in the course Mediterranean Cities, taught between Fall 2022 and Fall 2023 at the Arab Academy for Science, Technology & Maritime Transport (AAST) in Cairo, Egypt. Engaging approximately 20 students per semester divided into 4–5 groups, each selecting a Mediterranean city, the course explores urban identity through a multidisciplinary lens, blending tangible realities (history, morphology, architecture, and urban elements) with intangible aspects (cuisine, fashion, literature, and cinema). Course tools included lectures, group-based analytical studies, and experiential outputs such as student-designed fashion mannequins and VR city tours. A qualitative analysis of student outcomes and project deliverables across three semesters reveals the impact of integrating tangible and intangible urban dimensions. The results include analyses of 13 Mediterranean cities, demonstrating enhanced student understanding of urban and sociocultural dynamics. This approach fosters critical thinking and provides a framework for incorporating sociocultural dimensions into architectural education.
Keywords: Mediterranean Cities; Urban Identity; Architectural Education; Experiential Learning; Tangible and Intangible City Aspects.

Manuscript ID: ICCAUA2025EN0370

Valorization of Cultural Heritage through the Scan-to-BIM Process – The Berber Oil Mill as a Materiality of a Total Social Fact

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Abstract:
In the context of increasing digitalization in the construction sector, the emergence of innovative IT paradigms contributing to the virtual valorization of historic buildings enables the optimization of traditional approaches to preserving cultural heritage. In line with pedagogical experiences that rethink past objects and architectural facts by considering their overall complexity, we present a didactic approach for the regeneration of a traditional Berber oil mill located in southern Tunisia, based on the Scan-to-BIM process. This process involves acquiring historical, graphic, and geometric data to model the building in 3D, using a reverse design method. It integrates data from anthropology, history, archaeology, computer science, energetics, and architectural rehabilitation. This model can be refined and incorporated into an HBIM approach, fostering collaboration in heritage valorization while preserving authenticity and the specific context of the region, positioning it as a catalyst for sustainable development.

Keywords: Heritage; Regeneration; Scan-to-BIM; Point Cloud; Modeling.

Manuscript ID: ICCAUA2025EN0382

The Evaluation of Adaptive Reuse of Ankara Saraçoğlu Neighbourhood

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Abstract:
Modern housing heritage is a significant reflection of the technological, social and economic developments of the 20th century. Therefore, its conservation involves an integrated approach, considering not only the tangible features but also the social and economic context. However, today's rapid dynamics of change sharply threaten these characteristics. Ankara Saraçoğlu neighbourhood, one of the Turkish Republic's first modern housing estates, was designed by Paul Bonatz in the 1940s to create a healthy, green and high-quality living environment for bureaucrats and civil servants adjacent to the governmental buildings. Its intervention process, shaped by years of debates and legal actions, has been recently completed through adaptive reuse. This study aims to assess the impacts of the neighbourhood's reuse practice from a holistic perspective. The research combines a literature review with on-site analysis to evaluate comprehensively. The findings highlight the multifaceted cultural significance of modern housing heritage.

Keywords: Adaptive Reuse; Modern Heritage; Modern Housing Heritage; Modern Housing Estate, Saraçoğlu Neighbourhood.

Manuscript ID: ICCAUA2025EN0392

Folk Music Heritage Conservation: Adaptive Reuse of Hason Residence

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Abstract:
Hason Raja, a pioneer of Bengali folk music, mysticism, and philosophy, is a key figure in Bangladesh's cultural heritage. This research aims to preserve his legacy through the conservation of architecture, specifically his ancestral home. As a zamindar, Hason dedicated his life to shaping a distinctive music heritage, deeply intertwined with Sufi traditions. For over a century, his ancestral residence has been serving as a school of thought for folk music heritage, bearing his memories and authentic shreds of evidence. The goal of this study is to conserve Raja's legacy of Bengali folk music through architectural conservation, proposing an adaptive reuse approach, reimagining the space as a commemorative site honoring his literature, philosophical, and musical contributions. This fosters a timeless memory landscape merging cultural heritage with sustainable development, fostering a dynamic space where contemporary practitioners can engage with his legacy while preserving the essence of his philosophy integrated through architecture.

Keywords: Hason Raja; Bengali Folk Music; Cultural Heritage; Adaptive Reuse Architecture; Mysticism; Music Heritage.

Manuscript ID: ICCAUA2025EN0398

Riyadh's Architectural Metamorphosis: Balancing Modernity and Tradition

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Abstract:
This study investigates the transformation of Riyadh's architecture, from traditional forms to a contemporary urban landscape. Using a qualitative approach, it explores the historical, cultural, and economic factors that have influenced Riyadh's architectural development. The key findings reveal a shift from the traditional Najd style to a blend of modern and traditional elements, driven by globalization and economic diversification. However, this rapid modernization has led to a conflict between contemporary and traditional forms, resulting in a loss of cultural identity. The study highlights the importance of integrating local cultural elements into architectural design to preserve heritage amidst urban development. As Riyadh evolves, the challenge is to balance modernization and the preservation of its rich architectural legacy, reflecting both its past and future aspirations. This research contributes to understanding the complex interplay between architecture, history, culture, and identity in the context of urban development, providing insights into the delicate equilibrium between preservation and progress in the face of rapid urbanization and cultural change.
Keywords: Najdi Architecture; Urban Planning; Urban Identity.

Manuscript ID: ICCAUA2025EN0355

Digitization of Cultural Heritage: Interpretation and User Interaction in Virtual Museums

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Abstract:
Since the 1990s, the integration of scanning, modeling, and mapping technologies into cultural heritage research has facilitated the widespread adoption of 2D and 3D visualization techniques. Virtual museology, which gained significant prominence during the COVID-19 pandemic, has fostered the development of innovative methodologies that enhance visitor engagement through the incorporation of 3D models and digital interaction tools. Consequently, cultural heritage artifacts and sites are now disseminated within web-based interactive environments, enabling broader accessibility.
However, the imperative for rigorous scientific standards, as underscored by the London Charter (2006) and the ICOMOS Seville Principles (2017), has become increasingly apparent. This study critically examines the role of paradata in 3D documentation within virtual museums. Through a systematic analysis of selected institutions, the study evaluates paradata-driven methodologies and investigates virtual museum applications from the perspective of data architecture. Furthermore, the study assesses the usability and effectiveness of user interfaces (UI), with particular emphasis on platforms such as UV, Mirador, and OpenSeadragon. A comparative analysis of two UNESCO World Heritage-listed archaeological heritage projects is conducted to elucidate existing challenges and ambiguities in the integration of paradata and metadata, thereby contributing to ongoing discourse on digital heritage standardization.
Keywords: Archeleogical Sites, Digital Cultural Heritage, Paradata Metadata, Data Analysis.

Manuscript ID: ICCAUA2025TR0040

The Role of Vanishing Industrial Heritage in Urban Memory: The Case of Şükraniye Small Industrial Estate

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Abstract:
This study examines the role and impact of demolished industrial spaces in the formation of urban memory, with a particular focus on the Şükraniye Small Industrial Bazaar, in Bursa. Established in the 1960s, the Bazaar housed various workshops and businesses, including blacksmiths, weavers, knifemakers, foundries, and turners, as well as numerous restaurants that catered to the local workforce. Over time, urban planning decisions led to the complete removal of the bazaar, culminating in the demolition of all its structures. The subsequent loss of these physical spaces resulted in the erasure of their spatial traces from the urban fabric. The demolition of the Bazaar is widely regarded as a loss of collective memory. However, urban memory persists through various forms of commemoration and personal testimonies, allowing for the recollection of the bazaar's historical significance. Methodologically, this study employs an analysis of urban planning decisions and cadastral data to trace the transformation of the area over time. Additionally, interviews with individuals who witnessed the site's earlier state, along with an examination of documentary sources, provide insights into the changes that have occurred. Through this approach, the study aims to identify the key elements that contributed to the bazaar's place in the city's collective memory and assess the relationship between urban memory and planning practices that acknowledge the socio-spatial past.

Keywords: Industrial Space; Industrial Heritage; Urban Memory; Urban Identity; The Case Of Şükraniye Small Industrial Estate.

Yok Olan Endüstri Mirası'nın Kentsel Bellekteki Rolü: Şükraniye Küçük Sanayi Sitesi Örneği

Özet:
Bu çalışmada, yok olmuş endüstriyel mekanların kentsel hafızanın inşasındaki yerini ve etkilerini irdelemek için; Bursa İli, Yıldırım İlçesi, Şükraniye Küçük Sanayi Çarsışı örneği üzerinden konunun tartışmaya açılması amaçlanmıştır.
1960'lı yıllarda kurulmuş olan Şükraniye Küçük Sanayi Çarşısı demirci, dokumacı, bıçakçı, dökümcü, tornacı gibi çeşitli imalathane ve lokantanın olduğu, kentin ekonomik birçok faaliyetinin gerçekleştiği bir alandır. Zaman içinde alınan plan kararları neticesinde sanayi çarşısı tamamen ortadan kaldırılmıştır. Dükkanların tahliyesi sonucu yerleşimde yer alan tüm yapıların yıkılması Küçük Sanayi Çarşısı'na dair kentteki mekânsal izlerin kaybına yol açmıştır. Şükraniye Küçük Sanayi Çarşısı'nın yıkımı bir hafıza kaybı olarak kabul edilirken kent hafızası ise çeşitli tanıklar aracılığıyla Sanayi Çarşısı hakkında yeni bir hatırlatma sürecini olanaklı kılmaktadır. Yöntem olarak çalışmada; alanın geçmişten günümüze uzanan süreç içindeki değişimini gösteren plan kararları, kadastral verilerden yararlanılmıştır. Ayrıca alanın eski haline tanıklık eden kişilerle mülakatlar yapılmış, değişim sürecini ortaya koyan dökümanlar değerlendirilmiştir. Bu sayede endüstri mirası olarak değerlendirilebilecek çarşının kentin hafızasındaki önemi vurgulanarak; çarşının kent belleği ve hafızasında yeniden canlanabilmesi için yapılacaklar üzerinen stratejiler ortaya konulacaktır.

Keywords: Endüstriyel Alan; Endüstriyel Miras; Kentsel Hafıza; Kentsel Kimlik; Şükraniye Küçük Sanayi Sitesi Örneği.

Manuscript ID: ICCAUA2025TR0004

Determination of Cultural Landscape Values: Case of Sındırgı

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Abstract:
Cultural landscape is defined as areas where the built environment and natural formations formed by human activities come together and are shaped in interaction with human culture and identity. These areas include various elements such as agricultural lands, urban and rural settlements, historical buildings, sacred places, intangible cultural heritage elements. Identification of cultural landscape values is of great importance in sustainable urban and rural planning studies together with aesthetic concerns. In addition, it contributes to the protection of place-specific historical and cultural heritage values and the formation of local identity. In this study, it is aimed to determine the cultural landscape values in Sındırgı, Balıkesir. Within the scope of the study, interviews were conducted with local administration, relevant public institutions and local people. The data, information and documents obtained were evaluated and on-site observations and analyses were made. As a result of the study, the cultural landscape values of Sındırgı will be defined, their importance will be emphasized and a perspective on the protection of these values will be presented.
Keywords: Cultural Landscape; Rural Landscape; Cultural Heritage; Sustainable Development; Sındırgı.

