RR

Report delle attività di ricerca

CLIMATE CHANGE AND CULTURAL HERITAGE

IV INTERNATIONAL FORUM ON ARCHITECTURE AND URBANISM
22 - 23 June 2023

a cura di
Ornella Zerlenga, Danila Jacazzi, Luigi Corniello

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CLIMATE CHANGE AND CULTURAL HERITAGE

IV International Forum on Architecture and Urbanism

edited by Ornella Zerlenga, Danila Jacazzi, Luigi Corniello

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Department of Architecture and Industrial Design

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22 - 23 June 2023

Università degli Studi della Campania *Luigi Vanvitelli*

Dipartimento di Architettura e Disegno Industriale

RR
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CLIMATE CHANGE AND CULTURAL HERITAGE

Proceeding of IV International Forum on Architecture and Urbanism
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Preface

IFAU CONFERENCE CASERTA 2023

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The IFAU23 Conference entitled Climate Change and Cultural Heritage promotes studies and research on the past, present and future of architecture, the city and the landscape. Climate Change that afflicts our Planet is a worldwide problem for humanity and affects the practices of knowledge, management and protection of cultural heritage. Cultural Heritage includes the interdisciplinary themes of possible questions related, in one, to the Heritage as a set of multiple categories, from artifact to natural. The IFAU23 Conference proposes a large discussion on cultural heritage as a "place of Life" for all living beings on the Planet as well as on best practices related to heritage as a "place of experience" for the knowledge and protection of the built and natural environment, material and immaterial, tangible and intangible.

The contributions will be included in the three topics to follow (architecture; city and landscape; living environments) to activate an interdisciplinary discussion on the topics and criticalities of the current relationship between Climate Change and Cultural Heritage in the opinion that scientific knowledge must always accompany the progressive impact on the life of communities.

TOPICS

T1: Architecture

Communication, Documentation, Drawing, Graphics, Heritage, History of architecture, History of the City, Images, Knowledge, Remote Sensing, Representation, Restoration, Survey, Territory, BIM, H-BIM.

T2: City and Landscape

Architectural Project, Environment, Landscape, Landscape Project, Law, Planning, Resilience, Small Municipalities, Technology, Territory, Urban Planning, GIS.

T3: Living Environments

Acoustics, Building, Building Energy Systems, Building Physics, Design, Energetics, Fashion, Interiors, Jewellery, Lighting, Materials, Structures, AI, VR.

Prof. Arch. Cherubino Gambardella,
Nuovo Rettorato di Caserta,
ph. Mario Ferrara.

The IFAU23 Conference Climate Change and Cultural Heritage registered a great participation of the scientific and social community on the topic of the Conference. After the editions in Tirana (Albania) in 2017, Pescara (Italy) in 2018 and Tirana (Albania) in 2019, the IFAU Conference is coming to the University of Campania "Luigi Vanvitelli" in the June 2023, hosted in the prestigious venue of the New Rector's Palace in Caserta.

The IFAU23 Scientific Committee includes professors from the Universities of Austria, Croatia, France, Germany, Greece, Italy, Kosovo, Montenegro, North Macedonia, Portugal, Serbia, Slovenia, Spain, Turkey, USA.

We received 165 papers from Albania, Algeria, Argentina, Brazil, China, France, Germany, Italy, Iran, Kosovo, North Macedonia, Nigeria, Portugal, Czech Republic, Spain, USA. The authors and co-authors who participated in the call are 329 from prestigious Universities, Departments and Research Centres in the world.

All contributions were subjected to double blind peer review by the 61 members of the IFAU23 Scientific Committee.

Introduction

NEW HI-TECH MATERIAL FOR ENERGY SYSTEM BUILDINGS, EVOLUTION OR REVOLUTION?

Paul-Louis Meunier
ESTP-Paris, France

Climate change affects our lifestyle within the building. Nowadays the frontier between lodging, working, entertaining building occupancy is blurry and each of us is supposed to spend more than 75% time within "the structure". Get more with less... The Energy generation and consumption needs to solve this equation.
The Building Industry needs to grasp the innovation the 20th century physics gave birth: among them specific material for new smart energy generation, smart energy saving, smart energy consumption bringing percentage of kWh to the party. The scope of these new materials is very wide as it needs to cover existing buildings (including Historical ones) and new buildings. Although other industries took advantage of the 20th century Physics (computer - consumer electronics- aircraft - telecom...), Building Industry have been slightly tiptoeing into the Hi-Tech available materials, it is time to review these "Hi-Tech material Energy" technologies which will serve Architects and Engineers to match the climate urgency with the new home behavior lifestyle.
So far, the material for buildings and civil engineering structure are quite traditional being made of stone, wood, natural fibers, concrete, iron, plastic ... all of them being used to shelter the occupants or giving easy access to former clumsy locations. Let's review the material product Physics brought to the party introducing a new paradigm: the citizen (inhabitant) generates an amount of energy which can be immediately consumed or stored.

