



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**14th Annual International Conference on
Architecture
8-11 July 2024, Athens, Greece**

**Edited by
Clara Germana Gonçalves & Olga Gkounta**

2024

Abstracts
14th Annual International
Conference on Architecture
8-11 July 2024, Athens, Greece

Edited by
Clara Germana Gonçalves &
Olga Gkounta

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Preface

This book includes the abstracts of all the papers presented at the 14th Annual International Conference on Architecture (8-11 July 2024), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications only after a blind peer review process.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which they can discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world can meet to exchange ideas on their research and consider the future developments of their fields of study.

To facilitate the communication, a new references section includes all the abstract books published as part of this conference (Table 1). I invite the readers to access these abstract books –these are available for free– and compare how the themes of the conference have evolved over the years. According to ATINER's mission, the presenters in these conferences are coming from many different countries, presenting various topics.

Table 1. *Publication of Books of Abstracts of Proceedings, 2011-2024*

| Year | Papers | Countries | References |
|------|--------|-----------|--|
| 2024 | 41 | 14 | Gonçalves and Gkounta (2024) |
| 2023 | 46 | 17 | Gonçalves and Gkounta (2023) |
| 2022 | 39 | 22 | Gonçalves and Gkounta (2022) |
| 2021 | 33 | 19 | Papanikos (2021) |
| 2020 | 19 | 12 | Papanikos (2020) |
| 2019 | 51 | 21 | Papanikos (2019) |
| 2018 | 57 | 22 | Papanikos (2018) |
| 2017 | 61 | 22 | Papanikos (2017) |
| 2016 | 50 | 21 | Papanikos (2016) |
| 2015 | 72 | 25 | Papanikos (2015) |
| 2014 | 80 | 23 | Papanikos (2014) |
| 2013 | 140 | 39 | Papanikos (2013) |
| 2012 | 20 | 10 | Papanikos (2012) |
| 2011 | 34 | 12 | Papanikos (2011) |

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world can regularly meet to discuss the developments of their disciplines and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published over 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together.

Gregory T. Papanikos
President

Editors' Note

These abstracts provide a vital means to the dissemination of scholarly inquiry in the field of Architecture. The breadth and depth of research approaches and topics represented in this book underscores the diversity of the conference.

ATINER's mission is to bring together academics from all corners of the world in order to engage with each other, brainstorm, exchange ideas, be inspired by one another, and once they are back in their institutions and countries to implement what they have acquired. The *14th Annual International Conference on Architecture* accomplished this goal by bringing together academics and scholars from 14 different countries (Bahrain, Bangladesh, Canada, India, Israel, Italy, Japan, New Zealand, Poland, Portugal, Spain, Sweden, Türkiye, USA), which brought in the conference the perspectives of many different country approaches and realities in the field.

Publishing this book can help that spirit of engaged scholarship continue into the future. With our joint efforts, the next editions of this conference will be even better. We hope that this abstract book as a whole will be both of interest and of value to the reading audience. May it be a stimulus for further research and the progress of the discipline.

Clara Germana Gonçalves & Olga Gkounta
Editors

14th Annual International Conference on Architecture, 8-11 July 2024, Athens, Greece

Organizing & Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Nicholas N. Patricios, Vice President of Strategic Planning & Analysis, ATINER, Dean Emeritus & Professor, School of Architecture, University of Miami, USA.
3. Clara Germana Gonçalves, Head, Architecture Unit, ATINER & Researcher, CITAD (Centro de Investigação em Território, Arquitectura e Design), Lusíada University and Invited Assistant Professor, Lisbon School of Architecture, University of Lisbon, Portugal.
4. Maria João Dos Reis Moreira Soares, Academic Member, ATINER & Associate Professor, Lusiada University - Lisbon, and Research Fellow, CITAD - Research Centre on Territory, Architecture & Design, Portugal.
5. Alberto Reaes Pinto, Coordinator / Professor, ULL - CITAD (Research Centre, ULL) / Lusíada University of Lisbon, Portugal.

FINAL CONFERENCE PROGRAM

14th Annual International Conference on Architecture, 8-11 July 2024,
Athens, Greece

PROGRAM

Monday 8 July 2024

07:45-08:30

Registration

08:30-08:45

Opening and Welcoming Remarks:

- o **Gregory T. Papanikos**, President, ATINER.

08:45-10:30 Session 1

Moderator: Rogério Paulo Vieira de Almeida, Researcher, Professor, ISCTE – University Institute of Lisbon, Portugal.

1. **Michael Burt**, Professor Emeritus, Technion – Israel Institute of Technology, Israel.
Title: Multi-Modal Transportation Hub; Combined Air-Marine Terminals.
2. **Jorge Correia**, Professor, University of Minho / Lab2PT, Portugal.
Title: Late Gothic Towers in Africa: Function and Rhetoric in Debate.
3. **Valentina Radi**, Adjunct Professor, University of Ferrara, Italy.
Alessandro Gaiani, Associate Professor, University of Ferrara, Italy.
Title: Railway Architecture, Typological Analysis and Recycling Strategies.
4. **Donia Zhang**, Director, Neoland School of Chinese Culture, Canada.
Title: Courtyard Architecture: Along the Silk Roads, around the World.
5. **Mark Trieglaff**, President, ACT Services, Inc., USA.
Title: Universal Design in a Small and Large Park Setting.

10:30-12:00 Session 2 – Hyálinos – Inter and Transdisciplinarity in Architecture I

Moderator: Clara Germana Gonçalves, Head, Architecture & Design Unit, the Athens Institute & Researcher, CITAD (Centro de Investigação em Território, Arquitectura e Design), Lusíada University and Invited Assistant Professor, Lisbon School of Architecture, University of Lisbon, Portugal.

1. **Robert Hahn**, Professor, Southern Illinois University Carbondale, USA.
Title: How Archaic Architects and their Architectural Technologies Contributed to the Origins of Philosophy/Cosmology in Greece.
2. **Elzbieta Chrzanowska-Kluczevska**, Honorary Professor, Jagiellonian University in Kraków, Poland.
Title: Poetics of Architecture. The Metaphor of Embodiment – A Conceptual Borrowing from Verbal Language or an Architectural Form of Existence? A Case of Transdisciplinary Relationship between Architecture and Linguistics.
3. **Zeynep Tuna Ultav**, Professor, Yaşar University, Türkiye.
Yasemin Misirli, Graduate Student, Yaşar University, Türkiye.
Title: The Symbiosis of Space and Story: Semiotic Insights into J.R.R. Tolkien's Middle Earth.
4. **Rui Alves**, Researcher & Assistant Professor, CITAD / Lusíada University, Portugal.
Title: Contemporary Interpretations of the Courtyard House and the Cubic House with a Roof Terrace in Southern Portuguese Architecture.

12:00-13:30 Session 3

Moderator: Donia Zhang, Director, Neoland School of Chinese Culture, Canada.

1. **Thomas Bisiani**, Professor / Researcher, University of Trieste, Italy.
Adriano Venudo, Professor / Researcher, University of Trieste, Italy.
Title: Along the Terraqueous. New Art Communities as Cultural-Creative Models for the Recovery

of the Former Colonies of the Land Reclamation.

2. **David Fox**, Associate Professor, University of Tennessee, USA.
Title: The Appalachia Studio: A Case Study of Using Applied Research into African American History to Simulate and Create Economic Development.
3. **Sherif Khashaba**, Associate Professor, Royal University for Women, Bahrain.
Title: A Sustainable Approach for the Rehabilitation of the Existing Housing in Cairo.
4. **Yolana Lemos**, Researcher, CITAD, Portugal.
Title: Local and Afrofuturist Thinking in the Decolonisation Process.

13:30-14:30 Lunch

14:30-16:00 Session 4 - Hyálinos - Inter and Transdisciplinarity in Architecture II

Moderator: David Fox, Associate Professor, University of Tennessee, USA.

1. **Ela Gungoren**, Associate Professor, Istanbul Galata University, Türkiye.
Title: Istanbul Beyazıt Fire Tower: A Place of Remembrance and Continuity of Visual Imagery.
2. **Maria Joao Moreira Soares**, Researcher / Assistant Professor, CITAD / Lusíada University, Portugal.
Joao Miguel Couto Duarte, Assistant Professor / Research Associate, Lusíada University / CITAD, Portugal.
Title: "For the Greater Spiritual Delight": Dialogues between Le Corbusier and Álvaro Siza in Firminy and Rennes.
3. **Vittoria Umani**, PhD Student, University of Trieste, Italy.
Title: From Collective Creativity to the Authorial Project: Exploring the Architectural Process of Lawrence Halprin.

16:00-18:00 Session 5

Moderator: Maria Joao Moreira Soares, Researcher / Assistant Professor, CITAD / Lusíada University, Portugal.

1. **Junpeng Fan**, PhD Student, Keio University, Japan.
Title: A Visual Cross-Platform Evaluation Platform for Preservation and Revitalization of Ancient Villages Application in Qinchuan Ancient Village, Zhejiang Province.
2. **Monica Marcos**, Architect and Egyptologist, Polytechnic University of Madrid (UPM), Spain.
Title: The First Urban Planning, Amarna.
3. **Fatma Sedes**, Head of Architectural Restoration Department, Istanbul Aydın University, Türkiye.
Title: Waterside Mansion of Esma Sultan within the Scope of Contemporary Restoration Work.
4. **Ignacio Sanfeliu**, Associate Professor, Universitat Politècnica de Catalunya (UPC) & Escola Tècnica Superior d'Arquitectura de Barcelona (ETSAB), Spain.
Title: New Softball Sports Equipment in Barcelona.
5. **Rui Seco**, Researcher, CITAD / Lusíada University, Portugal.
Title: Public Dwelling and City Design: Learning from Recent Portuguese Developments.

20:30-22:30

Athenian Early Evening Symposium (includes in order of appearance: continuous academic discussions, dinner, wine/water, music)

Tuesday 9 July 2024

08:30-10:00 Session 6

Moderator: Vincenzo Sapienza, Full Professor, University of Catania, Italy.

1. **Ingrid Campo Ruiz**, European Commission Marie Skłodowska-Curie Actions Individual Fellow, KTH The Royal Institute of Technology, Sweden.
Title: Architecture and Artificial Intelligence: The Transformation of Public Space.
2. **Melis Erdem**, Research Assistant, Middle East Technical University, Türkiye.
Title: The Conflicts and Continuities between Natural and Urban Environment in the 21st Century.

| |
|---|
| <p>3. Amos Bar-Eli, Senior Lecturer, HIT – Holon Institute of Technology, Israel. <i>Title: Reciprocal Architecture: Observation Decks as Non-Place Places.</i></p> <p>4. Alessandro Meloni, PhD Student, University of Cagliari, Italy. <i>Title: Landscape, Technique, Community. Integrating Waste Treatment Infrastructures in Fragile Landscape Contexts.</i></p> |
| <p>10:00-11:30 Session 7 Moderator: Amos Bar-Eli, Senior Lecturer, HIT – Holon Institute of Technology, Israel.</p> |
| <p>1. Vincenzo Sapienza, Full Professor, University of Catania, Italy. <i>Title: Analysis and Design of Corrugated Cardboard Components for Temporary Architecture.</i></p> <p>2. Egemen Kaymaz, Research Assistant, Bursa Uludağ University, Türkiye. Filiz Senkal Sezer, Professor, Bursa Uludağ University, Türkiye. <i>Title: A Multi-Variable Analysis for Heating Energy Performance and Thermal Comfort in Residential Buildings.</i></p> <p>3. Claire Flemmer, Senior Lecturer, Massey University, New Zealand. Alison McIntosh, Professor, Auckland University of Technology, New Zealand. <i>Title: Equitable Access to the Built Environment for People with Disability.</i></p> |
| <p>11:30-13:00 Session 8 – Hyálinos – Inter and Transdisciplinarity in Architecture III Moderator: Alberto Reaes Pinto, Director, CITAD / Lusíada University, Portugal</p> |
| <p>1. Rogério Paulo Vieira de Almeida, Researcher, Professor, ISCTE – University Institute of Lisbon, Portugal. <i>Title: Rehashing Times & Forms: Graphic Meditations on Drawing, Urban Form.</i></p> <p>2. Joao Miguel Couto Duarte, Assistant Professor / Research Associate, Lusíada University / CITAD, Portugal. Maria Joao Moreira Soares, Researcher / Assistant Professor, CITAD / Lusíada University, Portugal. <i>Title: Álvaro Siza's Tidal Pools and João Mendes Ribeiro's Chestnut House: Crossings with Japanese Architecture.</i></p> <p>3. Maria Tavares, Assistant Professor / Research Associate, Lusíada University / CITAD, Portugal. <i>Title: Rule or Exception? The Social Role of the Art in the Residential Architecture of the 1950s: The Case of Olivais-Norte in Lisbon.</i></p> <p>4. Luis Carlos Bucha, PhD Candidate & Research Fellow, CITAD / Lusíada University, Portugal. <i>Title: Unveiling Le Corbusier's Architectural Poetry: Weaving La Main Ouverte and Le Signe du Taureau.</i></p> <p>5. Joana Pereira, PhD Student / Researcher, Universidade Lusíada de Lisboa / CITAD, Portugal. <i>Title: Copy and Invention: An «Exotic» Mimesis and Diegesis at the Colonial Section of 1940's Portuguese World's Historical Exhibition.</i></p> |
| <p>13:00-14:00 Lunch</p> |
| <p>14:00-15:30 Session 9 Moderator: Joao Miguel Couto Duarte, Assistant Professor / Research Associate, Lusíada University / CITAD, Portugal.</p> |
| <p>1. Carlos Oliveira Augusto, Researcher, CITAD / Lusíada University, Portugal . Alberto Reaes Pinto, Director, CITAD / Lusíada University, Portugal. <i>Title: Prefabrication and the Sustainability of External Building Envelopes.</i></p> <p>2. Alberto Reaes Pinto, Director, CITAD / Lusíada University, Portugal. Marlene Canudo Urbano, Researcher, CITAD / Lusíada University, Portugal. <i>Title: Prefabricated Exterior Panels with Bio-Based Materials for Buildings in Low-Density Regions.</i></p> <p>3. Isha Pramod Dongre, Postgraduate Student, Indian Institute of Technology Roorkee, India. Purussottam Nanda, Postgraduate Student, Indian Institute of Technology Roorkee, India. Smriti Saraswat, Assistant Professor, Indian Institute of Technology Roorkee, India.</p> |