Kültürel Peyzaj Değerlerinin Belirlenmesi: Sındırgı Örneği

Özet:
Kültürel peyzaj, insan faaliyetleri ile oluşan yapılı çevrenin ve doğal oluşumların bir araya gelerek insan kültürü ve kimliği ile etkileşim içinde şekillendiği alanlar olarak tanımlanmaktadır. Bu alanlar, tarım arazileri, kentsel ve kırsal yerleşim alanları, tarihi yapılar, kutsal mekanlar, somut olmayan kültürel miras öğeleri gibi çeşitli unsurları kapsamaktadır. Kültürel peyzaj değerlerinin belirlenmesi, estetik bir kaygı ile birlikte sürdürülebilir kentsel ve kırsal planlama çalışmalarında büyük bir öneme sahiptir. Ayrıca yere özgü tarihsel ve kültürel miras değerlerinin korunmasına ve yerel kimliğin oluşmasına katkı sağlamaktadır. Bu çalışmada Balıkesir, Sındırgı örneğinde kültürel peyzaj değerlerinin belirlenmesi amaçlanmıştır. Çalışma kapsamında, yerel yönetim, ilgili kamu kuruluşları ve yerel halk ile görüşmeler gerçekleştirilmiştir. Elde edilen veri, bilgi ve belgeler değerlendirilerek yerinde gözlem ve irdelemeler yapılmıştır. Çalışma sonucunda Sındırgı'nın kültürel peyzaj değerlerinin tanımlanması, öneminin vurgulanması ve bu değerlerin korunmasına yönelik bakış açısı sunulacaktır.
Anahtar Kelimeler: Kültürel Peyzaj; Kırsal Peyzaj; Kültürel Miras; Sürdürülebilir Kalkınma; Sındırgı.

Manuscript ID: ICCAUA2025TR0008

Reading the Uzunyuva Archaeological Site with theUrban Archeology Method

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Abstract:
Cities have been in a constant state of change and transformation since their establishment, adapting to the needs of their time. Each phase of transformation has left traces on the city, which, in turn, have formed layers of urban archaeology and cultural heritage. Humanity's intrinsic curiosity about its origins and its interest in the past lead us to explore these remnants and traces. While the preservation of identities is evident in some cities, in others, especially in protected and archaeological sites, this preservation has not been fully realized. The aim of this study is to analyze the multi-layered structure of the Hekatomnos archaeological site, located in the Milas district of Muğla province, one of the oldest cities and settlements in the Caria region. By examining examples of participation in urban archaeological sites, the study seeks to analyze the integration of this site. Additionally, highlighting urban archaeological sites as integral parts of urban identity constitutes another objective of the research. The primary goal of the study is to analyze the productivity and potential of this site within the context of urban archaeology, based on the analysis of local and international examples in the productive Caria region. In this context, the effects of presenting the multi-identity structure of Hekatomnos and its archaeological site and surroundings as a potential cultural route to the public will be observed. Examples of participation in local and national archaeological sites will be examined, specific parameters will be developed, and the selected site will be evaluated based on these parameters. Although detailed studies on urban integration have been conducted in various urban areas across Turkey, the absence of such research specifically focusing on the Mausoleum of Hekatomnos highlights a gap in the literature that this study aims to address.
Keywords: Urban Archaeology; Urban Identity; Cultural Heritage.

Kent Arkeolojisi Methodu İle Uzunyuva Arkeolojik Alanının Okunması

Özet:
Kentler kuruldukları zamanlardan günümüze kadar ihtiyaçlara göre sürekli değişim ve dönüşüm içinde olmuşlardır. Her bir dönüşüm evresi kent üzerinde izler bırakmış ve bu izler birer katman halinde kent arkeolojisi ve kültürel mirası oluşturmuştur. İnsanoğlunun varoluşundan itibaren nereden geldiğini bilme ve geçmişe olan merak duyusu bizi geçmişe ve kalan izlere götürür. Bazı kentlerde kimliklerin korunduğunu görürken bazı kentlerde sit alanları ve arkeolojik alanlarda bu durumun gerçekleştirilemediğini görmekteyiz. Çalışmanın amacı Karia bölgesinin en eski şehir ve yerleşim yerlerinden biri olan Muğla ili Milas ilçesine bağlı Hekatomnos arkeolojik alanının çok katmanlı yapısını çözümlemek, kentsel arkeolojik alanlara katılım örneklerini inceleyerek alan üzerinde katılımını analiz etmektir . Bunun yanı sıra kentsel arkeolojik alanların birer kent kimliği olduğunu vurgulamak araştırmanın bir diğer amacını oluşturmaktadır. Araştırmanın temel amacı; kentsel arkeoloji açısından verimliliği yüksek olan Karia bölgesinde, yerel ve uluslararası örneklerin analizleri yapılarak, belirli ölçekler neticesinde bu alanın da kendi verimliliğini ve oluşturabilecek potansiyeli analiz etmektedir. Bu bağlamda Hekatomnos' un çok kimlikli oluşumunun arkeolojik alan ve çevresi merceğinden bakıldığında bölgenin potansiyel bir kültür yolu olarak halka sunulmasının etkileri gözlemlenecektir. Yerel ve ulusal arkeolojik alanların kente katılım örnekleri incelenerek belirli parametreler oluşturulacak ve seçili alan bu parametrelere göre değerlendirilecektir. Türkiye ölçeğinde farklı kentsel alanlarda detaylı kente katılım çalışamaları yapılmış fakat Hekatomnos Anıt Mezarı özelinde böyle bir çalışmanın bulunmaması araştırmanın literatürde ki boşluğu dolduracağını düşündürmektedir.
Anahtar Kelimeler: Kent Arkeolojisi; Kent Kimliği; Kültürel Miras.

Manuscript ID: ICCAUA2025TR0014

Social Memory from Production to Consumption; The Case of Samsun City Centre

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Abstract:
Cities have continued their existence with a dynamic process since their existence and have taken their present form. Some actors of this dynamic process have determined how cities will be shaped by creating ruptures in the historical process. The 18th century industrial revolution brought many new spaces to cities. These spaces can be classified as factory areas where various production processes take place, worker housing and transport structures that will serve factory areas. Factory areas are planned with functional location selection within the city and integrated with transportation. For this reason, they are located in city center locations. Over time, with the changing urbanization patterns and the expansion of the city and the change of urbanization dynamics with new urbanization paradigms, these factory areas have become dysfunctional over time by being squeezed as large land uses in the central locations of the cities. This study examines the transformation processes of industrial heritage areas located in Samsun city center and the effects of these areas on social memory.
Keywords: Industrial Heritage; Social Memory; Education of Gaze.

Üretimden Tüketime Toplumsal Hafıza; Samsun Kent Merkezi Örneği

Özet:
Kentler varoluşundan itibaren devingen bir süreç ile varlıklarını sürdürmüş ve günümüzdeki şeklini almıştır. Bu devingen sürecin bazı aktörleri, tarihsel süreç içerisinde kırılmalar yaratarak kentlerin nasıl şekilleneceğini belirlemiştir. 18. Yüzyılda gerçekleşen sanayi devrimi, kentlere birçok yeni mekanı beraberinde getirmiştir. Bu mekanlar çeşitli üretim süreçlerinin gerçekleştiği fabrika alanları, fabrika alanlarına hizmet edecek işçi konutları ve ulaşım yapıları olarak sınıflanabilir. Fabrika alanları kent içerisinde işlevsel yer seçimine sahip ve ulaşım ile entegre biçimde planlanmıştır. Bu sebeple kent merkezi lokasyonlarında yer seçmiştir. Zaman içerisinde değişen kentleşme biçimleri ile kentin yayılması ve yeni şehircilik paradigmaları ile şehirleşme dinamiklerinin değişmesi ile bu fabrika alanları kentlerin merkezi lokasyonlarında büyük arazi kullanımları olarak sıkışarak zamanla işlevsiz hale gelmiştir. Bu çalışma, Samsun kent merkezinde yer alan endüstriyel miras alanlarının dönüşüm süreçlerini ve bu alanların toplumsal hafıza üzerindeki etkilerini incelemektedir.
Anahtar Kelimeler: Endüstriyel Miras; Toplumsal Hafıza; Bakışın Eğitimi.

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Evaluation of the Cultural Heritage Values and Conservation Issues of the Historic Settlement of Visby

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Abstract:
Visby is a significant medieval settlement located on Gotland Island of Sweden and is listed as a UNESCO World Heritage Site. Due to its strategic position in the Baltic Sea, Visby developed a significant trade center throughout history. Enclosed by defensive walls with guard towers, the settlement includes lots of public buildings and civil structures within its cultural landscape. This study aims to assess the cultural heritage elements of Visby and evaluate the impacts of the settlement's current usage patterns on its heritage values. The research employs field studies, mapping, and historical research methods to examine the spatial structure of the settlement. The findings reveal that Visby has largely preserved its authentic medieval urban identity. Despite being a popular tourist destination during summers, there is always a living environment throughout the year thanks to the presence of a university unit. However, the dominance of tourism over the traditional economic structure has led to the displacement of the local population.

Keywords: Medieval Town; World Heritage Site; Cultural Heritage; Conservation; Visby.

Visby Tarihi Yerleşiminin Kültürel Miras Değerlerinin ve Koruma Sorunlarının Değerlendirilmesi

Özet:
Visby, İsveç'in Gotland Adası'nda yer alan önemli bir Orta Çağ yerleşimi olup UNESCO Dünya Mirası Listesi'nde bulunmaktadır. Baltık Denizi'ndeki stratejik konumu sayesinde tarih boyunca önemli bir ticaret merkezi olarak gelişmiştir. Savunma kuleleriyle donatılmış surlarla çevrili olan yerleşim, kültürel peyzajı içerisinde birçok kamusal yapı ve sivil yapı barındırmaktadır. Bu çalışma, Visby'nin kültürel miras ögelerini değerlendirmeyi ve yerleşimin mevcut kullanım biçimlerinin miras değerleri üzerindeki etkilerini ortaya koymayı amaçlamaktadır. Araştırmada, yerleşimin mekânsal yapısını incelemek için alan çalışması, haritalama ve tarihsel araştırma yöntemleri kullanılmıştır.Çalışma sonucunda, Visby'nin özgün Orta Çağ kent kimliğini büyük ölçüde koruduğu, yaz aylarında turistik bir destinasyon olmasına rağmen, bulundurduğu üniversite birimi sayesinde yıl boyunca aktif bir yaşam alanı sunduğu tespit edilmiştir. Bununla birlikte, yapılı çevre özgün niteliklerini korusa da turizmin geleneksel ekonomik yapının önüne geçmesinin yerel halkın kentten uzaklaşmasına neden olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Orta Çağ Kenti; Dünya Miras Alanı; Kültürel Miras; Koruma; Visby**.**

Manuscript ID: ICCAUA2025TR0023

The Role of Geographic Information System (GIS) in the Conservation of Cultural Heritage

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Abstract:
Cultural heritage is a fundamental component of the identity and collective memory of societies. However, population growth, unplanned development, climate change, natural disasters, and inadequate conservation efforts pose serious threats to its preservation. Sustainable conservation requires multi-component and interdisciplinary approaches. Geographic Information System (GIS) has emerged as effective tool for mapping, analyzing, conserving, and monitoring cultural heritage. This study aims to examine the role of GIS in the conservation-focused evaluation of cultural heritage elements at different scales, such as cultural landscapes and historical buildings. Case studies from various regions of Türkiye are analyzed to evaluate GIS contributions in tracking temporal changes through historical aerial photos, old and current maps, and land data; conducting integrity and authenticity analyses; and informing conservation strategies. The findings indicate that GIS supports interdisciplinary, holistic, and multi-dimensional approaches to cultural heritage conservation. This study intends to offer a methodological framework for future conservation-oriented research.
Keywords: Cultural Heritage; Geographic Information System (GIS); Sustainable Conservation; Cultural Landscape; Historical Structures.