PHOTOVOLTAIC Effect

Let's start by the Photovoltaic effect. Nested within the semi-conductor revolution, the first photovoltaic wafers were made in the 1960's, first in the USA. It was seen as a hi-tech renewable energy system, mounted on the house roof with the relevant azimuth angle according to the location. The theoretical efficiency of the photovoltaic effect was about 15%, due to intrinsic material semiconductor gap of the doping atoms, stemming on mid-century Physics. In the years 2010, when the industry mastered the LCD flat display, concomitant manufacturing applications brought the cost of photovoltaic panel at an affordable level. In the 2020's the nominal efficiency of the panel stills remains quite low, even though latest researchers published an efficiency of 29% [1].
This breakthrough endeavors the furnishing of roof top by panels transforming part of the average sun beam energy 1000kWh/year for one m2 [2]. We will extend the photovoltaic effect to other parts of building, trying to harvest the "photon energy" as much as possible and explore the potential efficiency progress.

LASER DIODE Effect

Within the same physics domain, we can quote the outstanding progress of micro/nano LASER products- Light Emittive Diode - LED. By hi-tech doping process (MOCVD) [3] the mm2 component provides the same lumen number as former traditional lamp bulb (cm3 volume size) with less than 1% power [4] in the 2025. It revolutionizes the copper wiring as very limited power being necessary, the electrical network requires less volumetric material, sparing up to 75%.
On top of these important power reduction, the LED can be used as a Data transmission Li-Fi [5] being an upgraded version of Wi-Fi internet connectivity making the uses of radio waves obsolete, then protecting the health of inhabitants who could be radio-wave sensitive. It is another revolution as the useful light to bring light into rooms, these photons are used to transport data.

Keywords:
Piezoelectricity
Pyroelectricity
Phase Change Material
Energy on demand.

PIEZOELECTRIC effect

THE PRINCIPLE OF PIEZOELECTRIC EFFECT. The piezoelectric effect is based on the deformation of a crystal caused by a pressure. The geometry of the atoms becomes unbalanced, and a "dipole" is created which will generate electrical charges. Some material presents this property naturally: Quartz, Rochelle salt, human bones... or artificially created by genius scientists: Polyvinylidene Fluoride, Lithium Niobate, Zinc Oxide and LZT (Lead Zirconate titanate) ceramics. This property was discovered by J.&P. Curie in 1880 [6] and started its industrial wide development mid twentieth century with micro components in military, medical and consumer electronics industries thanks to intensive R&D on the material synthesis. In early 2010's, first building piezo pavement were exhibited for "energy [7] walking/stepping" creation. What is the most common behavior of a human being on the ground? ... a person in motion pressure on the ground. The piezoelectric can be useful along the persons circulation within a building, a flat, a path. Walking in a confined space is not random, there is "preferred" track used by each user. Some spots are necessarily bottleneck in our days: the doors of our homes, the threshold of our kitchens or offices. If the floor is furnished with Piezoelectric wafers, then each footstep will apply a pressure and generate energy thanks the piezoelectric effect. We can, as a first approximation, consider a step per second for a person. Then the energy can be assimilated as a power in watt (joule pers second). The available amount ranges from 100mW to 300mW per step, per block. This energy is generated only at moving sequence, giving the enormous advantage to be consumed immediately for lighting as example. Generating energy when we need strikes one's mind as a common sense of generating energy when we need it. On the other hand, generating energy at the right spot and the right place would economize huge amounts of materials. For a standard one level house, the copper material spared reaches several dizain kg (50-100kg), we could reduce it by ten times using small sections of cables directly between the generators and the device saving tons of raw copper digging and carbon foot print.

PYROELECTRIC effect

Some materials change their polarization upon temperature change. Thus, taking advantage of an inside and outside temperature discrepancy, the Pyroelectric system [8] can generate energy. This is a passive system as long as we do not have influence on the temperature gradient. The use of pyroelectric effect is quite "unexpected" as it strews within the lifestyle through structure, furniture, and garments... Each energy chunk contributes to the local energy generation fitting the new behavior of inhabitants.

PHASE CHANGE Material

Probably the "eldest "physical effect as aged as the planet exist, as it is intrinsic to our atmosphere conditions. This consists in transforming the material in different phase: solid-liquid-gas. For the building industry, few materials exist which capture the heat of external wall by solid - liquid phase transition and while the process the temperature remains stable. As an example, encapsulated paraffin wax [9] can monitor inside temperature within a range of 21°C to 26°C according to the thickness and wall structure. Then air-conditioned systems can be implemented as a "supplementary "air cooling only. The PCM introduction saves kW/h of energy and refrains from rejecting warm air outside the building if using heat pumps. The PCM material can be lodged either in the outside wall (Regular Building – Complying with City regulation) or inside wall for historical city zone.