- Title: Investigating the Weaving Crafts of Kerala in Relation to its Applications in Space-Making.*
4. **Purusottam Nanda**, Postgraduate Student, Indian Institute of Technology Roorkee, India.
Isha Pramod Dongre, Postgraduate Student, Indian Institute of Technology Roorkee, India.
Smriti Saraswat, Assistant Professor, Indian Institute of Technology Roorkee, India.
Title: Investigating the Concept of Microarchitecture through the Temple Chariots of Kalinga Region.

15:30-17:00 Session 10

Moderator: Maria Tavares, Assistant Professor / Research Associate, Lusíada University / CITAD, Portugal.

1. **Gorkem Arslan Kilinc**, Assistant Professor, Mimar Sinan Fine Arts University, Türkiye.
Title: Structural Design of Tall Mass Timber Buildings.
2. **Richard Caratti-Zarytkiewicz**, Lighting Designer – Educator, Association des Concepteurs Lumière et Éclairagistes, France.
Title: Lighting Design: The Result of a Visual and Non-Visual Architectural Reflection.
3. **Guliz Tasdemir**, Assistant Professor, TED University, Türkiye.
Title: A Review of a Design Process in the Creative Industry: Enerjisa Case, Ankara.
4. **Quazi Naz**, M.S.Arch Student, Bangladesh University of Engineering and Technology, Bangladesh.
Title: Daylight Performance in Atriums with Skylight: Comfort and Net Zero Energy Strategy for Cultural Institutions.

17:30-20:30 Session 11

Old and New-An Educational Urban Walk

The urban walk ticket is not included as part of your registration fee. It includes transportation costs and the cost to enter the Parthenon and the other monuments on the Acropolis Hill. The urban walk tour includes the broader area of Athens. Among other sites, it includes: Zappion, Syntagma Square, Temple of Olympian Zeus, Ancient Roman Agora and on Acropolis Hill: the Propylaea, the Temple of Athena Nike, the Erechtheion, and the Parthenon. The program of the tour may be adjusted, if there is a need beyond our control. This is a private event organized by ATINER exclusively for the conference participants.

20:30-22:00

Dinner

Wednesday 10 July 2024
An Educational Visit to Selected Islands
or Mycenae Visit

Thursday 11 July 2024
Visiting the Oracle of Delphi

Friday 12 July 2024
Visiting the Ancient Corinth and Cape Sounion

Rui Alves

Researcher & Assistant Professor, CITAD/Lusíada University, Portugal

Contemporary Interpretations of the Courtyard House and the Cubic House with a Roof Terrace in Southern Portuguese Architecture

This communication aims to explore the adoption of the Mediterranean house model in two distinct and/or intertwined types in some architectural projects by Portuguese architects in southern Portugal: the courtyard house and the cubic house with a roof terrace.

The first example concerns the two types of houses (A and B) developed by Álvaro Siza Vieira in the Malagueira neighbourhood in Évora (1977), in which it is possible to identify the type of house with a courtyard, separated from the street by a high wall (A), or inside the plot (B). These are houses grouped in bands that take us back to the traditional urban streets of the Alentejo and the German Siedlungen of the 1920s and 1930s but using the internalised patio and the cubic volumes and terraces (açoteias) that can be seen in the houses of Olhão, in southern Portugal, as well as in various parts of the Mediterranean world. If in the Bairro da Bouça (1975-1978, 2000-2006) or the SAAL São Victor (1974-1977), there are more links with Dutch and German modernist architecture of the 1920s and 1930s, as well as analogies with workers' housing in the city of Porto, in this case the link with popular housing is also made using the Mediterranean model. The cubic house with a roof terrace is also perfectly identifiable as an analogue type in Eduardo Souto de Moura's house in Tavira (1991-1994). In this case, it is a set of agglutinated volumes like the churches in Tavira Castle that Souto de Moura assumes as analogue material. In the house in Alte (2002-2006), by RA+TR, various ways of mediating between interior and exterior are sought, making use of patios and the articulation between volumes regarding the regional typological models of the cubic house and the house with patio. In the Alfama house (2012-2016) and the Odeceixe house (2015-2022) by Matos Gameiro, the courtyard is also the element that, inserted within the volume of the house, requalifies the space and its experience, in the first case, or takes on the central and articulating role between volumes, in the second case. The house-patio type is identifiable in several houses built by Aires Mateus on the Alentejo coast. However, in the case of these architects' work, this analogy is subject to a process of formal and spatial transfiguration that intersects with other equally present references, such as the inhabited wall, the idea of ruin, etc. If in the house in Litoral Alentejano

(2000-2002) the courtyard appears as an (uninhabited) void of light and air in the centre of the house, in the house in Alvalade (1999) and later in its reinterpretation, the house in Melides I (2013-2019) the courtyards acquire another meaning - large voids inside labyrinthine structures, with autonomous value, interposed between interior and exterior spaces.

Gorkem Arslan Kilinc

Assistant Professor, Mimar Sinan Fine Arts University, Türkiye

Structural Design of Tall Mass Timber Buildings

Following the Industrial Revolution, the construction of tall buildings has surged as a means of utilizing dense urban lands more efficiently. Previously, iron/steel and reinforced concrete were the primary structural materials used in tall buildings. However, the use of engineered mass timber as a structural material for tall buildings is steadily increasing due to its numerous benefits compared to its steel or reinforced concrete counterparts. These benefits include a lower carbon footprint, biophilic effects on occupant well-being, high-quality products due to reduced on-site manufacturing and labor, and shorter construction periods.

Nevertheless, there are structural design considerations for tall mass timber buildings. This study first briefly examines the development of industrialized mass timber and investigates mass timber products. Mass timber encompasses a range of timber products, including glued laminated timber (GLT), cross-laminated timber (CLT), nail-laminated timber (NLT), dowel-laminated timber (DLT), laminated strand lumber (LSL), laminated veneer lumber (LVL), parallel strand lumber (PSL), and mass ply panel (MPP). It then explores the types of framing systems created with mass timber. These framing systems can be categorized according to their material usage as all-timber or hybrid systems and, according to load-bearing element usage, as post and beam, point-supported panels, wall and panel, and modular.

Later, structural design considerations for tall mass timber structures are explained under the headings of gravity system and lateral system considerations. After conducting case studies for the five tallest mass timber buildings worldwide, current approaches and research areas were identified for tall mass timber building structures.

Carlos Oliveira Augusto
Researcher, CITAD/Lusíada University, Portugal
&
Alberto Reaes Pinto
Director, CITAD/Lusíada University, Portugal

Prefabrication and the Sustainability of External Building Envelopes

The building construction industry is polluting and aggressive towards the environment and it is important that we realize that the negative environmental impact that this industry produces must be assessed and can be substantially reduced. According to Charles Kibert, the existing knowledge and the diagnosis of the construction industry in terms of environmental impacts show that there is an urgent need for change in order to achieve the goals of sustainability. In this sense, other construction models need to be found, with more productive technologies, less use of raw materials and more renewable materials. In the context of sustainable construction, buildings are responsible for more than 30 per cent of total carbon dioxide production during the construction, operation and maintenance phases and until the end of their life cycle, as well as high consumption of fossil fuels, high use of resources and excessive production of waste. In this context, it is essential to know how to manage the choice of materials and their application technologies in order to minimize the negative environmental impacts resulting from the construction industry's activities. This is why there is an urgent need to integrate this industry into the scope and principles of Sustainable Construction, which also requires a change in mentality and an integrated vision on the part of all those involved in the building construction process. This research paper focuses on the importance of the external (prefabricated) walls of buildings, which plays a very important role in protecting the interior space used from the aggression of external agents, climatic and otherwise. Their conception, design and construction technology, understood in the sense of holistic quality, must consider fundamental factors such as hydrothermal and acoustic comfort, health, energy savings and the use of renewable energies, reducing failures and maintenance costs, increasing the quality and life cycle of buildings. In addition, from a sustainable construction perspective, the reuse and recycling of the materials that make up these envelopes should be considered, aiming to reduce the mining of natural resources. This research considers two types of prefabricated exterior panels. The first,

already widely used in Portugal, is a heavy prefabrication process using large panels of concrete and brick. The second is a light prefabrication process, a research project that has already been tested and patented, using renewable materials such as straw and cork. The aim is to use lightweight exterior panels made from renewable materials that, despite their lightness, can maintain the same characteristics as heavy panels, particularly in terms of their high thermal inertia capacity. This is possible because the lightweight panels can guarantee a very significant thermal delay, which will be reflected in the increased energy efficiency, as well as reducing the power of the lifting, mobility and application systems and integrating them into a circular economy production process, generating new materials non-extractable from nature.

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Reciprocal Architecture: Observation Decks as *Non-Place* Places

In Marc Augé's seminal work "Non-Places: An Introduction to Supermodernity" (1995), the concept of *Non-Places* emerges as a theoretical framework to interpret contemporary culture within the context of supermodernity. Augé delineates supermodernity by its surplus of events, spatial abundance, and the individuation of references. Architecturally, this cultural paradigm materializes in *Non-Places* - spaces devoid of relational, historical, or identity-driven significance. Central to architectural theory is the discourse surrounding the tension between the construction of meaningful places and the cultural inclination toward generating *Non-Places*. This discourse has spurred diverse theoretical perspectives, including place-making, weak architecture, 'attunement,' and haptic architecture. This research delves into reciprocal architecture as a potential reconciliatory concept mediating between the realms of place and *Non-Place*.

A critical examination of Augé's conception of *Non-Places* incites a stimulating notion: within each *Non-Place* resides latent elements or vestiges of place, warranting recognition. Augé briefly acknowledges this intertwining of places and *Non-Places*, paving the way for the conceptualization of reciprocal architecture – a framework endeavoring to elucidate this intricate interplay. The trajectory of this study entails a meticulous investigation employing observation decks within towers as case studies. Towers conventionally serve as locational markers, establishing identity and stability. Conversely, observation decks exemplify *Non-Place* attributes, amplifying characteristics of superficiality, detachment, and self-referential experiences.

Three distinct tower exemplars – Guinigi Tower in Lucca, SkyTree Tower in Tokyo, and the addition to London's Tate Modern – serve as focal points for dissecting the intricate relationship between attributes of place and *Non-Place*. Through a thorough analysis of these observation decks, this paper aims to scrutinize and theorize reciprocal architecture – an approach that acknowledges *Non-Places* while integrating elements reminiscent of place. The study culminates by underscoring the intricate, multilayered relationship between places and *Non-Places*, emphasizing the significance of the touristic gaze and voyeuristic experiences in comprehending this dynamic interplay. In summary, this research delineates a coherent trajectory for investigating

reciprocal architecture as a dynamic process navigating the complexities inherent in contemporary reality.