Kültürel Mirasın Korunmasında Coğrafi Bilgi Sistemlerinin (CBS) Rolü

Özet:
Kültürel miras, toplumların kimliği ve kolektif hafızasının temel bir bileşenidir. Ancak artan nüfus, plansız yapılaşma, iklim değişikliği, doğal afetler ve koruma çalışmalarının yetersizliği, bu mirasın korunmasını tehdit etmektedir. Kültürel mirasın sürdürülebilir biçimde korunabilmesi, çok bileşenli ve disiplinler arası yaklaşımların benimsenmesini gerektirmektedir. Bu bağlamda, Coğrafi Bilgi Sistemleri (CBS), kültürel mirasın haritalandırılması, analizi, korunması ve izlenmesinde etkili bir araç olarak öne çıkmaktadır. Bu çalışmanın amacı, CBS'nin kültürel peyzajlar ve tarihi yapılar gibi farklı ölçeklerdeki kültürel miras unsurlarının koruma amaçlı değerlendirilmesindeki rolünü ortaya koymaktır. Çalışma kapsamında, Türkiye'nin farklı bölgelerinden seçilen vakalar üzerinden, CBS'nin tarihi hava fotoğrafları, tarihi ve güncel haritalar ile arazi verileri kullanılarak zamansal değişimlerin izlenmesi, özgünlük ve bütünsellik analizlerinin yapılması ve koruma stratejilerinin oluşturulmasına sağladığı katkılar değerlendirilmiştir. Elde edilen bulgular, CBS'nin kültürel mirasın korunmasında disiplinler arası, bütüncül ve çok boyutlu yaklaşımlara olanak tanıyan etkili bir araç olduğunu göstermektedir. Bu çalışma, benzer koruma odaklı araştırmalar için yöntemsel bir çerçeve sunmayı hedeflemektedir.
Anahtar Kelimeler: Kültürel Miras; Coğrafi Bilgi Sistemleri (CBS); Sürdürülebilir Koruma; Kültürel Peyzaj; Tarihi Yapılar.

Manuscript ID: ICCAUA2025TR0029

The Colour of Space: Mapping the Urban Conservation Zones of Samsun

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Abstract:
Colour in architecture is not only an aesthetic element but also a determinant of social memory and urban identity. In this context, the main subject of the study is to examine the connection of the colour-form-material relationship with the space of the registered buildings located in Samsun urban conservation zones numbered I, II and III. Methodologically, a data set was prepared by using geographical information systems within the scope of the registered buildings documented by fieldwork. Thus, the relationship between prominent colour uses and urban space was revealed through visual analysis and mapping techniques. it is aimed to establish a spatial connection. In this respect, the study, which reveals the colour issue with quantitative data, makes an important contribution to the literature. In addition, it is aimed that the study can form a basis for future restoration processes and contribute to the development of conservation policies. As a result of the study, the relationship between building and space is revealed and the effect of the use of colour on the urban space of the buildings under protection is revealed.

Keywords: Urban Conservation Zones; Urban Heritage; Colour Analysis, Colour Inventory; Registered Building.

Mekanın Rengi: Samsun Kentsel Sit Alanını Haritalamak

Özet:
Mimari de renk sadece estetik bir öğe değil aynı zamanda toplumsal hafıza ve kentsel kimliğin ortaya konulduğu bir belirleyicidir. Bu bağlamda çalışmanın ana konusu Samsun I, II ve III no'lu kentsel sit alanlarında yer alan tescilli yapıların renk-biçim-malzeme ilişkisinin mekanla kurduğu bağlantının incelenmesidir. Metodolojik olarak, alan çalışmasıyla belgelenen tescilli yapılar çalışma kapsamında coğrafi bilgi sistemleri kullanılarak bir veri seti hazırlanmıştır. Böylece öne çıkan renk kullanımları ve kentsel mekan arasındaki ilişki görsel analiz ve haritalama teknikleriyle ortaya konulmuştur. mekansal olarak bir bağlantının kurulması amaçlanmıştır. Bu yönüyle renk konusunun nicel verilerle açığa çıkaran çalışma literature önemli bir katkıda bulunmaktadır. Ayrıca çalışmanın gelecek restorasyon süreçlerine altlık oluşturabilmesi ve koruma politikalarının gelişmesinde katkı sağlaması hedeflenmektedir. Çalışma sonucunda, yapı ve mekan arasındaki ilişki ortaya konularak koruma altındaki yapıların renk kullanımlarının kentsel mekana etkisi açığa çıkarılmıştır.

Anahtar Kelimeler: Kentsel Sit Alanları; Kentsel Miras; Renk Analizi, Renk Envanteri; Tescilli Yapı.

Manuscript ID: ICCAUA2025TR0031

Route as a Tool for Holistic Understanding of Industrial Heritage Areas: Kelham Island and the Furnace Trail

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Abstract:
Kelham Island is a historic industrial area in Sheffield, England, representing the innovative initiatives of its time that transformed the city into a globally significant hub for iron and steel production. While industry shaped the city's identity, from its architecture to daily life, Kelham Island hosted technological discoveries that played a key role in industrial history, such as the mass production of steel and the invention of stainless steel. However, from the mid-20th century, as the steel industry entered a period of decline, the area was gradually abandoned. Conservation efforts initiated by the Sheffield Council in the 1980s designated Kelham Island as an "industrial conservation area." More recently, preservation work has revitalized the area, turning it into a key attraction. This study will explore industrial heritage routes that highlight the values of such areas and foster their holistic understanding, focusing on Kelham Island and the defined Furnace Trail within it.
Keywords: Industrial Heritage; Route; Kelham Island; Furnace Trail; Conservation.

Manuscript ID: ICCAUA2025TR0032

The Importance of Roman Temples in Urban Morphology: A Case Study of The Temple of Augustus in Nicomedia

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Abstract:
Anatolia has been a melting pot of various civilizations throughout history. Each civilization established in this area was shaped by the cultural identities of those before it. Sacred sites and temples emerged as central points for every new civilization. In 27 BCE, following Augustus's rise, Roman rule was firmly established across the Anatolian Peninsula. Previously, Roman religion was rooted in pagan customs, but with Augustus, the imperial cult was introduced, granting emperors a divine status. During the Tetrarchy period that began under Diocletian in 284 CE, Nicomedia became the eastern capital of Rome in 286 CE and received the Neokoros title three times. However, the details gathered from historical records and city coins have been obscured within the layered urban landscape of modern İzmit. This study seeks to uncover the city's identity by analyzing settlement patterns, sacred spaces, and the Augustus Temple as a pivotal morphological feature.
Keywords: Cultural Heritage; City; Sacred Space; Morphology.

Roma Dönemi Tapınaklarının Kent Morfolojisindeki Önemi: Nikomedia Augustus Tapınağı Üzerinden Bir Örnekleme

Özet:
Anadolu, tarih boyunca çeşitli medeniyetlerin uğrak noktası olmuştur. Bu alanda kurulan her medeniyet, kendisinden önceki medeniyetlerin kültürel kimlikleri tarafından şekillenmiştir. Kutsal mekanlar ve tapınaklar her yeni uygarlık için çekim noktası olmuştur. MÖ 27'de Augustus'un tahta çıkmasıyla Anadolu Yarımadası'nda Roma egemenliği kesin olarak oluşmuştur. Önceleri, Roma dini pagan geleneklere dayanırken Augustus ile birlikte imparatorluk kültü ortaya çıkmıştır ve imparatorlara tanrısal bir statü verilmiştir. MS 284'te Diocletianus döneminde başlayan Tetrarşi döneminde, Nikomedia MS 286'da Roma'nın doğu başkenti olmuş ve üç kez Neokoros unvanını almıştır. Ancak, tarihi kayıtlar ve kent sikkeleri aracılığıyla elde edinilen bu bilgiler, modern İzmit palimpsest kent dokusunda silikleşmiştir. Bu çalışma kapsamında kentinin yerleşim dokusu, kutsal mekan ve kent morfolojisi açısından önemli odak noktalarından biri olan Augustus Tapınağı örneklemesi ile kentin kimlik değerinin görünür kılınması hedeflenmektedir.
Anahtar Kelimeler: Kültürel Miras; Kent; Kutsal Mekan; Morfoloji.

Manuscript ID: ICCAUA2025TR0035

The Rediscovery of the Abandoned Countryside: The Gentrification Process in Küçükbahçe Village

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Abstract:
Küçükbahçe, the subject of this study, is a rural settlement that has undergone an abandonment process that began approximately 40 years ago. In recent years, particularly after the Covid-19 pandemic, demand for old Greek and traditional Turkish houses has increased, leading to significant transformations in the rural landscape and architecture. This study analyzes the impacts of this transformation while addressing the reasons for abandonment and the current stage of gentrification. Additionally, it examines measures to mitigate potential negative effects. Alongside a literature review and historical research, structured interviews and surveys were conducted with local residents, authorities, and new settlers. The study was further supported by maps and diagrams created from collected data. Field interviews and visual analyses revealed not only changes in the rural landscape but also social and economic deterioration. Findings indicate that this shift has accelerated property transfers, and without proper planning, rural landscape degradation and economic changes will persist due to non-traditional architectural transformations.
Keywords: Gentrification; Abandoned Village; Rural Landscape; Displacement; Rural Revitalization.