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&

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Along the Terraqueous - New Art Communities as Cultural-Creative Models for the Recovery of the Former Colonies of the Land Reclamation

The presentation at the Athens Conference will explain the research project for the valorisation design of the reclamation landscape and rural architecture of the lower Friulian and Isonzo plains in Friuli Venezia Giulia (Italy). The research interprets the reclamation rural land as a great earth architecture, an architecture that has the scale of the territory. The project of this work of landscape architecture has the aim of encouraging a "first reuse" (temporary/permanent and tourist/artistic) through project proposals for reuse and redevelopment for the rural colonies (today largely abandoned) and then a time sequence of transformations of the hydraulic architectural heritage of the reclamation land according to an artistic-environmental key (landart), typical approach of an architecture that extends itself of the landscape.

The research prefigures, within a general master plan for the land reclamation park, specific valorization projects that develop between art, architecture and nature declined according to two intervention scales:

- on the architectural-artistic (local) scale they are aimed at the recovery and re-functionalisation of the housing of the former rural villages in new art colonies;
- at the territorial and landscape scale, that of the hydrographic palimpsest (strategic framework), are aimed at the construction of a territorial art park.

The aim is to make it a cultural-artistic engine and tourist attraction as part of a broader "system project" for that peculiar regional architectural and landscape heritage which is the so-called coast-lagoon terraqueous. The study area is a middle ground, which lies between the countryside and the lagoon, which extends between banks and salt marshes, for over 70 km, from the Tagliamento to the Isonzo, and can also be read as a work of art at the scale 1:100,000. This band between land and water, which the research deals with, is the northernmost

point of the Mediterranean. Environmental art is used as a theme for the architectural recovery of the former colonies; thus, it will become a sort of second reclamation campaign.

The research proposes a selection of former rural settlements to be transformed into art colonies. It is a significant selection limited only to those along the lagoon gutter, functional to revealing, precisely at the point of contact between the land of the countryside and the water of the lagoon, the matrices of this landscape (water and agriculture) and shows, or rather "stages the terraqueous landscape", which in turn constitutes the natural hidden subtheme for the architectural redevelopment of the art colonies, an artistic-landscape leitmotif that allows us to operate more easily in terms of artialisation (Roger, 2009) of the landscape.

Luis Carlos Bucha

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Unveiling Le Corbusier's Architectural Poetry: Weaving *La Main Ouverte* and *Le Signe du Taureau*

Le Corbusier (1887-1965) believed, according to Tim Benton, that the ability to create comes from an awareness of predestination and the understanding that the life of a prophet and poet is marked by suffering and rejection. This ultimately leads to enlightenment through the act of creation. At the same time, Le Corbusier's vision was dualistic from an early age, leading him to view Art as a realm beyond the limits of our physical, mortal condition. This reinforces the sense of predestination and the initiatory path to reach the Light. Le Corbusier, as an "architect-poet", would end up finding in the synthesis of mathematics and geometry 'the instrument' - or *l'outil*, referring to *Le poème de l'angle droit* (1955) - of the human intellect with which he can transcend and access the purest insight, beyond the elusive boundaries that insist on separating matter and spirit, despite the implications of our physical condition.

The development of the symbolic universe of *La main ouverte* coincides, according to Jamie Coll, with a 'conscious' phase in the development of the pictorial theme of the 'sign of the bull' (*signe du taureau*). Based on this observation, we understand that Le Corbusier's plastic work is grasped in a vast and complex mesh of reciprocal relationships. Nothing is linear or isolated; everything is interconnected in the "architect-poet's" '*recherche patiente*'. Le Corbusier embodies various syntheses of pictorial and symbolic themes in the manifestation of *Le poème de l'angle droit*.

The incessant fascination that motivated Le Corbusier's '*recherche patiente*', particularly about the Bull, ended up contaminating the architect's most diverse and multifaceted artistic expressions and incursions, denoting a deep and special meaning woven by symbolic and deeply personal imagery. *Le signe du taureau* is, in fact, *Le signe de Le Corbusier*, in that it naturally draws on the civilisational legacy of different cultures, manifesting itself in many religions, mythologies and legends, such as the famous myth of the Minotaur. Alongside this Western manifestation, the Bull assumes, further East, a position of sacredness, as recorded in the most diverse ancient civilisations and their respective religions, as is still the case in Hinduism. And it was precisely in Chandigarh, India, that Le Corbusier, in full contact with a

reality different from his own, reacted to the frugal way of life in a rural context, to a deep and natural coexistence with animals, and to the religious rituals that governed the routines of the population living in the different villages around the site defined for the new capital of Punjab.

In this paper, we propose to explore how the symbolic dimension of the Bull (*Taureau*) contributed to a synthesis of the prolific work, culminating in a powerful and fervent architectural poetry ingrained within the modern heritage of Chandigarh. Our approach seeks to move beyond the conventional understanding of Le Corbusier as the paradigmatic and central figure of Modern Architecture. Instead, we explore how he detached himself 'out of the centre', embracing the primordial complexities and natural peculiarities, as he manifested them in Chandigarh.

Michael Burt

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Multi-Modal Transportation Hub: Combined Air-Marine Terminals

The development characteristics of the urban habitat around the world (especially in the last few decades) have some disturbing and even alarming all-engulfing spatial, economical and eco-environmental features.

It is right to state that energy-generation-supply-usage, environmental quality deterioration, communication and transportation (of people and goods) are in the center of the evolving reality that is impacting and changing the human habitat.

These processes are gaining a growing impact on our **Time** usage and management and its economic evaluation, on our habitats **space** and land area availability, development priorities and their evolving economics and **cost**.

The pace of these developments and their social-environmental and economic pressure is rising dramatically and alarmingly, especially in proximity to mega-concentrations of human activity: the **mega-port cities** and the (mostly coastal) mega industrial infrastructure sprawls.

Air, Sea and Land Transportation Terminals have many common features: technological, managerial, economic. Physical joining and operationally combining the transportation terminals into a '**Multi-Modal Transportation Hub**' might save considerably **Space, time and Cost**.

The topic and the design concept of the 'Multi-Modal Transportation Hub' was presented in its most general terms in the IASS-2018' (M.I.T, Boston) conference, and later in the IASS-2023 symposium -conference in Melbourne, Australia, with a special attention to the Israeli Tel-Aviv Metropolitan area case study.

It was stated that '**Multi Modal Transportation Hub**' terminals are a growing and stark necessity in and around coastal metropolitan areas, and that because of the coastal expansion pressures of the urban habitat, the dramatically rising land real-estate costs and the associated growing negative impact on the eco-environmental conditions of the evolving urban fabric and its multitude of inhabitants.

The phenomena of the rising land real-estate costs, the declining eco-environmental conditions and the negative impact on people's free time at large and time lost on the roads, have a very large supporting literature.

The paper is going to expand on the marine option of the 'Multi-Modal transportation Hub' and its realization by presenting a conceptual framework and the supporting technologies, to be involved.

1. Development (in the coastal waters) of a combined multi-layered marine-land-air terminal, with the flight decks platforms rising to ~ 40÷80m above the water level.
2. The combined terminal has to be compact, multi-layered with shared work-service-storage infrastructures, with flight decks above the dock piers below, and connected by bridge avenues to the city frontage and its hinterland beyond.
3. A marine development 'fill material free' technology is suggested with '**Permeable Sponge Breakwaters**' '**Modular Tub-Platforms**' (floating or pile-supported) and '**Infinite Polyhedra Lattice Space frames**' to support the flight decks and contents of the air terminal.

All the technology constituents were widely researched and found to be economically attractive.

Ingrid Campo Ruiz

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**Architecture and Artificial Intelligence:
The Transformation of Public Space**

This research focuses on the influence of Artificial Intelligence (AI) on architecture and societal dynamics, assessing public spaces and their historical evolution as a case study. The analysis takes a Scandinavian perspective, drawing insights from countries with a longstanding commitment to social justice. I examine the social and political implications of AI on the built environment.

The focus of this research is the transformation of public spaces under AI-driven applications. AI is revolutionizing our interactions with public space. Combining historical analysis, archival data, and engagements with AI tools like ChatGPT, this study delves into the complex networks of relationships between AI, public space, and society. This approach aims to consider multiple perspectives to unravel the complexities of AI as a critical tool in our urban experiences.

The background of this analysis is based on the theoretical exploration of the political character of architecture. The study engages with the contributions of influential political theorists like Hannah Arendt, Manfredo Tafuri, Frederic Jameson, and Chantal Mouffe. I integrate their perspectives on the relevance of the public sphere for democratic societies, where public space can become a platform for critical discourse and engagement.

This theoretical framework is key for analyzing AI in the new spatial and societal transformations. Amidst increasingly digitalized built environments, I assess the role of AI in these environments. I analyze how AI alters the usage and perception of public spaces, impacting everything from social interactions to political engagement.

More specifically, this research departs from the context of public space in Scandinavian cities. In this context, public spaces have evolved from places for meetings to technologically integrated environments. The historical lens provides a more nuanced understanding of how public spaces are continuously adapting to societies and shaping societies in return.

I also address some of the ethical implications of AI and its use in public spaces. Not only privacy, surveillance, and accessibility, but AI's contribution to the establishment of asymmetrical relationships of power challenges democratic values. Existing inequalities may be perpetuated. I

analyze the potential for AI to create more inclusive and accessible built spaces.

In conclusion, this research presents a novel perspective on the role of AI in shaping architectural spaces and societies. By examining the interplay between AI, public spaces, and societal dynamics through a Scandinavian lens, the study presents both challenges and opportunities for architects, urban planners, and policymakers to underscore democratic values through public spaces in our increasingly digital world.

Richard Caratti-Zarytkiewicz

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Lighting Design: The Result of a Visual and Non-Visual Architectural Reflection

Lighting design as a visual and non-visual architectural reflection consists, *not in throwing light upon objects but in throwing light upon a subject*. Just like *The art of architecture studies not structure in itself, but the effect of structure on the human spirit*. it deals with our brain, with our mind and with our body.

In “Human-centric lighting: Myth, magic or metaphor?” published in *Lighting Research and Technology*, Houser et al, confirmed that the primary function of lighting design is the setting up of a reflection process about the visual and non-visual human functions within the architectural project in correspondence with the definition of the Integrative lighting CIE has proposed, underlining that:

-Under the visual point of view, lighting design is decisive in the attributive process of visual stimuli that brings to the assignment of meaning to objects, shapes, colours and environments.

-Under the non-visual point of view (also called Human Centric Lighting), it deals with the body clock which is primarily synchronized by the light-dark cycle, carrying on a chain of consequences on the sleep/wake pattern, on waste elimination, DNA replication and repair, metabolism, etc.

From both these points of view, the aim of lighting design is to build up and manage the conditions or the human fundamental wellbeing, just like architecture does.

Visual function, through every component of the visual perception process (either photobiological, neurobiological or socio-cultural), is a crossroad for the exercise of many important processes that determine our essential functions. Each of these processes mark a step in every move, every observation, contemplation, functional or emotional analysis, even shifty ones, we might apply on the environments we constantly meet or live in.

In this context lighting design deals with the *light gradients and shadows* on surfaces and volumes, organizing a pertinent visual landscape with a semantical and aesthetical significance. These gradients are distributed between the right proportion of focalization devoted to our foveal vision, and the variable values of visual uniformity which ultimate expression is when *Brightness or luminosity*

will appear as properties of the object itself. Eventually it is necessary to develop an approach of darkness, respectful of the night, should it be from a meditative or a point of view as much as from the point of view of the human sleep/wake function and the positioning of the biological clock.

Elzbieta Chrzanowska-Kluczevska

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**Poetics of Architecture: The Metaphor of Embodiment –
A Conceptual Borrowing from Verbal Language or an
Architectural Form of Existence?
A Case of Transdisciplinary Relationship between
Architecture and Linguistics**

This presentation aims to address – from a semiotic perspective – an aspect of the phenomenon called *poetics of architecture*. Verbal language, unavoidably, constitutes a primary metalanguage of the commentary on other semiotic systems, including architecture. Unsurprisingly, a dominant figure in the poetic renderings of architecture has been *metaphor*, in which a variety of source domains has been applied to describe the usual target domain, that is a building. Our concern is a prominent example of the metaphor A BUILDING IS A HUMAN BODY. This metaphor is topical for the present-day focus of cognitive studies on the embodiment of human conceptualization in general. Made famous owing to the influence of Vitruvius, with its roots in Greek antiquity and visualized in da Vinci's famous drawing of *The Vitruvian Man*, the metaphor of the alleged corporeality of architecture focuses on *anthropocentric*, *anthropomorphic* and *anthropometric* nature of architectural constructions. A variation of this metaphor shows in likening certain architectural elements to a human body, as for instance in perceiving a column as a human frame. In his *Phenomenology of the Visual Arts* (2009), Paul Crowther provides other bodily connotations triggered by various architectonic elements: COLUMNS ARE CITIZENS/ PROTECTORS, A TRIUMPHAL ARCH IS A VICTOR, A PILASTER IS A HUMAN BEING AS A PART OF THE UNIVERSE. The dynamic corporeality of Baroque and Rococo buildings brings some facial associations: A CHURCH FAÇADE IS THE FACE, THE BUILDING'S ENTRANCE IS THE MOUTH. Since the buildings are not meant for external examination only but primarily for the engagement of human beings with their interiors, a walk inside a building can also lead to identifying its internal organs: THE MAIN ALTAR IS THE HEART (liturgically) or THE HIGH ALTAR IS THE HEAD OF THE CHURCH'S INTERIOR (structurally). We may add to this list the 'reading' of the stupa or chorten in the Buddhist tradition as a metaphor/symbol of Buddha's body, whether physical or spiritual. In a somewhat extravagant treatise titled *Architectural Body* (2002), Arakawa and Madeline Gins propose a residential building called *Bioscleave House*,

which actually is a compound or blend described as an “organism-person-environment”, and where *the body* is no longer individual but rather communal, inextricably bound with the architectural space it inhabits and with the ‘surrounds’ that contain both of them.

The fact of this embodied cognition was voiced already by Heinrich Wölfflin (1886), claiming that “Our own bodily organization is the form through which we apprehend everything physical”, further elaborated by Maurice Merleau-Ponty (1961). The human penchant for personification seems to be corroborated nowadays by neuroscientific research as Joseph LeDoux (2015) points out that anthropomorphism may well be an innate feature of the human brain. The main query to be posed in our transdisciplinary discussion is whether all these bodily metaphors are solely conceptual borrowings imposed by verbal descriptions of architecture or whether they reflect genuine architectural forms of existence.

Jorge Correia

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Late Gothic Towers in Africa: Function and Rhetoric in Debate

While the colonial period in Africa has been object of sound studies for its 19th-and 20th-centuries political repercussions and built modern languages, the origins of the European presence in the continent have been less scrutinized. This paper wishes to shed light on one of the most symbolic manifestos of the early European occupation: the construction of late-medieval towers.

In 1415, Islamic Maghreb saw the arrival of apolitical, military and religious agent in the area: the Portuguese. The conquest of Ceuta began a settling process that, by the end of the 15th century, had created the so called 'Overseas Gharb' territory. Pursuing a late-medieval Reconquista beyond the Strait of Gibraltar, the sieging of Muslim cities would irreversibly influence their urban becoming. The appetite over northwest Africa was confirmed with the establishment of new foundations and castles in geostrategic points, a procedure shared by Castille towards the end of the 15th and early-16th century and pursued by the Portuguese along the Atlantic and Indian Ocean's coasts.

Military architecture was to become coherent with European culture at a time when urban concepts and practices were being renewed through the winds of early modernity. Although military structures fast grew to accommodate the latest artillery devices and design new proto-bastioned fortifications, medieval towers were still erected in several occupied cities or newly built castles. This paper explores the resonance of late-medieval European military architecture expression in Africa, offering a panorama of an early circulation of models prior to early-modernity in the continent.

Keep towers or donjons worked as architectural statements in their interaction with the inherited environment, contributing towards the creation of a new image of city. Historical review and field work provide a sample of ten structures that allow us to recover a history where function collided with rhetoric. Today, three still remain, three were transformed or are ruined, and four others can only be depicted through iconography. Dispersed in the Canary Islands, Ghana or Mozambique, but mainly concentrated in Morocco, they represent a time when medieval European languages spilled over the Mediterranean with Late-Gothic symbolic messages of power on outdated prismatic

defensive towers. Acting as performative devices between sea and land, they voluntarily challenged novel pyrobolic constructions. Rare examples of European medieval architecture beyond Europe, they foster a chronological revision of architecture as representation in the north-south political dialogue and further challenge conceptions of shared heritage nowadays.

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&

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Álvaro Siza's Tidal Pools and João Mendes Ribeiro's Chestnut House: Crossings with Japanese Architecture

The Tidal Pools in Leça da Palmeira (1960-1973), Portugal, is one of the most radical works by the Portuguese architect Álvaro Siza (b.1933). Siza opens-up a path between the rocks towards the sea, defining a descending sequence of semi-enclosed spaces. One is led from the sunlight into the darkness of the innermost spaces, meandering through a game of shadows, to find the light again. The spaces are defined by exposed concrete walls and wood salvaged from an old building, giving the whole a primeval and timeless quality. The essentiality of the work is in dialogue with the harsh conditions of its proximity to the sea. Underneath the apparent abstraction of the geometries, especially in the floor plan, is a meticulous relationship with the surrounding nature, especially the rocks, evidenced by the continuity between nature and architecture. The sea permeates the spaces – it is seen, heard, smelt and felt. As, indeed, does the wind. The recurring movement of the tide gives the Tidal pools a flow of life, inscribing it in a continuity of time.

The Chestnut House in Valeflor (2022), also in Portugal, demonstrates Portuguese architect João Mendes Ribeiro's (b.1960) long-standing interest in ephemeral architecture. Mendes Ribeiro nestles a small all-wood pavilion under the protective canopy of a chestnut tree. The original two-cube geometry of the volume is reshaped to accommodate the trunk and a large branch of the chestnut tree. The chestnut tree is part of the house. The dark tone of the pavilion's external wood contrasts with the light tone of the birch plywood used throughout the interior, from the walls to the ceiling and the built-in furniture. The spaces are defined by the gestures of those who inhabit them, as if the pavilion were a large piece of furniture. The living area flows outwards through a floor-to-ceiling window to the outdoor platform under the chestnut tree canopy, making it a transitional space between the interior of the pavilion and the landscape. The seasonal transformation of the chestnut tree inscribes the Chestnut House in a continuity of time. Like the Tidal Pools.

The Tidal Pools in Leça da Palmeira and the Chestnut House in Valeflor are about 60 years apart in terms of age and represent different approaches to architecture, albeit rooted in a sensitive and cultured understanding of the landscape. They are also different in terms of the programme, scale, form, and materials. Despite these differences, however, it is possible to identify a common relationship with Japanese architecture, where the deliberate incorporation of nature into the spaces is the most obvious nuance expressed, and the inscription of both works in an ever-renewed continuity of time is most subtle and compelling. Japanese architecture has been referenced by both Siza and Mendes Ribeiro.

This communication seeks to explore the dialogue between the Tidal Pools in Leça da Palmeira and the Chestnut House in Valeflor, on the one hand, and Japanese architecture, on the other, and contribute to the still poorly understood interrelationship between Portuguese and Japanese architecture.

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Investigating the Weaving Crafts of Kerala in Relation to its Applications in Space-Making

Weaving crafts have been incorporated in primitive huts and dwellings, whereas their contemporary applications are predominantly confined to the handicraft industry. They are rarely integrated with today's spaces, despite civilisational archetypes and potential to demonstrate the same. To bridge this gap, the research focuses on examining the weaving crafts of Kerala to identify their potential that can lead to foster cross-disciplinary collaborations between weaving crafts and space-making elements. Kerala has a landscape of ancient crafts firmly rooted in its cultural legacy. By combining these centuries-old skills with contemporary architecture, spaces can be infused with a distinct warmth and a deep sense of connection. This not only honours Kerala's rich cultural heritage but also builds a stronger connection between the past and the present, resulting in places that are culturally rich. Thus, rather than sacrificing tradition in search of modernity, including weaving techniques into architectural elements allows spaces to create a cultural identity while catering to sustainable designs. This research is deductive and exploratory in nature, case-study based, and employs a mixed-method approach. The weaving crafts of Kerala are thoroughly decoded based on various aspects, such as skills, knowledge, tools, technique, culture, and societal dynamics. In-depth conversations with expert craftspersons provide valuable insights and firsthand experiences. Furthermore, attentive observations allow a better understanding of the obstacles inherent in the weaving process. The research findings shed light on tangible factors like scalability, adaptability, sustainability, as well as intangible factors related to space. The findings demonstrate the possibility of integrating Kerala's traditional crafts in contemporary spaces with the help of experimental prototypes.

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The Conflicts and Continuities between Natural and Urban Environment in the 21st Century

Even though humanity has celebrated technological advancement due to its boast in the various sectors of society, the degradation occurring in nature has been growing more severe. With the rise of the Industrial Revolution, people have utilized the natural environment for the sake of themselves by modifying it according to their needs. Despite the glorification of these fast-paced advancements in the past and present, there is now a high possibility that built environment might stand as one of the significant causes of exacerbating environmental degradation; however, being deeply intertwined with nature, it is also the first party to experience the detrimental effects. Thus, it is no longer possible for architecture to exist without addressing immediate concerns and reassessing its relationship with nature. As a reaction to these changes, the precedent endeavors in the 19th and 20th centuries proposed new solutions to put end the duality occurred in natural and built environment ranging from the Garden City movement, Le Corbusier's Radiant City, and Frank Lloyd Wright's Broadacres City. Unfortunately, these endeavors however well intentional placed nature on the peripherals of the city solely for its aesthetical value and utilized in an inspirational manner. To put it another way, they fell short of addressing the real issues and led to persistence of them to this day. Moving on the 21st century, the relationship with nature and built environment is a far complex phenomenon. In the current century, the effects of such transformations ushered by technology, industrialization and urbanization have become palpable in people's lives, affecting a wide range of areas, including economic, and sociological and cultural dimensions. However, similar to the shortcomings occurred in the past, the overreliance on the mechanization, technology, and mass production ultimately change the urban fabric by dismissing nature as a fundamental part of the built environment. The consequences of this situation reverberated in the works of different figure, as one of them, Aidan White and Mark Whitehead (2013) stated that the consequences of global warming exacerbated by the duality between natural and built environment include unpredictable weather, rising sea levels, and extreme temperatures, affecting not only metropolitan areas but also coastal cities and stretching toward other centers without feasible solutions in "Cities, Urbanisation and Climate Change." Following

these concerns ever since the birth of industrialization, this study will trace the radical ontological shifts that occurred in the nature-urban axis up until the 21st century. Then, the study will conduct an in-depth analysis of the 21st century, during which several attempts to re-dialogue nature and urban architecture within the cities yielded different approaches such as biophilia, bio-mimicry, and bio-design. As these concepts have altered and changed the current trends of architecture and urbanization against the backdrop of present challenges, this study will ultimately identify and determine the current conflicts and continuities in nature and the urban environment in the 21st century.

Junpeng Fan

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**A Visual Cross-Platform Evaluation Platform for
Preservation and Revitalization of Ancient Villages
Application in Qinchuan Ancient Village, Zhejiang
Province**

The preservation and revitalization of traditional ancient villages have emerged as prominent topics within the realm of Chinese cultural heritage preservation. However, persistent challenges arise from the lack of spatial digital information and the complexities involved in sampling and analyzing these historical sites. Addressing how to effectively analyze the spatial elements of ancient villages for designer evaluation and research in preservation and revitalization to meet contemporary needs has become a research area.

This study outlines a three-step methodology. Firstly, in the data collection phase, 3D spatial information of ancient villages was efficiently obtained through the utilization of UAV (Unmanned Aerial Vehicle) technology. This method facilitated the acquisition of both the general layout and surrounding environment of the ancient villages. Furthermore, standardized street view sampling, combined with Computer Vision (CV) technology, enabled the analysis of spatial elements at the building scale. Subsequently, all street view elements underwent semantic segmentation and recognition, followed by the analysis of their spatial proportions.

Secondly, in the data analysis phase, Python was employed to automatically generate distribution charts based on the collected data. Additionally, Grasshopper (GH) was utilized for the preservation and revitalization of specific spaces by leveraging the obtained data to generate parameterized spatial interfaces. Finally, a user dashboard was developed for comparative analysis of data, charts, and newly generated interfaces within a spatial context.

Thirdly, in the presentation of data, street view elements were used as a case study. Spatial sampling and CV recognition of street view data were employed, and the obtained data were linked to the Rhinoceros-Grasshopper (GH)-Unity 3D cross-platform evaluation platform. This linkage enabled the editing of normal distribution ratio data of target elements, dynamically linking them to the dashboard and generating real-time parameterized street view facades.