Terk Edilmiş Kırsalın Yeniden Keşfi: Küçükbahçe Köyü'nde Soylulaştırma Süreci

Özet:
Bu çalışmanın konusu olan Küçükbahçe, yaklaşık 40 yıl önce başlayan terk edilme sürecinden geçmiş bir kırsal yerleşimdir. Son yıllarda, özellikle Covid-19 salgını sonrasında, eski Rum ve geleneksel Türk evlerine olan talep artmış ve bu durum kırsal peyzaj ve mimaride önemli dönüşümlere yol açmıştır. Bu çalışma, köyün terk edilmesinin nedenlerini ve mevcut soylulaştırmanın hangi aşamada olduğunu ele alırken bu dönüşümün etkilerini analiz etmekte ve yanı sıra olası olumsuz etkileri azaltmak için alınacak önlemleri incelemektedir. Literatür taraması ve tarihsel araştırmanın yanı sıra, yerel sakinler, yetkililer ve yeni yerleşimcilerle yapılandırılmış görüşmeler ve anketler yapıldı. Çalışma, toplanan verilerden oluşturulan haritalar ve paftalarla daha da desteklendi. Saha görüşmeleri ve görsel analizler yalnızca kırsal peyzajdaki değişiklikleri değil, aynı zamanda sosyal ve ekonomik yapıdaki dönüşümü de ortaya koymaktadır. Bulgular, önlem alınmadığı takdirde mülk sahipliğinin el değiştirmesinin hızlandığını, geleneksel olmayan mimari dönüşümler nedeniyle kırsal peyzajın bozuluğunu, sosyal ve ekonomik yapının dönüşümünün devam ederek kırsal dokunun farklılaştığını gösteriyor.
Anahtar Kelimeler: Soylulaştırma; Terk Edilmiş Köy ; Kırsal Peyzaj ; Yerinden Edilme; Kırsal Canlandırma.

Manuscript ID: ICCAUA2025TR0037

Assessing Urban Identity: An Applied Approach to the Case of Ataşehir

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Abstract:
This study explores urban identity through both theoretical and practical dimensions to preserve and enhance the unique characteristics of cities. Rapid urbanization, unplanned development, and homogenization threaten urban identity and undermine the sense of belonging. The research examines the elements that influence urban identity and assesses existing literature on identity loss and its implications for urban planning. By integrating theoretical discourse with an applied case study in Ataşehir, this study aims to provide a practical tool for urban planning processes. The research methodology builds on Mansour, Alves and Costa's comprehensive approach to assessing urban identity, tested in a real-world urban context. Findings will provide concrete insights into the strengths and weaknesses of the methodology while guiding planners in preserving urban identity. The study enhances the literature by bridging theoretical and practical perspectives, emphasizing urban identity as a dynamic and evolving concept.

Keywords: Urban Identity; Identity Loss; Ataşehir; Urbanization Process; Homogenization of Cities.

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Modernity Meets Identity: Urban and Social Transformation in Gulf Cities

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Abstract:
This study examines the transformative role of urban structures in Gulf cities as agents of social change, aiming to understand how globalization and oil-driven urbanization have shaped their socio-cultural dynamics and built environments. Using Appadurai's theoretical framework of "scapes," the research explores key aspects such as architectural evolution, governance, and the integration of tradition and modernity. Methodologically, it employs a comparative analysis of Gulf cities, utilizing urban planning documents, historical analysis, and socio-spatial theories to investigate the reciprocal relationship between physical urban forms and social processes. The results highlight challenges such as socio-economic disparities, cultural negotiation, and environmental sustainability, while showcasing the diverse urban trajectories of Gulf cities shaped by global and local influences. The study concludes that Gulf cities exemplify the complexities of modern urbanization, contributing to the field by providing insights into the dynamic interplay of global forces and local identities in urban development.
Keywords: Gulf Cities; Urban Transformation; Social Change; Globalization; Socio-Cultural Dynamics.

Manuscript ID: ICCAUA2025EN0046

Carbon Profiles of Mongolian Dwellings: Ger vs. Baishin

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Abstract:
This study estimates and compares CO_2 emissions from two traditional Mongolian housing types: the portable Ger and the self-built detached Baishin. The Ger, commonly used by nomadic populations, relies on wood and coal-fired stoves for heating, resulting in significant operational emissions despite its low embodied carbon footprint. In contrast, the Baishin, a permanent structure built with materials like timber, bricks, or concrete, exhibits higher embodied emissions but can achieve lower operational emissions with proper insulation. Using life cycle analysis, including material extraction, construction, operational energy, and disposal, the study quantifies the greenhouse gas impacts of these dwellings under typical conditions. Findings emphasize the need for energy-efficient retrofitting and sustainable building practices to reduce emissions. This research offers insights into low-carbon housing strategies, addressing the challenges of traditional and modern dwellings in cold climates and contributing to climate change mitigation efforts.
Keywords: Ger; Yurt; Life Cycle Analysis; Vernacular Architecture; Affordable Housing.

Manuscript ID: ICCAUA2025EN0101

Casablanca Between Land Speculation and Heritage Preservation: Issues of an Urbanization Under Tension

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Abstract:
Land speculation in Casablanca started just before the French protectorate, driven by the city's economic appeal. Tax exemptions, administrative benefits, and proximity to the port lured European families seeking wealth. As Casablanca developed, it exhibited remarkable architectural dynamism, combining Art Deco and Neo-Moresque styles, the latter of which included traditional Moroccan craftsmanship. The city's economic appeal attracts new residents, prompting rampant land speculation. Many historic buildings, often neglected, are targets for speculators looking to demolish them for modern, profitable developments. This article will explore the evolution of land speculation in Casablanca, beginning from the Protectorate period and extending to its modern-day forms. It will analyze the effects of this speculation on urban development and the preservation of architectural heritage. Additionally, the paper will consider the institutional responses aimed at balancing urbanization with historical preservation, such as the proposed designation of the colonial downtown area as a UNESCO World Heritage site.
Keywords: Casablanca; Heritage; Speculation; Historical Legacy; Development Issues.

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The Concept of the Garden City on a Micro Scale: A Case Study of the Urban Planing of Johow Gelände in Poznań and Its Challenging Heritage

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Abstract:
Johow Gelände, established in 1903 in Poznań (then a peripheral city of the German Empire), represents a pioneering example of Ebenezer Howard's Garden city concept on a micro scale. Despite its innovative urban planning, the district's identity has been overshadowed by the systematic erasure of its German origins, particularly following Poznań's reintegration into independent Poland after World War I. This study applies Piotr Piotrowski's horizontal art history framework to analyze the interplay between historical centers and peripheries, emphasizing the socio-political mechanisms that marginalized Johow Gelände's heritage. Using archival research and urban analysis, the research uncovers Howard's influence on the district's design and explores strategies for preserving contested heritage in Polish contexts. The findings contribute to broader discussions on modernist urban planning, memory politics, and the challenges of integrating complex historical narratives into contemporary heritage management.

Keywords: Memory Studies; Urban Memory; Urban Planning; Architectural and Urban Heritage.

Manuscript ID: ICCAUA2025EN0110

Community-Centric Architectural Design for Stray Animal Shelters in Bahrain: Redesigning Spaces for Human-Animal Interaction and Cultural Engagement

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Abstract:
This research explores the potential of community-centric architectural design to transform stray animal shelters in Bahrain by addressing the critical gap in humane architecture that integrates cultural identity and community engagement. Through qualitative methods, including semi-structured interviews and focus groups with shelter staff, architects, and community members, the study uncovers key challenges, such as insufficient funding, overcrowding, and limited community involvement. The findings highlight that culturally sensitive design and interactive community spaces can reshape public perceptions, foster empathy, and improve animal welfare. The research introduces a framework that blends humane design principles with local cultural values by reimagining shelters as vibrant community hubs rather than mere holding facilities. To advance these insights, quantified findings should inform the development and implementation of pilot projects featuring community-centric solutions. The study advocates for a paradigm shift in shelter design, aiming to improve living conditions for stray animals while fostering stronger societal bonds in Bahrain.

Keywords: Community-Centric Design; Humane Architecture; Stray Animal Shelters; Cultural Identity; Animal Welfare.

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Utilizing A Multi-Criteria Spatial Analysis For Sustainable Urban Agriculture Planning

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Abstract:
This study employs a Multi-Criteria Spatial Analysis approach to identify suitable areas for urban agriculture in Lusaka District, Zambia, as a sustainable solution to food insecurity and rapid urbanization. Using the Analytical Hierarchy Process (AHP), suitability was assessed based on land use, soil type, slope, distance to water, and proximity to residential areas. GIS mapping revealed that 78.3% of the area is suitable for large-scale urban agriculture, such as community farms, while 21.7% is ideal for small-scale initiatives that include home gardening and vertical farming. The study highlights the potential of advanced techniques, such as aeroponics and hydroponics, to enhance water efficiency and yield optimization. By integrating spatial analysis with community engagement and sustainable practices, urban agriculture can be strategically incorporated into city planning to promote food security, environmental sustainability, and urban resilience. This research provides a framework for policymakers and urban planners to optimize land use and resource allocation for sustainable urban development.

Keywords: Sustainable Urban Agriculture; Multi-Criteria Spatial analysis; Food Security; Analytical Hierarchy Process (AHP); Geographic Information System (GIS).

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A Proposed Urban Development Strategy for the New Urban Communities in Egypt

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Abstract:
Although Egypt developed 22 new urban communities (NUCs) to absorb the annual increase and redistribute population in Egypt far away from the Greater Cairo Region and the Niel Valley, many still need to reach initial occupation targets, cost too much, and generate partial revenue. Previous studies have revealed that NUCs' development strategy needs policy modifications, decentralization, participation of private investors, better organization, growth management, spatial relationships, and integration of national, economic, environmental, and social planning in urban development strategy. Moreover, the current NUCs' urban development strategy needs clearer priorities, reliable and achievable goals, stakeholders' participation, and cohesive urban planning. Thus, the study proposed an integrated regenerative urban development strategy for NUCs. The strategy has five phases: revising the NUCs' mission, assessing their current situation, developing a SWOT analysis for their internal and external environment, determining their development area, and deriving an integrated regenerative strategy. However, the study concluded that the outcome of the integrated development strategic plan depends on setting realistic targets, determining development priorities, and involving the private sector and society. The underlying premise of this strategy is that the development of existing and potential NUCs is commenced according to an integrated strategic plan in a cohesive approach by getting feedback and learning lessons from all components and phases. Moreover, it assumes that development is a multiple-stage process that saves resources and assures flexibility by adding changes and modifications to the process to reduce the annual budgets spent on the cities.
Keywords: New Urban Communities; Egypt; Population Redistribution; Integrated Regenerative Strategy.

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Effect of Vernacular Architecture on Human Well-being: Case Study of Bellapais

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Abstract:
Vernacular architecture is a cultural asset that reflects the identity, life culture and history of a society. In this context, sustainable protection of vernacular architecture within the scope of cultural heritage is important. The concept of well-being, which exists within the scope of the United Nations sustainable development goals, expresses the state of being physically, mentally and emotionally healthy for individuals. At this point, architecture offers spaces that satisfy individuals and allow them to be happy. Therefore, architecture is associated with well-being. It is directly related to vernacular architecture, which is a synthesis of adaptation to climate, use of natural and local materials and cultural reflections. Bellapais village was selected for this study, which provides peace and aesthetic satisfaction to its residents and visitors with its stone houses, narrow streets and design compatible with the natural environment, local identity and cultural belonging. Another important feature of the study area is the existence of the Bellapais Monastery, which is an important cultural heritage of Cyprus. Depending on the purpose of the study, the relationship between vernacular architecture/cultural heritage and well-being is evaluated in line with the perceptions of users and visitors.
Keywords: Vernacular; Cultural Heritage; Well-Being; Sustainability; Bellapais.

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How Do We Experience Eco-Anxiety? A Phenomenological Study of Urban Residents' Experiences, Attitudes and Behaviours Concerning Environmental Issues

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Abstract:
Ecology, environmental protection and problems are at the forefront of the public agenda, which causes anxiety among eco-activists and citizens as the general uncertainty and scale of the situation conflicts with the real possibilities to improve it. We aim to explore the general perceptions, beliefs, and current and biographical experiences of people who face environmental anxiety. We used a qualitative design and interviewed 10 city residents concerned about the environment and ecology. Semi-structured interviews were analysed using descriptive phenomenological analysis (A. Giorgi). We found that environmental beliefs connected with family values, biographical experience and prior mental health problems. We identified two main types of behaviour associated with eco-anxiety: compulsive coping with anxiety and decision-based behaviour, based on rethinking beliefs and finding new attitudes towards the present situation. Eco-anxiety affects people's behaviour and decisions and thus should be addressed in urban studies.

Keywords: Eco-anxiety; Environmental Anxiety; Mental Health; Psychological Wellbeing; Climate Anxiety; Climate Change Anxiety; Environmental Health.

Manuscript ID: ICCAUA2025EN0181

The Evolution of Courtyard Architecture in Persian, Ottoman, and Andalusian Buildings

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Abstract:
This paper aims to analyze the evolution of courtyard architecture in Persian, Ottoman, and Andalusian traditions. It also examines the ways in which functional and symbolic spaces of a courtyard apply to perform different cultural roles. For instance, in Persian architecture, a garden with a central water fountain such as the one in the Chahar-Bagh design embodies the connection of the environment with nature and is a representation of paradise. On the other hand, the incorporation of courtyards in Ottoman architecture arose from the need for privacy, social hierarchy, and climate adaptation, as demonstrated in the design of Topkapı Palace. Finally, Andalusian courtyards, including those at the Alhambra, combine water and garden features using Islamic and Roman traditions to design peaceful and efficient spaces. In conclusion, the paper is a comparative analysis of common design elements, taking into account factors like culture, society, and climatic aspects of each tradition.

Keywords: Courtyard Architecture; Persian Architecture; Ottoman Architecture; Andalusian Architecture; Islamic Gardens.

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Formalization of the Informal: Towards High-Density Slum Upgrade Projects and Community Spaces in Thailand

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Abstract:
With more than half of the world's population living in cities and projected by the United Nations that nearly 70% will be urbanized by 2050, challenges of housing and public spaces become more significant. With 1.6 billion people living in informal settlements or slums, particularly in the Global South, there have been many efforts to provide social housing or means to formalize the informal in recent years. Thailand's Baan Mankong or secure housing program has successfully lifted people out of slums into sustainable communities. However, as large land parcels are becoming few and far between in the country's capital of Bangkok, this research asks what are the implications for medium- to high-rise slum upgrade projects? Through design studios this study aims to explore the opportunity for high density housing projects and how they can provide public spaces, on and above ground, for communities to exercise their Right to the City.

Keywords: Informal Settlements; Slum Upgrade; Sustainable Urbanization; High-Density; Public Spaces.

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Preferences for Student Rental Housing in Dehradun, India: Using TOPSIS Technique

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Abstract:
This study aims to identify and prioritize key attributes for enhancing service quality in Purpose-Built Student Accommodation (PBSA), focusing on student rental housing. Given the increasing demand for high-quality student housing, assessing infrastructure, facilities, and service quality from students' perspectives is essential. The research was conducted in Dehradun, India—a major educational hub—examining 17 housing attributes across 10 neighborhoods. A five-point Likert scale survey was administered to 425 students, selected through simple random sampling. The data were analyzed using the Technique for Order of Preference by Similarity to the Ideal Solution (TOPSIS). The results highlight safety and the availability of commercial facilities (e.g., photocopy, stationery, and convenience shops) as key neighborhood-level attributes. At the housing level, 24-hour water supply and hot water availability were the top priorities. The findings provide valuable insights for developers and higher education institutions, ensuring student housing aligns with student expectations and quality standards.

Keywords: Studentification; Rental Housing; Affordability; Quality of life.

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Comparative Study on the Effect of Different Cultural Backgrounds on Residential Living Spaces in Benghazi, Libya

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Abstract:
Cultural values are essential ingredients in architectural and spatial organization. In the Libyan context, while architecture is largely unified by a common style, customs of various ethnic groups can affect the functions and forms of living spaces. This paper aims to examine the impact of these cultural backgrounds on Benghazi's contemporary residential architecture. The qualitative research is based on data collected through literature reviews, the analysis of architectural drawings of homes belonging to three distinct Libyan ethnic groups, and participant interviews and surveys. The findings show that while Libyan residential villas have commonalities, there are unique priorities and significant differences in layout depending on the resident's cultural background. The results of this study can be used to promote the preservation of the cultural values of Libyan ethnic groups, document their effects on contemporary architecture, and provide much needed literature regarding residential architecture in Libya.

Keywords: Spatial organization; Cultural Values; Libyan Architecture; Housing Studies.

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Comparison of Characteristics of the Vernacular Architecture of Northern Mexico, Cases: Nuevo Leon and Chihuahua

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Abstract:
This study compares vernacular architecture in northern Mexico, focusing on the states of Nuevo Leon and Chihuahua. The research seeks to identify similarities and differences in both region's construction solutions, materials used, and climate adaptation strategies. The methodology applies the analysis of four representative case studies selected for their architectural value and relevance in preserving traditional techniques. The work prioritizes the qualitative approach, combining fieldwork, historical documentation, and morphological analysis of the buildings. The evaluation criteria include the use of local materials, the response to the arid and extreme climate, and the evolution of living spaces based on the sociocultural needs of each region. The results will allow an understanding of how vernacular architecture has responded to northern Mexico's geographical and environmental conditions, providing key information for its conservation and reinterpretation in the contemporary context. The study seeks to show regional architectural heritage and the generation of sustainable strategies in current architecture.

Keywords: Vernacular Architecture; Vernacular Houses; Mexican Architecture; Northern Architecture in Mexico; Reuse

Manuscript ID: ICCAUA2025EN0257

Socio-Cultural Impact of Mega Projects on Rural Areas: The case of Yalova (Çiftlikköy)-Kılıç Village

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Abstract:
Mega projects include large-scale applications such as industrial areas, bridges, airports, and transportation investments. The impact of these projects, which affect sectors like agriculture, industry, transportation, infrastructure, and energy, is primarily analyzed through their effects on urban areas. While the spatial dimension of their impact in large areas like cities is often discussed, the effect on rural areas, which are a key component for the sustenance of cities, is not sufficiently addressed. This study will examine the socio-cultural effects of mega projects on rural areas, focusing on the case of Yalova (Çiftlikköy)-Kılıç village. The study will use qualitative research methods, including in-depth interviews and field visits. It aims to explore socio-cultural changes in rural areas, alongside the transformation of space, and to examine the perceptions of the local population. Since the study will analyze the rural structure at a micro level, through the views of local residents and authorities, it will provide an opportunity to closely and directly observe changes in individuals' social lives.
Keywords: Mega Projects; Rural Transformation; Socio-Cultural Change; Spatial Perception; Local Identity and Belonging.

Manuscript ID: ICCAUA2025EN0264

Housing Adequacy in Egypt: Addressing the Crisis through Contextualized Solutions

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Abstract:
This paper explores Egypt's complex housing landscape, influenced by rapid urbanization, social inequality, and economic constraints that challenge housing access and quality. By assessing the adequate housing principles from the Institute for Housing and Urban Development Studies (IHS) and the International Federation for Housing and Planning (IFHP), this study examines housing adequacy in Cairo. Utilizing a mixed-methods approach, including four case studies, the research uncovers significant barriers in Cairo's adequate housing, such as high costs and infrastructure disparities. Findings reveal that while the "5 A's" framework is a useful starting point, it must be adjusted to fit Cairo's unique socio-economic, cultural, and environmental context. Residents highlighted issues related to privacy, space utilization, and service quality, underscoring limitations in existing housing policies. The study concludes with recommendations to localize the "5 A's" framework, advocating for affordable housing initiatives, community involvement, and urban planning that acknowledges Cairo's socio-economic diversity. By adapting international standards to meet local needs, this research proposes a pathway for Cairo to achieve a more inclusive, accessible, and sustainable housing market that addresses affordability and quality in both formal and informal settlements.
Keywords: Affordable Housing; Urbanization; Socio-economic Implications; Housing Policies; Cairo.

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Bibliometric Study on Antimicrobial Materials in Interior Architecture: Health Concerns, Sustainability, and Research Perspectives

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Abstract:
The growing integration of antimicrobial materials into interior architecture has garnered significant attention in recent years, particularly in response to increasing concerns about nosocomial infections and indoor air quality. This bibliometric study aims to explore research trends in this field by identifying key publications, influential authors, and leading institutions. Data were systematically collected from prominent scientific databases, including Scopus, Web of Science, and Google Scholar, using targeted keywords such as "antimicrobial materials," "interior architecture," "sustainable design," "antibacterial coatings," and "innovation in construction." The methodology involved a comprehensive analysis of publication patterns, authorship networks, and institutional contributions to map the evolution of research in this domain. This study provides a foundational overview of the current landscape and underscores the importance of antimicrobial materials in addressing health and sustainability challenges in built environments.
Keywords: Antimicrobial Surfaces; Interior Architecture; Pathogen Transmission; Healthcare Environments; Innovation in Construction.

Manuscript ID: ICCAUA2025EN0286

Integrating Technologies for Sustainable Affordable Housing in Urban Southeast Asia

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Abstract:
Sustainable affordable housing remains a key challenge in rapidly urbanizing Southeast Asia. Digital technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and smart sensors offer promising solutions to enhance sustainability while maintaining affordability. This study explores sustainable housing trends in urban Southeast Asia through a bibliometric analysis and examines how digital innovations contribute to sustainable housing via a systematic literature review. The research identifies key technological interventions that improve energy efficiency, resource optimization, and smart urban planning. By bridging the gap between technology and affordability, this study provides strategic insights for policymakers, urban planners, and industry stakeholders. The findings aim to inform housing provision strategies that integrate smart technologies cost-effectively, ensuring sustainability in urban development. This research advances discussions on future-proofing affordable housing through digital transformation in the built environment.
Keywords: Housing; Sustainable Affordable Housing; Technologies; Urban Area; Southeast Asia.