This research integrates UAV 3D oblique imagery and Computer Vision (CV) techniques to replace traditional data collection methods,

thereby addressing challenges caused by insufficient data and providing a more economical and efficient solution. Furthermore, it establishes a linkage between Rhinoceros-Grasshopper (GH)-Unity 3D to create a novel cross-platform evaluation platform. This platform assists designers in researching and analyzing the spatial aspects of ancient villages and various street view elements, thereby facilitating the assessment of their impact on the preservation and revitalization of traditional ancient villages.

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&

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Equitable Access to the Built Environment for People with Disability

The overarching goal of the United Nations Convention on the Rights of Persons with Disabilities was to foster inclusivity in all aspects of living. Equitable access to the built environment is a fundamental part of this goal, but it is a long way from being reached. This research examines the barriers to inclusive access from two different viewpoints, namely that of the users and that of the construction practitioners. From the perspectives of people with disability when trying to visit public places, it considers the often-ignored and sometimes-conflicting constraints that different dimensions of disability place on the built environment. Next it examines the perspectives of people involved in the design, management, and operation of public buildings. Finally, it presents case study analysis of the accessibility of shops, libraries, and restaurants in New Zealand, and highlights accessible features that should be improved. The results show that accessibility remains limited for people with disability, particularly in small restaurants and shops, and that accessible features are often compromised by the everyday operations in a building. The attitude and awareness of building managers and employees is the biggest barrier to improving accessibility, pointing to a strong need for training programs. In addition, legislation on accessibility needs to be tightened to remove the many existing loopholes that allow suboptimal solutions. Finally, there is a critical need to involve people with disability early on in the building design process in order to move closer to genuinely inclusive access for everyone.

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The Appalachia Studio: A Case Study of Using Applied Research into African American History to Simulate and Create Economic Development

This proposal presents a case study of the Appalachia Studio, which grows from a second-year level class of architecture students at the University of Tennessee College of Architecture and Design. The purpose is to use the research methods, analytics, and resultant design to serve as a catalyst for the revitalization of underserved, traditionally minority districts in small towns in the East Tennessee region of the United States. The coursework originates through community participation that produces solutions challenging conventional thinking and racial stereotypes common to this region. A significant outcome is greater participation in the entire process and inclusion of our ideas into town planning decisions.

This class (13 students AR 272 course, spring semester, 2023/24) has the task of researching the district around McReynolds High School, an African American institution that burned by arson in 1965 during the height of the Civil Rights movement. McReynolds grew from a unique partnership where, at the urging of Booker T. Washington, the Rosenwald Foundation (a private company) matched the finances of public governments to build and support buildings, faculty salaries and curriculum development. Over 6,000 schools throughout the country; mostly in the American south resulted from this commitment. The success of this crucial philanthropic effort laid the foundation for the immense cultural contributions by African Americans in the last century, including the civil rights movement, arts, sciences, and literary achievements. Research clearly indicates that this vital history should be more apparent to the community as a whole and especially to the current leadership. These latent histories can and must become monetary drivers for economic development such as housing, greenways, and tourism.

The principal results of the Appalachia Studio are research data that the class interpreted into image sets, design solutions, illustrations and presentations that are positively swaying public opinions—especially as these opinions relate to America’s complex racial history. In addition, the work demonstrates how design proposals by architecture students from a major public university can be essential lucrative development. This work meets the goal of the Appalachia Studio by

using creative interventions to leverage our racial history into positive economic outcomes.

In conclusion, the success of this work and the research methods we are using will soon apply to other similar, small towns in the region. This spring, 2024, approximately 20-30,000 people visit the community for a food festival where the work of the Appalachia Studio will become part of the opening ceremonies and the exposure will visually augment and reinforce the importance of McReynolds a crucial moment in time and thereby link it to the larger discussion of Black History in America- which is certainly a relevant topic in today's world. The work of this paper will present two case studies; one a restaurant and the other will be a Museum of History for the region.

Ela Gungoren

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Istanbul Beyazıt Fire Tower: A Place of Remembrance and Continuity of Visual Imagery

This paper will try to analyze the Beyazıt Fire Tower's architectural features as well as the tower's interior decoration in order to shed light on the continuity of the visual imagery of the city of Constantinopolis/Istanbul from Rome, Byzance till the Ottomans. Today this tower is still one of the important landmarks of the old city. It is a well-known fact that in Istanbul's historic peninsula, there still are the remains of commemorative columns dating back to the Roman and Byzantine past of the city. Most of these columns still act as visual landmarks and in time were believed to have magical powers by the inhabitants of the city. The verticality as well as the morphological features of these monuments dispersed in the old city, was in a way reused in the architecture of the Beyazıt fire tower located near the Byzantine Forum called Tauri or Beyazıt meydanı. So that in terms of design instead of a radical rupture, a physical continuity persisted from the Byzantine legacy through to the Ottomans. The interior wall paintings within the monumental tower consisted of imaginary panoramic landscapes of Istanbul.

The tower is located within the confines of the Beyazıt complex, which itself is bordered by the Tauri forum dating back to the 4th c. BC. During the reign of Theodosius the Ist who ruled from 379 AD till 395 AD buildings such as basilicas, a church, a triumphal arch and cisterns were built. Along with the conquest of Constantinopolis in 1454, the region had been endowed with an administrative function thanks to the construction of the Old Ottoman Palace in 1454. Furthermore, the functions of education and worship appeared in the region with the construction of the Beyazıt Complex in 1505. With the proclamation of the Republic, the Rectorate and faculties of Istanbul University were established, and hence the educational function dominated in the area. The study prepared by the architect Turgut Cansever in 1960, shed light on the fact that the architectural components that make up Beyazıt square have continued their physical existence and functions since 1453. The buildings that make up Beyazıt square and their functions are shaped according to the needs of the citizens and have persistent historical continuity.

Designed and implemented in 1828 by Senekerim Balyan, the tower's height surpassed by far the old commemorative columns. It

also endorsed a new function as its name underlines. Because of the wooden residential architecture and earthquakes, fires occurred in Istanbul frequently. It should be noted that even if a new era started with the Ottoman presence, although new functions appeared, the plastic elements shaping the city did not change in shape as this tower proves. It is believed furthermore that on the spot the tower was implemented stood a column dedicated to Theodosius the Ist. which was destroyed during an earthquake in 1509.

Robert Hahn

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How Archaic Architects and their Architectural Technologies Contributed to the Origins of Philosophy/Cosmology in Greece

Vitruvius reports that the ancient Ionic architects used a proportional technique for building their monumental stone temples. They proposed a *module* in terms of which all the other architectural elements were scaled as multiples or submultiples. A technique is always an application that is enveloped by a theory; the theory was modular thinking. When Anaximander identifies the shape and size of the earth with a 3x1 column drum, and measures out the distances to the fiery wheels of stars, moon, and sun in earthly, that is, column drum proportions, he not only adopted a modular technique but moreover adopted the architects' module. Perhaps he did so because he came to envision the cosmos as cosmic architecture, an architecture built in stages. Anaximander proposed distances to the stars, moon, and sun that have long been a matter of debate. At the same time, there has been much debate about the archaic rule of proportion connecting column diameter with column height because no archaic Ionic column survives intact. However, according to Homer and Hesiod, the "column" had symbolic meaning separating earth and the heaven, and for Pindar joining them. I propose to show how the architect's rules of proportion, symbolically connecting or separating earth and heaven, clarify and resolve Anaximander's cosmic numbers.

In major studies on *Anaximander and the Architects* in 2001, 2003 (*Anaximander in Context*), and again in 2010 (*Archaeology and the Origins of Philosophy*), I explored the likely overlap of the archaic architects and their techniques in applied geometry with the surviving doxographical reports on Anaximander (and Thales). In 2007, Ohnesorg published a new excavation report based on the archaic temple of Artemis at Ephesus that challenged Wesenberg's 1983 thesis, based on Vitruvius, about the Ionic theory of proportions, which I had also relied on. More recently still (2020), Ohnesorg and Lambrinoudakis published an excavation report on the temple of Demeter at Sangri on Naxos, also from the 6th century BCE. These newest results invite us to think again about the archaic Ionic rules of proportion that Coulton had argued (*Ancient Greek Architects at Work*, 1977) were almost certainly discussed in the prose treatises of Theodoros of Samos, and Chersiphron and Metagenes of Ephesus, works to which Vitruvius had access directly or

indirectly. Moreover, the architects' prose treatises were contemporaneous with Anaximander's prose treatise, and perhaps motivated him. Does the newest research alter the story?

According to Aristotle, Anaximander held that the earth remains aloft in the center of the cosmos held up by nothing. Might the architect's techniques of *anathyrôsis* and *empolion*, for keeping the drum motionless in the column, have contributed to his thinking? Aristotle reports that the earliest philosophers were modular thinkers; they held that there was a single underlying substance – Thales' water, Anaximenes' air, Heraclitus' fire, Anaximander's *apeiron* – of which all other appearances were only modifications because the underlying unity never perished. Was the modular thinking that marks the origins of philosophy/cosmology inspired by the architects and their technologies?

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&

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A Multi-Variable Analysis for Heating Energy Performance and Thermal Comfort in Residential Buildings

Following industry and transportation in Turkey, the residential sector emerges as the third-largest contributor to carbon emissions, accounting for 9% of emissions, 20% of total end-use energy, and 21% of electricity consumption. According to the current TurkStat statistics, there are more than 10 million buildings in Turkey as of October 2023, with over 100,000 new constructions annually while approximately 90% of the existing building stock is residential buildings with 24 million households. Given these figures, residential buildings hold significant potential in combatting climate change and aligning with both national and EU carbon neutrality objectives.

According to IEA World Energy Statistics of 2021, space heating represents the largest portion of final energy consumption in dwellings, comprising 48% of total energy consumption in Turkish households in 2018. Emphasized within Turkey's Building Energy Performance regulations and TS825 Standard, external thermal insulation stands out as a prevalent strategy to ensure indoor thermal comfort conditions, mitigate thermal bridging and reduce heat loss through the building envelope. Consequently, the thermo-physical characteristics of building components play a decisive role in governing heat transfer across the building envelope. Additionally, potential sources of heat loss such as cracks, holes, deformations, and joints in building openings and through the porosity of the fabric can exacerbate unintentional heat loss through air infiltration.

In this study, our objective was to evaluate the heating energy performance of a typical gated community located in tempered-humid region in Turkey, while integrating occupant perceptions and preferences for thermal comfort. Within this framework, we analyzed a total of 24 different options, considering three design variables: the thermal insulation material for external walls (XPS, EPS, rock wool) and its thickness (ranging from 3 cm to 10 cm), the infiltration rate of the building envelope (ranging from 0.8 ac/h to 0.4 ac/h), and the indoor set-point temperatures for heating period (ranging from 20°C to 23°C). The impact of these variables on heating, cooling and primary energy

consumption, CO₂ emissions, investment pay-back period, and long-term global costs (including initial investment and operational expenses) were assessed utilizing the DesignBuilder building energy simulation (BES) tool and a BES-based parametric analysis. Additionally, we computed the indoor thermal conditions for both the reference case and optimal solutions. The comfort outputs, evaluated based on PMV - PPD criteria, were subsequently assessed according to the thermal comfort standards by ASHRAE-55:2017 and EN 16798-1:2019.

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A Sustainable Approach for the Rehabilitation of the Existing Housing in Cairo

Rehabilitation of houses buildings is one of the current trends in the field of the built environment, either by developing of the existing buildings with maintaining of the same function or by changing the functions of the buildings that by reusing the building in another function. The practices that take place during the rehabilitation processes should be planned carefully. The research works on utilizing the principles of sustainability in the rehabilitation processes of the existing houses buildings. The city of Cairo has many old buildings, with a number of buildings that need to be rehabilitated, in the current period there are many renovation, development and rehabilitation processes of a large number of housing buildings in this city without considering of the sustainability principles. The research problem is the lack of interest in integrating sustainable aspects and principles in the rehabilitation of houses in the city of Cairo. The research will include a theoretical study on the rehabilitation processes of the houses buildings with considering the sustainability requirements, the research also will obtain and analyse the most important international case studies in this field. This research will study and analyze the methods and the processes to development and rehabilitate of the existing houses buildings and the used construction techniques to rehabilitate these buildings to be adequately sustainable buildings, considering the sustainable methods and tools used in the processes that to conclude the required conceptual framework. The scope of the research is the rehabilitation processes of houses buildings matching with the rules of sustainability and the application is limited by the house's buildings in the city of Cairo.