Manuscript ID: ICCAUA2025EN0319

Anthropology of a Virgin Village Kutch's *Banni* Grasslands: Zararhwadi

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Abstract:
This study explores the relationship between built forms and the lifestyle of Zararhwadi, a village in the *Banni* grasslands of Kutch, Gujarat. Using activity mapping, it examines how domestic activities shape space utilization and how built environments influence communal living, particularly in Bhunga settlements. The study highlights macro-level spatial dynamics, including house orientation, water resources, vegetation, cattle spaces, and their socio-cultural significance. It analyzes building elements such as walls, openings, roofs, and materials at the micro-level. The interaction between indoor and outdoor spaces is explored, focusing on their multifunctional use by community members. The study underscores the adaptability of Bhungas in preserving cultural heritage while meeting practical needs. It contributes to understanding rural anthropology and how built forms sustain the socio-cultural fabric of village life in *Banni* grasslands.
Keywords: Bhunagas; Anthropology; Activity Mapping.

Manuscript ID: ICCAUA2025EN0321

Participatory Governance in Action: Informal Housing Regularization and Resident Satisfaction in Batna, Algeria

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Abstract:
The city of Batna initiated urban development projects under the 2010-2014 five-year plan, aiming to enhance the city's image and improve citizens' quality of life. These projects, focused on the Oued Batna canal belt crossing informal neighborhoods, were delayed until 2019 due to economic and political crises, as well as residents' reluctance to accept demolitions. A retrospective study (2019-2024) evaluated citizen participation and their satisfaction with these improvements. A qualitative KAP (Knowledge, Attitudes, and Practices) survey was conducted with a representative sample of 350 residents. Results show that 52% of respondents were male, with a predominance of young adults (18-28 years old). Housing regularization affected more than half of the dwellings, with 20% of owners considering selling and 22% renovating their facades. The overall satisfaction rate was 46.5%. The project fostered participatory governance and increased land value, providing valuable insights for future urban development initiatives in similar contexts.
Keywords: Satisfaction; Informal Housing; Urban Governance; Batna City; Algeria.

Manuscript ID: ICCAUA2025EN0359

Open Spaces in Low Rise Residential Units in India: Urban vs Rural

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Abstract:
Open spaces are vital in spatial, climatic, and socio-cultural fabric of residential architecture. While vernacular rural homes integrate open spaces as multifunctional, climate-responsive elements, urban low-rise residences often treat them as regulatory obligations. Byelaws driven setbacks have led to significant gap in understanding how spatial configurations affect microclimate, ventilation, lighting, neighborhood interactions, and openings. This study undertakes a comparative, cross regional analysis of open spaces in low-rise residential units across urban and rural India integrating literature review, case studies, spatial composition mapping, referring building byelaws and codes. Findings reveal that rural, human driven open spaces – particularly central courtyards and organically placed courtyards – outperform urban setback-based configurations in terms of microclimate regulations (upto 3^{o}C lower temperature and better daylight penetration), cross ventilations, and multifunctionality. Urban setback, though compliant with building byelaws, often result in fragmented, underutilized, and climatic inefficient open spaces. Study recommends the learnings from regional vernacular architecture be incorporated in urban building byelaws.

Keywords: Open Spaces; Rural Housing; Urban Setbacks; Climate Responsive Design; India.

Manuscript ID: ICCAUA2025EN0368

Developing Design Strategies within Vernacular Context: A Social Responsibility-Based Approach to Architectural Education

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Abstract:
Although architecture is inherently shaped by social, cultural, and environmental factors, contemporary practices often narrow architects' roles, limiting their engagement with broader societal responsibilities. Therefore, integrating the concept of "social responsibility" into architectural practice can overcome these limitations, focusing on ethical responsibilities, sustainability, and community involvement. Following these arguments, Architectural Design Studio 3 at Abdullah Gül University, conducted during the 2022-2024 academic years, focused on the social responsibilities of architecture. The studio examined two culturally significant settlements, Divriği/Sivas and Büyükada/Istanbul, to analyze human-environment interactions. Students conducted multidimensional design research, incorporating historical documentation, field observations, mapping, and stakeholder interviews to analyze socio-cultural, natural, and built-environmental contexts. Based on the findings, they developed design strategies through architectural concepts and usage scenarios at urban, neighborhood, and building scales. This paper discusses the proposed design concepts within the framework of social responsibility principles, highlighting their significance for architectural education in addressing societal challenges.

Keywords: Architectural Education; Architectural Design Studio; Socially Responsible Architecture; Vernacular Architecture; Design Research.

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Karaköy to Galataport: A Case Study of Sterile Architecture's Effects

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Abstract:
The concept of "sterile" emerged globally in the first half of the 20th century alongside modern thought, associated with the notions of "hygienic, healthy, clean." Within the architectural world, modernist approaches introduced rational, universal perspectives, promoting an orderly and flawless design philosophy characterized by equality and authority. Over time, this resulted in the design of "standard, homogeneous, appropriate, ideal" structures for an ideal society, producing examples of "sterile architecture" in urban areas. This paper aims to examine the concept of "sterile architecture," which has thus far been implicitly present in the architectural discipline, through the lens of urban and spatial concepts. It seeks to open a discussion about the changes and transformations sterile architecture has caused in cities in relation to universalization, simplification, detachment, and authoritarianism. Spatial and social changes will be documented through the media in the region selected as the research area from Karaköy Salıpazarı to Galataport, and the current situation will be analyzed through observations, photographs and drawings. Observations, photographs, and drawings will be utilized to analyze the current state of the area. The study plans to explore the transformation's impact on daily life, urban-nature, and human-space interactions through examples of sterile architecture. The paper will also focus on the positive and negative developments in the area and their physical, social, and perceptual dimensions.
Keywords: Sterile; Sterile Architecture; Urban Transformation; Karaköy; Galataport.

Karaköy'den Galataport'a: Steril Mimarinin Etkileri Üzerine Bir Vaka Çalışması

Özet:
Steril kavramı dünyada 20. yüzyılın ilk yarısında modern düşünceyle beraber “hijyenik, sağlıklı, temiz” kavramları ile gündeme gelmiştir. Mimarlık dünyası modernizm yaklaşımıyla, rasyonelliğe dayanan, evrensel yaklaşımlar sunan, düzen ve kusursuzluk içinde eşit ve otoriter tasarım anlayışı geliştirmiş, zaman içinde ideal toplum için “standart, homojen, uygun, ideal” yapılar tasarlayarak kentlerde “steril mimarlık” örnekleri üretmiştir. Bildiride mimarlık disiplininde bugüne kadar örtük biçimde yer alan, “steril” mimarlık kavramını kent ve mekân kavramları üzerinden irdelemek ve kentlerde neden olduğu değişimler ve dönüşümleri evrenselleşme, yalınlaşma, temassızlaşma ve otoriterleşme kavramlarıyla tartışmaya açmak amaçlanmaktadır. Karaköy Salıpazarı’ndan Galataport’a dönüşen ve araştırma alanı olarak seçilen bölgede medya üzerinden mekansal ve sosyal değişimler belgelenecek, yapılacak gözlemler, fotoğraflar ve çizimlerle mevcut durum analiz edilecektir. Alanda gerçekleşen dönüşümün gündelik hayat, kent-doğa ve insan-mekan etkileşimleri steril mimarlık örnekleri üzerinden irdelenmesi planlanmaktadır. Alanlarda oluşan olumlu olumsuz gelişmeler ile fiziksel, sosyal, algısal boyuttaki etkileri tartışılacaktır.
Anahtar Kelimeler: Steril; Steril Mimarlık; Kentsel Dönüşüm; Karaköy; Galataport.

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SESSION E: Salutogenic Architecture

Session Chairs:
Dr. Maria A. El Helou *Dr. Muna Ahmed* *Dr. Salar Salah Muhy Al-Din*

Manuscript ID: ICCAUA2025EN0013

Post-Traumatic Cities: The Sense of Inclusiveness and the Impact of Universal Design-Beirut from 1960 until 2024

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Abstract:
The aim of this study is to treat a significant gap found in Beirut in 2024: enhancing its inhabitants' sense of inclusiveness in its public spaces. One effective potential approach posited to achieve this aim is the implementation of Universal Design (UD). A questionnaire was distributed to 150 Biartis in order to understand what in their eyes are the changes in public spaces impacting the urban connectivity of Beirut and its inhabitants use of these spaces, from 1960 until 2024. The findings revealed that the prewar sense of inclusiveness in Beirut was higher and that major reasons for a lack of inclusiveness and urban connectivity include the lack of UD implementation tackling both the types of vulnerability and disability specific to the post-disaster Beirut and the evolution of the war-created urban fragmentation. The results contribute in defining the specific UD to implement to enhance the sense of inclusiveness in Beirut.

Keywords: Beirut Urban Recovery; Post-Traumatic Inclusive Cities; War-Torn Cities; Post-Disaster Urban Connectivity, Post-Conflict Universal Design.

Manuscript ID: ICCAUA2025EN0019

Quality of Student Life: Factors Affecting Students' Perception and Use of a University Campus Built Environment

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Abstract:
This paper aims to explore how the built environment of a university campus influences the quality of life of its students, the author investigated students' perception and attitudes towards the use of various spatial components and outdoor open space to identify influential factors, including buildings layout, physical features, and outdoor thermal conditions, as well as students' needs and behaviour. Students from (3) faculties within Jazan University Campus in Jazan city (Saudi Arabia) were used for the case study. The methodology included literature review about quality of life and campus design requirements, an electronic questionnaire, and on-site visual observations to record students uses and interactions with the surroundings. The findings provide valuable insights for planners and administrators to understand the factors that influence the students' perception to enhance their student's quality of life. Further studies are recommended to explore these factors in different contexts.

Keywords: Quality of Life; University Campus; Built Environment; Student Quality of Life; Spatial Quality.

Manuscript ID: ICCAUA2025EN0040

Assessing the Impact of Indoor Environmental Quality on Occupants' Well-Being in Bahrain's Hospitals

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Abstract:
The quality of the indoor environment has a substantial impact on occupants' well-being and quality of life. Maintaining a positive indoor environment is particularly critical in complex architectural environments such as healthcare facilities. This paper adopts a mixed methodological approach to assess occupants' well-being through architectural design and indoor environmental quality in one of Bahrain's private hospitals. An online questionnaire is administered to the occupants of the hospital to understand their perception of indoor environment quality and its impact on their well-being. On-site observations are conducted to analyze the current physical state of the hospital from an architectural point of view, and triangulate the results with the questionnaire results. The findings shed light on the importance of outdoor views and thermal comfort in enhancing occupant well-being. The results provide valuable insights to designers and stakeholders to improve the quality of life in hospitals in Bahrain, through design considerations related to indoor environmental quality.

Keywords: Well-being; Quality of Life; Healthcare; Sustainability; Indoor Environmental Quality.

Manuscript ID: ICCAUA2025EN0063

Investigation of the Impact of Light Colour on Surface Colour Perception: A Case Study on Red Surfaces

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Abstract:
The perceived colour of a surface is governed by the spectral reflectance properties of the surface and the spectral power distribution of the illuminating light source. Accurate perception of surface colours is of paramount importance in museums and art galleries. The chromatic characteristics of the light used in exhibition spaces must be carefully chosen, considering the diverse attributes of the exhibits, and it is crucial to maintain the stability of this light colour across time and space. In galleries illuminated by natural daylight, the intensity and colour of light entering through windows vary throughout the day. Moreover, the use of supplementary artificial lighting at different times of the day can amplify changes in the ambient light colour, potentially altering the impact and meaning of artworks and diminishing the artist's intended message. This study investigates the variation in perceived surface colour as a function of the colour of the illuminating light. Red surfaces with varying levels of value and saturation, two spectral power distributions representative of daylight, and nine LED light sources were analysed as lighting conditions. The colour appearances of different surface-light combinations were calculated using the Yxy colour space. To illustrate how the perceived colour of an artwork shifts under different light sources, a geometric graphic design was developed and coloured according to specific colour schemes. The changes in the colours within this graphic, corresponding to varying light sources, were visualized using computer software. The findings emphasize the critical role of light colour in determining the perceived colours of artworks. These results offer valuable insights for the selection of suitable light sources not only for art exhibition spaces but also for other environments featuring colourful objects.
Keywords: Surface Colour; Light Colour; Colour Appearance; Daylight; Electric lighting.

Manuscript ID: ICCAUA2025EN0186

Optimizing Natural Lighting to Improve Comfort and Mobility in Schools for Visually Impaired Children in Bangladesh

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Abstract:
Natural lighting is essential for developing comfortable learning environments, especially for visually impaired children. It develops general comfort, spatial awareness, and lowers visual strain. However, typical schools in Bangladesh frequently lack proper lighting solutions, making learning difficult and having adverse effects. This study looks into the impact of natural lighting on visually challenged students, identifying key challenges such glare, uneven illumination, and poor spatial orientation. The study assesses existing lighting conditions using surveys and observations and offers practical design interventions such as strategic window placement, adjustable shades, and jali screens to improve natural light. The findings provide guidance for architects, educators, and policymakers in developing inclusive learning settings that encourage mobility and academic achievement for the visually impaired. This study emphasizes the importance of well-designed natural lighting in improving educational outcomes for visually impaired children in Bangladesh.
Keywords: Visual Impairment; Inclusive Design; Classroom; Corridor; Lighting.

Manuscript ID: ICCAUA2025EN0206

Translational Medicine HUB at the University of Monterrey

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Abstract:
The study aims to develop an architectural proposal for a research HUB for translational medicine within the Medical School of Monterrey University campus. The project responds to the need to integrate biomedical research with clinical practice to accelerate the transfer of scientific knowledge to therapeutic solutions and combine educational activities. The article searches to show the architectural process of design. It begins by analyzing several case studies. The second phase shows the morphological conceptualization of the HUB, focusing on the institutional vision of the University, combining interdisciplinary innovation based on Mexico's legal and regulatory framework. The architectural and functional design prioritizes modular and flexible spaces that encourage cutting-edge technology collaboration between scientists, doctors, engineers, and researchers. Specialized areas are considered for preclinical research, clinical trials, biotechnology development, laboratories, co-working spaces, and interaction with educational networks. The result is a sustainable building that works in a network with Christus Muguerza Hospital.

Keywords: Translational Medicine; Salutogenic Architecture, Public Health; Design Process, Public Health.

Manuscript ID: ICCAUA2025EN0227

Architectural Strategies for Circadian Health: Evidence-Based Design Recommendations for Rhythmic Daylight in Healthcare Spaces

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Abstract:
The design of built environments significantly influences rhythmic daylight exposure, impacting circadian health and well-being in healthcare settings. Despite increasing awareness of the role of daylight in healthcare architecture, patient rooms often fail to provide sufficient exposure to dynamic daylight cycles, potentially disturbing circadian regulation. This study employs an iterative analytical approach and a comprehensive review of daylighting strategies to develop 38 evidence-based design recommendations tailored to patients' circadian biological needs. These recommendations focus on factors such as opening size, geometry, orientation, shading devices, and high-performance glazing, aiming to enhance daylight conditions in healthcare spaces. Additionally, the study identifies critical gaps in existing research regarding architectural features and their effects on circadian health, highlighting the need for more focused guidance on design interventions. Ultimately, this research offers insights into architectural design and circadian biology, recommending future research directions for developing comprehensive guidelines to enhance recovery and performance in healing environments.

Keywords: Rhythmic Daylight; Circadian Health; Design; Simulation; Healthcare Settings; Light Cycle; Design Recommendations.

Manuscript ID: ICCAUA2025EN0230

Basic Units: An Architectural Proposal for the Immigration Emergency in México

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Abstract:
The present study analyzes the reuse of basic emergency shelter units, intending to adapt them as temporary shelters for deported migrants on the border between Mexico and the United States. In the current geopolitical context, characterized by restrictive immigration policies and increased mass deportations, it is essential to provide efficient and sustainable housing solutions. The methodology used is based on a typological, functional, and structural analysis of different models of temporary shelters, evaluating their viability, adaptability, durability, thermal efficiency, and sustainability are considered, as well as integrating design strategies that improve habitability conditions. The results show that existing basic units can serve as shelters with minimal modifications, incorporating renewable energy systems, thermal insulation, and optimized space distribution. The research highlights the role of architecture as a key tool in responding to migration crises, promoting innovative and resilient solutions, and addressing the growing need for humanitarian infrastructure on the border.

Keywords: Migration Crisis; Shelters; Public Health; Basic Housing Units; Humanitarian Architecture.

Manuscript ID: ICCAUA2025EN0328

Daylight Parameters in Hospital Wards in Hot, Arid Regions: A Simulation Analysis in the Context of Saudi Arabia

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Abstract:
The healing effect of daylight cannot be underestimated or overstated because multiple studies and research have revealed that exposure to natural light accelerates the healing or recovery process of patients. This research paper investigates the optimization of daylighting in hospital wards situated in hot, arid regions with a focus on Saudi Arabia. The study employed simulation tools to evaluate different daylighting strategies, aiming to improve energy efficiency and well-being. The research determined that patients in daylight rooms tend to experience less pain; this is a testament to the therapeutic effects of daylight. Consequently, daylighting decreases hospital stays and enhances mood and productivity among staff. The evaluation of the recent situation in the case study ward in a Saudi Arabia hospital established that the daylight levels are below the recommended standards and that the daylight varies between the identical wards due to the time of the day and ward direction.

Keywords: Illuminance Levels; Uniformity Distribution; Healthcare Buildings; Daylight Performance.

Manuscript ID: ICCAUA2025TR0010

Benefits of Biophilic Design in Workspaces

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Abstract:
The concept of biophilia was introduced to literature in 1964 by Eric Fromm with his book titled The Heart of Man and means love of nature. What is intended to be reflected is an emphasis on people's need for nature. This concept was presented as a hypothesis by Biologist Edward Osborn Wilson in 1984 and was introduced to the design community as Biophilic Design by Stephen Kellert in 2005. Like every design approach, it has its own criteria and serves as an escape for those trapped in the built environment. This approach has many positive effects on users. These are grouped under the headings of psychological, physiological, environmental and economic effects. The aim of this study is to emphasize the benefits of the effects of Biophilic Design on users in a workplace. These benefits will be revealed as a result of the literature review and the benefits that can be provided in workplaces thanks to the Biophilic Design approach will be underlined.
Keywords: Biophilia; Biophilic Design; Workspaces.

Biyofilik Tasarımın Çalışma Alanlarına Faydaları

Özet:
Biyofili kavramı 1964 yılında Eric Fromm tarafından İnsan Yıkıcılığının Anatomisi başlıklı kitapla literature kazandırılmış olup doğa sevgisi anlamına gelmektedir. Yansıtılmak istenen insanların doğaya duyduğu ihtiyaca bir vurgudur. Bu kavram 1984 yılında Biyolog Edward Osborn Wilson tarafından hipotez olarak sunulmuş ve 2005 yılında ise Stephen Kellert tarafından Biyofilik Tasarım olarak tasarım camiasına kazandırılmıştır. Her tasarım yaklaşımı gibi kendisine ait kriterleri bulunmakta ve yapılı çevreye sıkışmış kişiler için bir kaçış görevi görmektedir. Bu yaklaşımın kullanıcılar üzerinde birçok olumlu etkisi vardır. Bunlar; psikolojik, fizyolojik, çevresel ve ekonomik etkiler başlıkları altında toplanmaktadır. Bu çalışmada amaç, Biyofilik Tasarım'ın etkilerinin bir çalışma mekanındaki kullanıcılar üzerinde faydalarını vurgulamaktır. Bu faydalar literatür taraması sonucu ortaya konacak ve Biyofilik Tasarım yaklaşımı sayesinde iş yerlerinde ne gibi faydalar sağlanabileceğinin altı çizilecektir.
Anahtar Kelimeler: Biyofili; Biyofilik Tasarım; Çalışma Alanları.

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SESSION F: Civil Engineering

Session Chairs:
Dr. Behnam Mobaraki *Dr. Didem Güneş Yılmaz* *Dr. Elizaveta Mayakova*

Manuscript ID: ICCAUA2025EN0033

Stadiums as Widespan Structures in Cameroon. Case study: Ahmadou Ahidjo Stadium and Olembe Paul Biya Stadium

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Abstract:
Stadiums represent complex architectural and engineering achievements that blend structural innovation with cultural significance as widespan structures. This research investigates the structural systems and architectural design of two prominent Cameroonian stadiums: the Ahmadou Ahidjo Stadium and the Olembe Paul Biya Stadium. Using a comprehensive methodology that integrates architectural analysis, historical research, and detailed case study assessment, the study examines the evolution, technological advancements, and contextual challenges of stadium construction in developing countries. By combining qualitative architectural analysis with quantitative structural assessments, this study provides a framework for understanding stadium design. Furthermore, the research investigates the structural components of these stadiums, focusing on roof structures, technological innovations, and contextual adaptations. Key findings highlight the importance of balancing innovation, cost-effectiveness, flexibility, and safety in widespan design. The findings contribute to global discourse on stadium architecture, offering insights into how local contexts influence structural design. Finally Technical guidelines and recommendations are proposed for future stadium construction in Cameroon and sin the African region.

Keywords: Widespan Structures; Structural Systems; Stadium Architecture; Technological Advancements; Architectural Design; Cameroon.

Manuscript ID: ICCAUA2025EN0174

New School Buildings and Their Impact of the Urban Landscape

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Abstract:
In our study, we examined how a new school building impacts the urban landscape of the surrounding area. Our research methods included observation, expert interviews, focus groups with students and teachers, an online survey, and assessment using the SACERS scale. The findings indicate that the new school not only creates a favorable environment but also influences the urban landscape by offering various educational, sports, and cultural events that engage local residents. The school serves a city-forming function, attracting families with children and creating employment opportunities. It also plays a cultural role by integrating its values into the neighborhood's broader culture. The presence of the school leads to changes in the urban landscape; some private extracurricular clubs may close as similar activities are offered within the school, while new businesses such as cafés, stationery shops and toy stores may emerge. Additionally, traffic patterns are altered during school hours, affecting local mobility.