The research methods will be integrating between qualitative and quantitative research, which is mixed methods research, the data collection tools will be interviews, observation, and questionnaire. The research will conclude a conceptual framework that provides an approach for the rehabilitation of the existing housing in Cairo city matching with the international trends and sustainability requirements.

The research aims at submitting a conceptual framework for the sustainable rehabilitation of the existing housing in Cairo city.

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Local and Afrofuturist Thinking in the Decolonisation Process

In recent years, there has been an increasing focus in the domains of architecture and design on decolonisation, Afrofuturism, and critical thinking as tools for evaluating and re-imagining the constructed surroundings of African societies and their diasporas. This paper presents a research proposal on architecture that seeks the intersection of these concepts, specifically in the context of contemporary architectural discourse in Angola. To this end, we aim to merge two horizons or perspectives on a shared question: How do we see black communities in the present and in the future?

To answer this question or create syntheses about it, we will take a journey through the fictional universe of two different authors, the African American writer Octavia Butler (1947-2006), with her book *Kindred* (1979) and the Angolan writer Ondjaki (b. 1977), with his book *Os Transparentes* (2012). Through the visionary work of Afrofuturist author Octavia Butler, the intention is to apply a methodology of critical distance, viewing the African continent in general through the lens of utopian thinking about Africa produced outside of Africa, with an emphasis on the possibility of the contribution of Afrofuturism, presenting a disruptive vision of the future, with different possibilities and alternatives for the black individual. It will be relevant to address the importance of decolonisation in this process, to retell and redefine the colonised countries' own histories, as well as to rescue and preserve their cultures and traditions, and re-evaluate the dominant Western knowledge systems. On the other hand, it is crucial to examine Angolan literary perspectives, as they present a personal and genuine depiction of Angolan reality. By engaging with these sources, we sought to deepen our understanding of the local context and its architectural implications. In this light, we will be able to recognize the urban scenarios that define the city of Luanda. In *Os Transparentes*, the city is portrayed as a character in a raw and realistic manner, revealing the intricacies and obstacles confronted by the populace in contemporary Angolan cities.

The aim is to establish an intercultural dialogue between the contributions of local thought (Angolan literature) and distanced thought (American Afrofuturist literature). By integrating the perspectives of Butler and Ondjaki, it is possible to explore the potential of a critical

and contemporary architectural approach that embraces both Afrofuturist thought and local context. This integration allows us to gain a deeper understanding of the impact of colonisation, the importance of decolonisation and the possibilities of reimagining architecture in Angola through a lens that is simultaneously disruptive to Eurocentrism, technologically up-to-date and based on local realities. Investigating the potential applications of Afrofuturism and critical thinking in architectural practices in Angola is a noteworthy endeavor. In doing so, it aims to contribute to the development of a built environment that is more responsive to the cultural expressions and diverse identities of its inhabitants. This research is particularly significant because of the increasing relevance of such topics in architectural discourse as societies across the globe strive to create more equitable and culturally sensitive societies.

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The First Urban Planning, Amarna

We could say that Amarna (Egypt, 1.346 B.C) is the first urban design in history, because the city is created with a specific and ordered design and plan.

The first urban settlements of men were the transition from nomadic to sedentary society. They are produced when agriculture and livestock begin to develop, to obtain sustenance and food. A simple group of houses, next to a fertile area, created villages or towns. These communities grow and expand the territory, but not in an orderly way.

Amarna is the first city designed and planned according to certain uses, it was sized according to the population it will house, and it is located in a special place, chosen for this purpose. It is the birth of the "*The Horizon of the Aten*", or Tell el Amarna.

During the 18th Dynasty, Egypt experienced the greatest period of splendor in its history. Having freed itself from the rule of the Hyksos, it became a military power by dominating the bordering territories. The highest levels are reached in writing, literature, mathematics, medicine, astronomy, architecture and in all culture. Amenhotep IV, was the 10th pharaoh of 18th Dynasty (New Kingdom). Son of Amenhotep III, (1.353-1.336 B.C) he promoted radical transformations in Egyptian society, making the god Aten the only deity of the official cult. He is the first historically documented religious reformer to impose monotheism on polytheism. His period not only involved changes in the religious sphere, but also philosophical, political and artistic reforms. It was a cultural and ideological change that shook the entire Egyptian society.

In year 5 of his reign, Akhenaten began the construction of a city in a completely desert area (440 Ha), and was organized with a reticular pattern, according to the uses of buildings and neighborhoods. Is a pioneer urban planning, which lays the foundations for later urban developments in history. Was designed with an orthogonal geometric layout, with fifteen large steles being carved to mark the limits. It was built in record time, 4 years. The module and standardized housing are also innovative, creating a model that is repeated, to form collective housing areas. It is the first housing study in history.

Upon the death of the king, 10 years after the completion of the construction of Amarna, the city was deserted.

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Landscape, Technique, Community: Integrating Waste Treatment Infrastructures in Fragile Landscape Contexts

This contribution proposes a reflection on the theme of architectural integration in sensitive and fragile landscapes of waste treatment infrastructures. This term refers to any civil plant functional to the treatment of civil wastewater and solid waste produced in inhabited settlements, such as water-treatment plants, landfills, and waste-to-energy plants. Literature and scientific debate on the theme of infrastructure integration in landscape highlight a general lack of appropriateness and compatibility with contexts, due to a predominantly technical approach and design vision that focus on functional resolution while neglecting crucial aspects such as landscape protection and the relationship between infrastructure and society.

This study starts with some preliminary questions. Through which spatial and formal configurations can architectural design promote a renewed form of integration between infrastructure, landscape, and community? Can we consider as an appropriate answer design strategies that confer a renewed civic role to sanitary infrastructures? Recent notable cases highlight four trajectories for a different design approach to the problem. In this essay, these trajectories are discussed by comparing notable case studies and tested in a specific case study: our project for the wastewater treatment plant in Buggerru, a small town in the south of Sardinia. Characterized by remarkable natural landscape qualities and marked by interrupted mining activity, Buggerru presents a condition of fragility and environmental vulnerability that is interpreted as a favourable opportunity. The new plant in Buggerru is considered not only a technological facility, but also a new urban architecture capable of engaging with the pre-existing historical mining environment, integrating into the natural context, and enhancing the community's life.

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“For the Greater Spiritual Delight”: Dialogues between Le Corbusier and Álvaro Siza in Firminy and Rennes

In a conversation with the Portuguese architect Álvaro Siza (b. 1933), Portuguese Cardinal José Tolentino Mendonça (b. 1965) asked him which religious buildings he would consider as standout buildings. Siza answered: “two buildings by Le Corbusier: Ronchamp and La Tourette.”

In 1954, Eugène Claudius-Petit (1907-1989), the new mayor of Firminy, France, commissioned Le Corbusier (1887-1965) to renovate the city center and create a new district: Firminy-Vert. Le Corbusier was invited by Abbé Roger Tardy (1928-2022) in 1961 to design the church that would complete the Firminy-Vert project. In Le Corbusier's plan, the new church, the Église Saint-Pierre, would be the nexus between the new cultural and sports facilities and a new residential area. Delayed by Le Corbusier's sudden death in 1965, the church was completed decades later in 2006 by the French architect José Oubrerie (1932-2024), a Le Corbusier former collaborator. The Church of Saint-Pierre has since been secularised, but it still exudes Le Corbusier's powerful intentions.

In 2015, the foundation stone was laid for the parish church of Saint-Jacques-de-la-Lande in Rennes, France. This church, the first to be built in Brittany in the 21st century, was designed by Álvaro Siza. The scale of Siza's work was dictated by the site, a residential block on the outskirts of Rennes. Integration into the urban fabric and orientation in accordance with an old, ruined chapel determined the specific design guidance. Siza witnessed the construction of his design and its inauguration in 2018.

The conversation between Tolentino de Mendonça and Siza is recorded in a co-authored the 2022 book, *The Question About God is the Inability to Explain: A Conversation About Art, Architecture, and Spirituality*. The first part of the title is a phrase uttered by Siza. Siza, an agnostic, acknowledges the role of spirituality in his life. In Le Corbusier's life, no religious affiliation was recognized. However, Le Corbusier, as Siza points out, was the creator of two of the most

exemplary religious buildings of the last 100 years. One could perhaps add a third, the Église Saint-Pierre. In a letter to Abbé Tardy in January 1968, seven months before his death, Le Corbusier wrote about his future church in Firminy: “[a]nd I cannot imagine now anything but the commencement of construction, for the greater delight of all of us.”

Saint-Pierre, in Firminy-Vert, and the church of Saint-Jacques-de-la-Lande, in Rennes, are challenging for their corporeal qualities, perhaps even their anthropomorphia, revealing a desire to constantly question the meaning of architecture and the spiritual dimension that can permeate it. That spiritual dimension is a necessary condition for the full realisation of an empathetic relationship between humankind and the built world. Today, that empathetic relationship is even more relevant.

This paper proposes possible dialogues between the architectural anatomies of the churches of Saint-Pierre and Saint-Jacques-de-la-Lande; between the ways they relate to “their” cities, Firminy and Rennes; and between Le Corbusier and Álvaro Siza’s notions of spirituality. In the hope that the mysteries of architecture and the “inability to explain” will lead to “greater delight”.

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Investigating the Concept of Microarchitecture through the Temple Chariots of Kalinga Region

This paper investigates the temple chariots of Kalinga Region, and examines the concept of microarchitecture through these mobile, sacred structures. After considering varied perspectives on Microarchitecture, Bucher's definition (1976) has been adopted for this research. It implies that microarchitecture is a concept that reflects the design principles of larger structures in the making of smaller-scale structures, imitating stylistic expressions in miniature forms. The temple chariots, known as "Rathas, Ther, or Viman," have been realized in the Kalinga region in very distinct and specific forms, owing to the region's history, culture, and architecture.

The chariots, which are used in religious processions and festivals, are intricately crafted. It is observed and inferred that they display substantial similarities with that of the Kalinga temple architecture. Therefore, this study intends to document and analyze the temple chariots of the Kalinga region, contextualized within the renowned Kalinga temple architecture (7th - 13th Century), building on - historical references, cultural significance, and craftsmanship. Using a case study-based approach, this deductive research aims to enquire and reveal the system of making seen within these chariots, shedding light on the close connection between architecture, religion, and community participation in their creation. A thorough analysis of the underlying principles that guide the making of these chariots and their geometry, proportions, symbolism, and ornamentation highlights an interconnection with the Kalinga temple architecture. The intended outcome of this research is to create a repository of temple chariots of the Kalinga region, showcasing their unique features, crafts, and deep ties to the region's temple architecture.

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Daylight Performance in Atriums with Skylight: Comfort and Net Zero Energy Strategy for Cultural Institutions

An atrium with or without skylight is a traditional and universal feature of architecture, as it provides homogeneous illumination across the horizontal planes to bring daylight into a multi-storied building. With rising concerns about energy conservation, indoor daylight performance and the well-being of the occupants, the atrium design of a multi-storied building is imperative. Daylight contributes to saving the energy consumption of a building since it is one of the most valuable natural resources available for architects to design a comfortable indoor space. Most city inhabitants spend over 90% of their time in indoor spaces. As the foundation of our circadian rhythms and a natural source of vitamin D, sunlight is vital to our health. Therefore, research on optimizing daylight performance will benefit the ecological environment, reduce energy use, and improve human health. The ascending demand for institutional buildings due to the overpopulation of Bangladesh leads to excessive energy consumption in the building sector. This study investigates the daylight performance of an atrium with skylight in an institutional building (cultural institute), aiming to develop a strategy for achieving occupant comfort and net zero energy consumption. The institutional building (Chhayanaut Shongshkriti Bhobon), constructed with reinforced concrete (RCC) and exposed brick, is located in Dhanmondi, Dhaka, Bangladesh. Through simulation analysis, empirical data collection, and design optimization, the study assesses the effectiveness of daylighting strategies in enhancing visual comfort, reducing energy demand, and minimizing reliance on artificial lighting. Along with the simulation process by Rhino 7 and daylight analysis with the support of ClimateStudio and Grasshopper, the optimization process was carried out with TT TOOLBOX, GALAPAGOS, Wallacei and Octopus and Design Explorer

to assess the optimum result of the daylight performance throughout the atrium. The study met LEED daylight evaluation criteria of at least 55% (sDA) and an acceptable annual sunlight exposer (ASe) of no more than 10%. Finally, the net zero energy analysis was conducted, to reduce the EUI value and turn it into zero energy building. The results were validated through comparisons with field data, base case and updated model. The research shows that an enormous amount of energy can be saved by the incorporation of photovoltaic panels (PV) over the years. The findings underscore the importance of integrating skylights into atrium design to optimize daylight penetration while mitigating solar heat gain. The proposed strategy seeks to strike a balance between daylighting performance and energy efficiency, contributing to the sustainability goals of institutional buildings that can be followed as strategies for designing sustainable institutional buildings in tropical climates.

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Copy and Invention: An «Exotic» Mimesis and Diegesis at the Colonial Section of 1940's Portuguese World's Historical Exhibition

From the end of the 18th Century to today, the organisation of both National and International Exhibitions enabled the main public to get in touch with the modern scientific, technological and anthropological conquests.

The objective of those exhibitions surpassed the display of industrial and scientific products around Berlin's Conference (1884-85) and the *Scramble for Africa*, by the World's leading powers. Since that period, the nouvelle Colonial Exhibitions gained traction, becoming political, economic and social displays of propaganda.

Spreading across various continents, the Colonial Displays aimed to copy or mimic, in closed spaces, not only the natural aspects of the occupied territories, like fauna and flora, but also to recreate the Native Peoples' settlements, main architectural features and ways of living.

At the same time, the Colonial Exhibitions would also hold an inventive aspect into them, a diegetic dimension, where the occupying powers would project its own cultural aspects into the occupied culture as a way of proto-assimilation and creation of a narrative justifying their presence and territorial occupation, against the tide of a world in deep change.

In Portugal, with the constitution of *Estado Novo* regime (1933) and the beginning of World War II (1939-45), it became also important to exhale an idea of peace and concord of the Portuguese Empire, an oasis during tumultuous and dark times.

With the motto "1140-1640-1940", the Double Centenary Celebrations - 800 years of the Portuguese Foundation; 300 years of the Independency Restoration and the acclamation of the *Estado Novo* - were the background for an exhibition that would prevail into people's minds.

From June 23rd to December 2nd, 1940, the *Exposição Histórica do Mundo Português* (Portuguese World's Historical Exhibition) took place in Belém, Lisboa. The exhibition comprised five thematic sections, two of which were assigned to Ethnographic displays, one dedicated to the Mainland and Insular Territories and the other to the Overseas Territories.

Both sections were spaces where copy and invention intertwined with the celebratory and magic ambience. Day after day, people working as figurants “gave life” to the sections, recreating ways of living and traditional activities.

The *Secção Colonial* (Colonial Section) was established in the Colonial Garden grounds, a pre-existing area where different botanical specimens of the Empire were displayed. The artist’s team was asked to produce a qualified architectural space, where visitors could learn about Overseas Territories and their Native Populations and to create an innovative and symbolic display, where a new form of Portuguese Modern Art – that merged metropolitan and colonial aspects – could materialise. There, copy and invention, mimesis and diegesis would exist side by side.

After 84 years, small fractions of that reality still exist scattered by the nowadays *Jardim Botânico Tropical* (Tropical Botanic Garden). The need to save their existence, as significant pieces for the comprehension of the Portuguese Overseas Architecture after 1940’s, makes their memory and legacy preservation necessary.

It is the moment to fuse time, space, personas and architecture, in order to create a new narrative about this important fragment of Portuguese Architectural Historiography.

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Railway Architecture, Typological Analysis and Recycling Strategies

Since the second half of the 19th century, Italy has seen an era of industrial development and large public works, which includes the heritage of architecture and infrastructure relating to thousands of kilometers of railways which once formed a capillary network of connections between cities and smaller towns.

Over time, a phenomenon of progressive decommissioning has taken place which has affected secondary communication routes, replaced by road transport which is more advantageous to maintain. In the Emilia-Romagna region there are 1140.80 km of disused railway lines, including the case of Modena-Ferrara, here there is a large heritage of buildings and infrastructural lines, which have become industrial archeology in conditions of disuse. Buildings significant for their location and shape, on which research has been based with the aim of creating a systematic map of the architectural assets of stations and toll booths, and developing regeneration strategies.

The architectures that have become waste material are subject to transformations and progressive absorption into the surrounding natural and anthropic landscape, but their condition of freedom makes them capable of temporarily hosting new uses, and subsequently architectural transformation interventions. Strategies that will allow the recycling of buildings for cultural activities and tourism, enhancing liveability and interest in the smaller areas of the region.

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Prefabricated Exterior Panels with Bio-Based Materials for Buildings in Low-Density Regions

The construction industry plays an important role in the national and international economy in terms of the investment it mobilises, its share of GDP and its contribution to gross fixed capital formation. It should also be emphasised the volume of employment it absorbs and the importance it has in the interrelationships and spillovers with other industries. However, the construction industry is polluting and aggressive towards the environment, and it is important to recognise that the negative impact of this industry, together with the parallel industries that produce a wide variety of materials, must be assessed and can be substantially reduced.

It is therefore essential and urgent to reduce the negative impact of the activities of the construction industry. Hence the need to bring it within the scope and principles of sustainable construction.

The initial aim of this ongoing research was to find an alternative solution, now tested in the laboratory and patented, for the construction of small buildings using renewable, non-polluting, often local materials and mechanised technologies that are simple to use but effective, with the aim of reducing construction times.

The solution presented, consisting of prefabricated panels/modules, uses renewable, low-carbon materials, both in its structure, made of reinforced solid wood hoops, and in the filling of this structure, filled with straw bales or cork granules, and other materials such as hemp or coconut fibres can also be used.

In a second phase of this research, a new project is underway to develop a prefabricated exterior wall module using materials derived from fungal mycelium as a filler. The composite base of fungal mycelium is a viable alternative to conventional oil-based thermal and acoustic insulation due to its insulating properties. The substrates used can be biological, such as agricultural waste, resulting in a biomaterial, or in combination with other substrates, organic or not, such as waste from other sources.

The materials used in the two thermal insulation solutions that make up the panels are essential for the building envelope to achieve

high energy efficiency. These materials have been carefully selected for their ability to reduce embodied energy during the exploration, manufacture and transport phases, and for their ability to be reused and recycled at the end of the life cycle of the buildings in which they are integrated. As such, they form part of a circular economy, generating new materials that are not extracted from nature with increasingly limited resources, in the face of the global population growth trend.

Ignacio Sanfeliu

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New Softball Sports Equipment in Barcelona

The new Softbol equipment, in Barcelona commissioned from the town hall to me in the 2012 in the first fase and a second phase in 2017, in the Olympic area of Barcelona in the mountain of Montjuic, was an opportunity to redefine the characteristics of this kind of equipment.

The design criteria of this equipment have been: The use of the site's characteristics, the easy communication with the current Baseball, the proper visibility of the field by the public, essentially familiar, the introduction of innovative elements that add value to the installation, and a certain visibility and quality of the installation that does not disregard the magnificent environment, in the most important concentration of sports facilities throughout the country. Other criteria have been: The use of land as a consequence of the construction of the field, the possibility of organizing future events of a certain magnitude, the economy of the media, this new softball field is located next to the current Baseball Olympic Field to the east, under the Olympic Ring, in the mountain of Montjuic.

Vincenzo Sapienza

Full Professor, University of Catania, Italy

Irene di Stefano

Engineer, University of Catania, Italy

&

Gianluca Rodono

Researcher, University of Catania, Italy

Analysis and Design of Corrugated Cardboard Components for Temporary Architecture

In this work, that we want to show you, was exploring the possibility to employ a new constructive system for architectural purpose, who is based on the use of corrugated cardboard envelop panels. Especially, this system is applied to recover existing buildings. This study is part of a research on sustainable and eco-friendly architecture solutions that can match to many needs of the potential users. It has been developed by the authors, from some time by now. Specifically, in the paper the application to the case study of Archicart technology, which has been invented few years ago by an innovative Start Up, in partnership with the University of Catania, will be presented. The lightness of the base component, that is a panel in corrugated cardboard, guarantee an easy transportability; moreover, the use of prefabricated products, ready for a dry set-up allow to control the building time. In addition, Archicart guarantees the reduction of the construction intrusiveness in the site and the reversibility of the operation. So, those features make the constructive system suitable to historic architectures refurbishment, which are in fragile or difficult-to-access places. The chosen case study is a traditional, ruined building in the Aeolian islands. In particular, it is located on Filicudi, one of the most charming isle of the Aeolian archipelago.

Rui Seco

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Public Dwelling and City Design: Learning from Recent Portuguese Developments

Housing scarcity has been a rising problem in Portuguese major cities in recent years. The increasing cost of dwelling, both in rental and in purchase real estate, are intensifying gentrification, as inhabitants and newcomers find it even more difficult to afford living in central areas, namely in Lisbon and Oporto (Ferrão, 2023).

This phenomenon is internationally widespread. Attractive cities throughout the world have been doomed by the financialization of housing, boosted by the competition for investment between cities and public policies like golden visa and tax facilities (Whitehead, Scanlon and Lunde, 2014).

Some public policies are attempting to develop solutions to this problem, facing its important social and urban implications.

In Portugal, one of the main responses is the promotion by the public authorities of the construction of new housing buildings or complexes. From 2021, public departments such as IHRU and SRU launched design competitions to select the projects and base the procurement of several new developments, located mainly in the Lisbon and Setúbal peninsula area.

The construction, largely with European funding, is expected by the end of 2026. Although not having yet being built, many of these future housing facilities have already been divulged through exhibitions - 'Lisboa imagina a nova Bauhaus Europeia' ('Lisbon imagines the New European Bauhaus'); 'Habitar Lisboa: Uma perspetiva arquitetónica sobre uma crise contemporânea' ('Inhabiting Lisbon: An architectural perspective on a contemporary crisis') - and editions - particularly, the now over a dozen publications on architectural design competitions edited by Ordem dos Arquitectos (the Portuguese Architects' Association).

This information allows already a reflection on this response in terms of methodologies, urban solutions, and design.

There are notable similarities in scale, layout, construction techniques and even architectonic image between several of these projected housing developments that enhance the opportunity of this analysis, from an architectural perspective.

What city will result from the selected projects? Is the scale of intervention adequate? In addition to providing housing, do the obtained architectural solutions create urban spaces for social interaction

and relation? Besides housing, are different uses included? How do they relate to the surrounding city? Do they provide structural and spatial continuity? Are they detached or segregated? What are the similarities and differences with other housing programs used in the past? Have past experiences been taken as a reference for improving the results obtained in the urban fabric and the appropriation by new residents?

All these questions are important in the context of a perspective shift, from an approach in which construction and urban expansion should be contained, by reutilization and rehabilitation, to a response to housing needs through the provision of new construction and urban development.

Fatma Sedes

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Ezgi Yılmaz

Istanbul Aydın University, Türkiye

&

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Waterside Mansion of Esmâ Sultan within the Scope of Contemporary Restoration Work

Historical buildings, which are important sources about the history, architectural features, social and cultural characteristics of the period in which they lived, have document value today by establishing a bridge between the past and the future. Restoration is one of the most basic areas of action of the conservation discipline, which aims to protect historical buildings and ensure cultural continuity and transfer them to future generations. Historical buildings have been designed and functioned in accordance with the requirements of the period in which they were built, and they were not used in line with the changing living standards and needs over time, and were condemned to disappear due to unconsciousness, adverse environmental conditions and neglect.

Restoration procedures to be applied to these structures should be carried out by following the correct methods and by studies carried out by experts. In addition, the new functions to be added to historical buildings should be determined by adhering to the architectural, social and cultural characteristics of the building and taking into account environmental factors. These structures, which have been re-functionalized after the carefully applied restoration works, provide cultural and historical sustainability by revealing the urban identity of their period. In this context, after the restoration process, the current state of Esmâ Sultan mansion will be discussed. It is necessary to determine the necessary elements for the restoration processes of historical buildings, the criteria and decisions of intervention, and the characteristics of the structure before the intervention. In this direction, by considering the contemporary restoration and re-functioning works applied to the Esmâ Sultan mansion, it will be revealed to what extent the original qualities and features of the building are preserved, and whether the differences that are not unique to the structure brought by the new function are compatible with the character of the previous building.

Guliz Tasdemir

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&

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A Review of a Design Process in the Creative Industry: Enerjisa Case, Ankara

This paper aims to investigate the design process starting from scratch and explore the sectional interface of managing the dynamics between the clients and designers. Ankara Headquarters Office of Enerjisa, a power distribution and retail company, is selected as a case study for evaluating the design process carried out by an international creative agency, I-AM. The project started with the problem of senior users visiting customer relations office about billing problems. Thus, the office is closely linked with negative conditions and crises that link the office environment with negative experiences. The project aims to turn the overall experience into a positive one.