Keywords: Educational Topics; New School Building; The Urban Landscape; A City-Forming Function; A Cultural Role; Educational, Sports, and Cultural Events.

Manuscript ID: ICCAUA2025TR0038

Innovative Urban Design Approaches for Smart Cities: Integrating Technology, Community Engagement, and Sustainable Practices

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Abstract:
This study explores innovative urban design approaches for smart cities, focusing on the integration of technology, community engagement, and sustainable practices. The research aims to identify and prioritize key factors that influence effective urban design in smart cities using the Analytical Hierarchy Process (AHP) methodology. Through a structured evaluation of criteria such as technological infrastructure, environmental sustainability, public participation, and urban resilience, the study develops a hierarchical model to quantify their relative importance. Data collection involved surveys with urban planning experts and community stakeholders. Results highlight that sustainable practices and community involvement are critical for long-term urban success, while technological advancements act as enablers for smart solutions. The findings offer actionable insights into balancing innovation with inclusivity and sustainability in urban planning. This study contributes to the field by providing a decision-making framework for policymakers and urban planners to design adaptive, human-centered smart cities.

Keywords: Smart Cities; Urban Design; Sustainable Practices; Community Engagement; Analytical Hierarchy Process (AHP).

Manuscript ID: ICCAUA2025EN0178

Wireless Open-Source Sensor Technology for Monitoring Concrete Mechanical Properties in Sustainable Constructions

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Abstract:
This paper explores the use of wireless open-source sensor technology to monitor concrete and environmental parameters in energy-efficient, resilient, and sustainable construction. Accurate monitoring of structural and environmental conditions is essential to optimize building performance. The proposed system employs low-cost, wireless sensors with NodeMCU ESP8266 WiFi modules to gather real-time data on concrete properties, including temperature and humidity, during the casting and curing stages, along with other environmental factors affecting the structure. By integrating open-source technology, the system provides a cost-effective solution for continuous monitoring, enabling early detection of issues such as material degradation or energy inefficiencies. This paper discusses the design, implementation, and benefits of the system, highlighting its role in improving building durability and reducing environmental impact. The results demonstrate the effectiveness of this approach in supporting sustainable construction practices and enhancing building resilience.
Keywords: Sustainable Building; Structural Health Monitoring; Energy Efficiency; Resilient Construction; Curing and Casting Stages.

Manuscript ID: ICCAUA2025EN0386

Mechanical, Durability, and Environmental Performance of Iron Ore Tailing-Based Geopolymers

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Abstract:
With an estimated 1.2 billion tons stored in tailing dams worldwide each year, iron ore tailings (IOT) disposal poses significant environmental challenges. These tailings occupy land, polluting soil and water, and pose a risk of dam failure. The cement industry is the world's largest CO_2 emitter, which releases around 0.9 tons of CO_2 per ton. Geopolymers are generated by the addition of an alkali solution to aluminosilicate precursors. Compared to OPC, geopolymers reduce CO_2 emissions by as much as 80%. Recent studies show IOT possibilities as a sustainable substitute in geopolymer production. This article examines the mechanical properties, durability, and environmental performance of IOT-based geopolymers. Results reveal that including IOT into geopolymers increases their compressive strength, up to 50 MPa, and improves durability while lowering heavy metal leaching relative to conventional materials. IOT-based geopolymers reduce emissions by up to 60%, promoting environmentally friendly construction practices.
Keywords: Iron Ore Tailing; Geopolymer; Mechanical Properties; Durability; Sustainability.

Manuscript ID: ICCAUA2025EN0393

Large-span Cantilever Design: The Architecture of Structure

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Abstract:
Large-span cantilever structures represent a pinnacle of architectural and engineering innovation, enabling striking designs while addressing complex structural challenges. This paper examines the mechanics behind cantilevered structures by analyzing load diagrams, moment resistance, and aims to understand how forces (gravity, wind, seismic loads) impact the cantilever structure in landmark buildings. Engineers calculate the structural behavior of large-span cantilevers using Finite Element Analysis, which breaks the structure into smaller elements to analyze stress, strain, and deflection under various loads. Architects must understand these calculations because cantilevered structures push materials to their limits, requiring a balance between aesthetics and structural feasibility. The discussion focuses on the interplay between form and function, analyzing how materials, construction techniques, and support systems enable extreme cantilevers. By dissecting the mechanics behind these remarkable structures, this research provides insights not only into the evolution of cantilevered architecture and its impact on contemporary design, but also highlights how the collaboration with engineers becomes more effective when architects consider structural constraints early in the design process.

Keywords: Large Span Structures; Structural Systems; Structural Design of Special Structures; Special Structures; Cantilever Design.

Manuscript ID: ICCAUA2025EN0316

A Performance Forecasting Model for Optimizing CDF-Funded Construction Projects in the Copperbelt Province, Zambia

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Abstract:
The Constituency Development Fund (CDF) in Zambia supports micro-community projects but faces challenges in contractor performance, leading to public dissatisfaction. This study, therefore, developed Key Performance Indicator (KPI) forecasting models to enhance contractor performance in CDF construction projects in Copperbelt Province. Using a positivist philosophy, the research employed an experimental design and mixed methods approach, with data collected through survey questionnaires. Five critical KPIs were identified: cost-effectiveness, quality adherence, schedule adherence, safety compliance, and client satisfaction, with cost-effectiveness ranking highest. Neuro-Fuzzy techniques were used to develop six KPI forecasting models, while the Analytical Hierarchy Process (AHP) determined the relative importance of each KPI, forming a Performance Indicator (PI) model, which was implemented in Simulink for system evaluation. Forecasting errors were assessed through direct and cascaded prediction methods to ensure reliability. The study underscores the importance of proactive KPI tracking to optimize contractor performance, enhance transparency, and support sustainable infrastructure development.

Keywords: Constituency Development Fund (CDF); Neuro-Fuzzy techniques; Analytical Hierarchy Process (AHP); Performance Forecasting; Project Management.

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Managing Disputes in the Construction Sector: The Perspective of Project Managers

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Abstract:
The global construction industry is expected to increase by 42% between 2020 and 2030; its contribution to national economies is rising. However, this growth increases the disputes that arise during project management processes. Disputes place an additional burden on the judicial system and cause serious economic losses. Therefore, it is of great importance to develop more effective processes. This research aims to examine the root causes of disputes and to propose solutions. Within the scope of the research, the ability of project managers, directly involved in all stages of construction projects, to evaluate these disputes from a broad perspective. In this context, a survey was administered to project managers who have worked on construction projects in Türkiye and have been involved in disputes, and 123 valid data were collected. The results were analyzed with Mann-Whitney U and Kruskal Wallis tests. The study includes the preliminary findings of a master's thesis.
Keywords: Construction Disputes; Adjudication; Project Management; Project Manager.

İnşaat Sektöründe Anlaşmazlıkların Yönetimi: Proje Müdürlerinin Perspektifi

Özet:
Küresel inşaat sektöründe, 2020-2030 yılları arasında %42 artış beklenmektedir. Dolayısıyla inşaat sektörünün ülke ekonomilerine katkısı, her yıl artış göstermektedir. Ancak bu büyüme, proje yönetim süreçlerinde ortaya çıkan anlaşmazlıkların sayısını da artırmaktadır. Anlaşmazlıklar, yargı sistemine ek bir yük getirmekte ve bireyler ile toplum için ciddi ekonomik kayıplara yol açmaktadır. Bu nedenle, Türkiye'de inşaat sektörü anlaşmazlıklarına yönelik bilimsel çalışmaların artırılması, sektörde daha etkin ve verimli süreçlerin geliştirilmesi açısından büyük önem taşımaktadır. Bu araştırmanın amacı, inşaat sektöründeki anlaşmazlıkların temel nedenlerini inceleyerek çözüm önerileri sunmaktır. Araştırma kapsamında, inşaat projelerinin tüm aşamalarına doğrudan müdahil olan proje müdürlerinin, bu anlaşmazlıkları geniş bir perspektiften değerlendirme yetenekleri göz önünde bulundurulmuştur. Bu bağlamda, Türkiye'de inşaat projelerinde görev yapmış ve anlaşmazlıkta rol almış proje müdürlerine bir anket çalışması uygulanmış ve 123 geçerli veri toplanmıştır. Elde edilen sonuçlar Mann Whitney U ve Kruskal Wallis testleri ile analiz edilmiştir. Çalışma, bir yüksek lisans tezinin ön bulgularını içermektedir.
Anahtar Kelimeler: İnşaat Anlaşmazlıkları; Yargılama; Proje Yönetimi; Proje müdürü.

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Identification of Challenges Hindering Effective Stakeholder Management in Construction Projects

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Abstract:
This study investigates challenges in the Turkish construction sector regarding stakeholder management. It aims to identify the key challenges that hinder effective stakeholder management, assess their frequency, and evaluate their significance. To achieve this aim, a systematic literature review (SLR) identified 69 potential barriers to effective stakeholder management in construction projects. A survey was developed based on the results of SLR and administered online and in person to various key stakeholders, including architects, civil engineers, material suppliers, and contractors. Data were collected from 164 project stakeholders across Turkey and analyzed using quantitative methods using SPSS 29.0. The study highlights the challenges impeding stakeholder management, providing insights into their frequency, impact, and importance rankings. By addressing these challenges, the research improves stakeholder management practices, ultimately fostering a more efficient and sustainable construction process.
Keywords: Stakeholder; Stakeholder Management; Turkish Construction Sector; Construction Projects.

İnşaat Projelerinde Etkin Paydaş Yönetimini Engelleyen Faktörlerin Belirlenmesi

Özet:
Bu çalışma, Türk inşaat sektöründe paydaş yönetimine ilişkin engelleri araştırmaktadır. Etkin paydaş yönetimini engelleyen temel faktörleri tanımlamayı, bu faktörlerin oluşum sıklıklarını ve önem derecelerini belirlemeyi amaçlamaktadır. Bu amaca ulaşmak için, sistematik bir literatür taraması (SLT) sonucunda inşaat projelerinde etkili paydaş yönetiminini engelleyen 69 potansiyel kriter belirlenmiştir. SLT'nin sonuçlarına dayalı olarak bir anket geliştirilmiş ve mimarlar, inşaat mühendisleri, malzeme tedarikçileri ve müteahhitlerden oluşan örneklem grubuna çevrimiçi ve yüz yüze olarak uygulanmıştır. Türkiye genelindeki 164 proje paydaşından veriler toplanmış ve SPSS 29.0 kullanılarak nicel yöntemlerle analiz edilmiştir. Bu çalışma, paydaş yönetimini engelleyen faktörleri vurgulayarak bunların sıklığı, etkisi ve önem sıralamalarına ilişkin içgörüler sunmaktadır. Araştırma, bu faktörlerin ele alınmasıyla paydaş yönetimi uygulamalarını iyileştirerek nihayetinde daha verimli ve sürdürülebilir bir inşaat sürecini teşvik etmektedir.
Anahtar Kelimeler: Paydaş; Paydaş Yönetimi; Türk İnşaat Sektörü; İnşaat Projeleri.

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