The project lasted seventeen weeks including planning, idea generation, concept design, design embodiment, and detailing. The project process starts with a series of presentations and a workshop composed of inspirational/informative materials. In the idea generation stage, the design team explored potential layout ideas, some of which were eliminated due to their feasibility. Once the promising initial design has matured, the project continues with the detailing of the experience areas.

In this research, qualitative methodology was used to analyze the spatial context. The data of this study include multiple sets of sources, written, visual, and audio. Therefore, to construct the research and investigate the built environment, data collection was selected thoroughly. For analysis, a semi-structured interview was planned and transcribed. In addition, the inspirational/informative materials were shared with the researchers. The design group in the exploration, generation, and implementation phases specifically created this set of materials for this project. In this research, the design process is examined in three major stages in parallel with the project phases including the implementation process.

In conclusion, the design phase was enriched with multiple inspirational materials provided by the design agency. From the designers' perspective, the design for this conventional area was held within an innovative approach. Strategically, the conventional space is

converted into a learning space by evoking the idea of awareness of energy use. The spatiality and its' components were implemented without any limitations. As a result, the study focused on the 'inspirational' set of materials for expanding the insights into the communication between clients and designers with an innovative methodology.

Maria Tavares

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Rule or Exception? The Social Role of the Art in the Residential Architecture of the 1950s: The Case of Olivais-Norte in Lisbon

In the 1950s, Portugal was experiencing the appeal of integrating these three arts: architecture, painting, and sculpture. While this integration was understandable in public buildings or housing for high-income families, it was less common in affordable housing. However, a law introduced by the Municipality of Lisbon made it a condition for all new buildings to include a work of art. The young architects assigned to this major operation saw this obligation as an opportunity as well as a social commitment.

During the same decade, studies revealed that 10 percent of the Portuguese population lived in Lisbon, and more than 43,000 people, mostly from rural areas in search of better living conditions, lived in slums, sub-rented, or poor housing. To solve this issue, the Municipality of Lisbon established an organization to conduct a comprehensive urban planning study that included the construction of large public housing units and the integration of various types of housing.

This paper focuses strictly on the Olivais-Norte neighbourhood and its modern, international expression in a complex designed in the spirit of the Athens Charter, where multifamily housing played a decisive role and presented itself as an effective solution to the problems of affordable housing. The conventional street has been replaced by an extensive circulation network, which is hierarchized between car and pedestrian traffic. Pedestrians play a crucial role in the plan, with their paths extending throughout the free and landscaped space resulting from the isolated implantation of blocks and towers.

The creation of public art is a prominent feature of this urban area, with architects and artists working together to create a modern neighbourhood for residents. We believe it was and is a dialogue architecture that is easily accepted by inhabitants.

This article aims to explore the narrative created between architects and artists in a large public housing complex. The focus is on improving community life and creating quality living spaces that meet the practical needs of their inhabitants, in which art plays an important social role.

Mark Trieglaff
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Universal Design in a Small and Large Park Setting

The United States has a federal law, the Americans with Disabilities Act (ADA) to increase opportunities by removing accessibility barriers for people with disabilities. While this is a huge step forward in providing inclusive opportunities for people with disabilities. While access has increased with the ADA, it has always been noted that the ADA Accessibility Guidelines provided a minimum standard for accessibility. This means the standards could be better and help more with disabilities to access various places and venues.

One means of increasing accessibility is incorporate Universal Design Principles in the removal of accessibility barriers. In this presentation the incorporation of Universal Design Principles will be show in the development of a smaller park and a larger park. The presentation will provide information on the development of the parks, the different areas that incorporated Universal Design and some of the challenges.

Park setting can be more challenging for access as you must deal with terrain issues, provide proper slopes for drainage of rain and the provide features easily accessible by people with various types of disabilities. Many other design elements have to be incorporate into the various play features and elements in the park. For example, playground surfaces must be designed for a child to fall of a play element but have a ground soft enough for the impact not to hurt the child. However, these surfaces must also provide an accessible surface that someone using a wheelchair can easily go over without much effort. Or parents of a child with autism that will run away from the parents or supervisor with them. The use of landscaping and berms to provide a visually pleasing look to the park but also a barrier to prevent children from running out into the nearby street.

A general overview of the Universal Design Principles will be provided but more detailed and specific examples will be provided in each of the parks highlighting how they have a higher level of accessibility using these Principles.

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&

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The Symbiosis of Space and Story: Semiotic Insights into J.R.R. Tolkien's Middle Earth

The examination of architectural dynamics in the domain of literature constitutes a nuanced and impactful scholarly endeavor, bearing significant implications for the construction of narratives. In this realm, the fantasy genre emerges as especially amenable to such explorations, given its inherent ability to facilitate elaborate spatial constructs. This paper specifically directs its focus towards the oeuvre of J.R.R. Tolkien, recognizing the author's adept utilization of architectural elements and spatial configurations as dynamic and versatile tools in the creative process. This academic investigation critically examines the intricate semiotic interplay inherent in the spatial and architectural narration within J.R.R. Tolkien's seminal opus, "The Hobbit" and its sequel "The Lord of the Rings". The selection of these literary works is underpinned by their conspicuous stature within the fantasy literature genre, coupled with their pioneering role in advancing the art of world-building. Serving as a fertile ground for scholarly inquiry, they function as a complex canvas that facilitates a nuanced exploration of the intricate connections between literature and architecture, scrutinized through the theoretical lens of symbolism and architectural semiotics. Positioned at the convergence of rigorous literary analysis and architectural discourse, the overarching objective of this study is to explicate the profound interrelationships and reciprocal influences characterizing the dynamic interplay between narrative constructs and the physical environments they inhabit. The investigative process commences with an examination of chosen novels, during which distinct spatial configurations are identified, systematically categorized, and subjected to rigorous analysis. These spaces, whether occurring naturally or crafted, are regarded as semantic entities within the narrative, each bearing a unique ensemble of symbols, meanings, and cultural references. The study meticulously frames its scope within the intersecting realms of architecture and literary narratives, emphasizing the reciprocal influence between the two domains. By intricately intertwining semiotic analyses of both spatial and architectural elements, this paper aims to contribute to a holistic

understanding of the role played by built environments in literature, transcending their utilitarian functions to become potent signifiers carrying cultural, emotional, and thematic significance. In embarking on this exploration, the paper not only enriches our comprehension of Tolkien's literary works but also contributes substantively to the broader discourse surrounding the symbiotic relationship between literature and architecture. Through a meticulous examination of the interplay within the novels, this research seeks to bring to light the profound ways in which narratives are constructed and communicated through the intentional utilization of space and architecture within the literary realm.

Vittoria Umani

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From Collective Creativity to the Authorial Project: Exploring the Architectural Process of Lawrence Halprin

This paper wishes to explore the idea of participation, its role and its potential, within an authorial architectural design process, particularly through an exploration of the works of architect Lawrence Halprin. This research is part of a bigger investigation that finds the American landscape architect protagonist of the study.

In defining his RSVP Cycles, moments of collective participation in his personal design methodology, in the form of workshops, Halprin identifies four “building blocks” on which he bases his approach: Resources, Scores, Valuation and Performance.

“Scores”, are the means by which groups conduct their activities, they are the ways of activating the process. In their simplest form, “Scores” are instructions addressed to someone to perform an activity. The word comes from the world of music, where scores are the composer’s instructions to the musician, where in more classical compositions musical notes, keys and staves are used but, in more modern ones, where the compositions are more open, other notational graphic devices are also used.

Scores are also related to the world of dance and choreography. Anna Halprin, contemporary dancer and choreographer, alongside his husband Lawrence, investigated in both their collaborative and independent projects, the dimensions of inhabiting and choreographing spaces of the city, community areas and natural settings, with the intention of exploring how people can and do creatively occupy different architectural environments. As Anna stated in one of her university courses: “Space is to design what movement is to dance or sound is to music. Like movement space is something that we use every day in all our activities... walking down the street, opening a door, laying down, sitting up etc. Our task in this course is to first become consciously aware of space so that we may experiment with ways of controlling it”.

Just like in Anna’s choreographies, Lawrence’s architectural and landscape designs also wish to control space in a way that invites participation through flexibility or the design of an “open score” that offers the opportunity to citizens to appropriate spaces, objects, or structures according to their changing needs and desires.

In this sense, the idea of participation is not limited to the pre-construction phase of the design but is extended beyond its completion. It is therefore not enough that at the end of a collective creative process a compromise is achieved that results in a design solution that satisfies the greatest number of issues related to the initial program. It is important that the decision-making process results in a design with a strong character and expressive language. Sharing the decision-making moment, therefore, cannot result in a project that is weak in terms of recognizability and identity, but rather, should succeed in emphasizing issues related to the place and the participants. Indeed, in Lawrence Halprin's case, creative collective processes do not inhibit his personal architectural language but rather, allow for the right balance between personal poetics, the specificity of individual projects in responding to a problem, and their relationship to place, landscape, city and its inhabitants.

Rogério Paulo Vieira de Almeida
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Rehashing Times & Forms: Graphic Meditations on Drawing, Urban Form

The paper's starting point is to show how drawing – in its graphic and artistic possibilities – can be used within the context of research on urban morphology during the Early Modern period in Portugal. It's presented as a graphic-epistemological meditation crossing empirical data with analytical-conceptual ones. Historical cartography, chronologies, historical events and morphological reconstructions are the basis for the analysis, thus leading to exploring drawings freed from cartographic conventions and used to unveil less obvious aspects of urban shapes and transformations.

A few statements acted as guiding aphorisms:

All art is a dialogue. So is all interest in the past [...] In the end, it can be only a dialogue in the present about the present.

Moses Finley

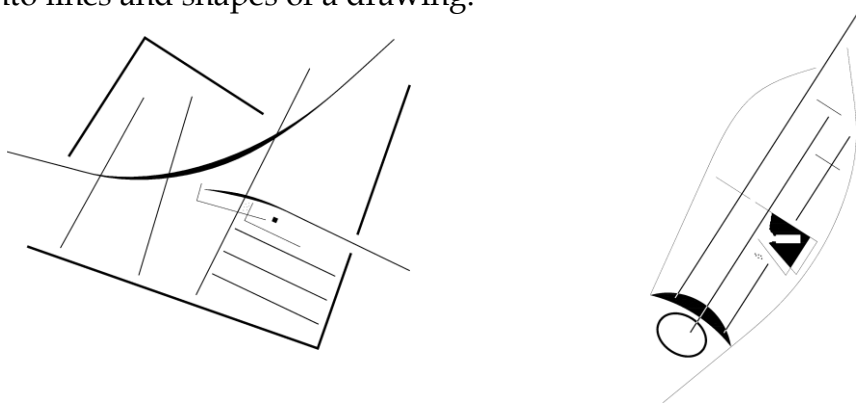
Art does not reproduce the visible, rather, it makes it visible.

Paul Klee

Analogies and relations between different objects [are] essential to sharpen our eye for a formal connection [...] a perspicuous presentation [...] of fundamental importance [...] [that] designates the way we see things and how we gather and group facts. [I]t cuts short and moves on to clarify that understanding is about nothing else but just the connections.

Ludwig Wittgenstein

In the end, and by merging perception, science, imagination, and art, the aim is a reflection – paraphrasing Pierre Boulez – on how to transmute the forces, facts and forms acting all over in time on a town into lines and shapes of a drawing.



Donia Zhang

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**Courtyard Architecture:
Along the Silk Roads, around the World**

This presentation will discuss the proposed 6-volume edited book series on courtyard architecture in 48 countries around the world, with building functions ranging from residential, educational, medical, imperial, civil, religious, among others, courtyards. The study of different courtyard building types provides greater insights on the variety of the use and benefits of courtyards in different settings, although the main study is on residential courtyards. The courtyard house is one of the oldest dwelling types, spanning at least 5,000 years, and occurring in distinctive forms in many parts of the world across climates and cultures. Past research findings show that the courtyard house is environmentally friendly and energy efficient, and that courtyard housing creates healthier and happier communities than other housing forms such as tower blocks, especially for children and the elderly. However, previous books on courtyard housing often have a limited scope, not on a global scale, and there is still a lack of knowledge on how the courtyard facilitates environmental, economic, social, and cultural benefits for the humanity. The book aims to fill the gap and promote the courtyard concept in contemporary architecture and urbanism, to preserve the common heritage of humanity, and to design and develop new courtyard buildings for social health and happiness. The book also aims to explore the architectural-cultural interactions and influences among the nations along the ancient and the New Silk Roads, which has occurred not only in Eurasia, but also Africa, Latin America, the Caribbean, and other places around the world.

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