Other breakthrough effects
We will touch on Electrochromic effect, fluorescence and rheofluid effects which can bring new thinking and realization to Architects.
At last, examples illustrating the use of these "new technologies" will be given. They will be picked up among new buildings architecture, existing retrofitting building and Historical site.

DIGITAL Technologies
The spreading of digital technologies in the Building Industry started more than thirty years ago. Architecture and computer Sciences started simulation and sketch in the 1990's, with the finite element calculation breakthrough. The base of the present rich Architecture software simulation was launched! Just a short fundamental notice: the eve of quantum computing [10] with power of calculations and storage capacity multiplied by millions will lead the Architecture to a new area.

CONCLUSION
Architects and Physicist/Engineer started a relationship which will benefit to the 8 billion inhabitants of Planet Earth. Matching the planet resources, by putting brain and beauty in the Building material, structure, organization, and usage is our challenge thanks to Physics of material.
Likely IFAU is contributing to this NEW THINKING which will hopefully spread over the five continents some will evolve, other ones will revolutionize.

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Deepest thanks to Rector Andrea Maliqari of UPT and his team for weaving and working with ESTP-Paris over new technologies Programs (of which ERASMUS).
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Gratitude to Mrs. Sophie-Caroline Huisman International Director of ESTP for nurturing international university exchanges.

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[8] (www.chemeurope.com)
[9] (www.cstb.fr)
[10] (QUEST 2023- Paris Conference)

CLIMATE CHANGE IN GRASSLAND DEGRADATION AND THE ROLE OF THE CONSUMER

Fabrizio Canonico
Director of
the Nature Reserve
of Cratere degli
Astroni, Italy

Cashmere is made from a natural fiber produced by a goat. Hircus goats, the most valuable, produce the finest fiber. This breed of goat is raised by nomadic herders between Mongolia, south-western China, Iran, Tibet, northern India and Afghanistan. Mongolia today is the main producer. Demand for the fiber has boomed in recent years: in 2002 Mongolia exported $45.2 million worth of cashmere, which rose to $390 in 2018. This has meant increasing the number of goats and areas for breeding. Hircus goats must always live with a certain number of sheep, to protect the soil: the goats pull grass from the root, the sheep massage the soil. Their cohabitation protects the soil from depletion and desertification, achieving a perfect balance. The overall herd size has also grown, doubling to about 70 million animals since 2000 and exceeding the land's carrying capacity in some areas. From 1940 to 2014, average annual temperatures increased by 2.07°C, more than double the global average. Ten of the hottest years on record have occurred since 1997, while precipitation has decreased and seasonal weather patterns have shifted. This has exacerbated soil erosion, which has begun to alter vegetation, a trend that is projected to intensify in the first half of the 21st century. Twelve percent of rivers and 21 percent of lakes have dried up completely. Higher temperatures and less rain have resulted in a drying trend, affecting pastures (70 % of pasture-land is degraded) and water sources. The combination of these factors, overgrazing and climate change, is disastrous. Huge sandstorms are hitting the southern Gobi province, darkening the sky. Winters are increasingly harsh and stormy as in the winter of 2017-18, which killed hundreds of thousands of grazing animals, threatening the incomes of nomadic families raising cashmere goats in the grasslands of Mongolia. Beijing is now permanently subject to Gobi sandstorms, affecting 15 provincial-level regions and 409 million people. During sandstorms, cities became paralyzed and schools were closed. The sand has reached as far as the West Coast of the United States in the city of Seattle. To mitigate the impact of the goats, companies are beginning to buy only certified sustainable cashmere this ensures a better sale price to the shepherds and sustainable management from the ecosystems. Therefore, the role of the consumer becomes crucial, when we have to buy only sustainable certified cashmere item. In this regard, you can consult the platform created by the UNDP (UN) www.sustainablecash-mereplatform.com

Keywords:
Climate change
Cashmere
Gobi
Overgrazing.

Contributions

SEAMLESS DIGITAL TECHNOLOGY AS EXPERIENTIAL AND NARRATIVE AMPLIFICATION OF THE CULTURAL HERITAGE: THE CASE STUDY OF THE HOUSE MUSEUM

ID001

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In the last years, the advanced integration of digital technologies for communication and fruition of cultural heritage represents an open field of discussion among the perspectives of online exhibitions and the yearning for authenticity, linked to onsite visit. In this direction, the seamless design of digital technologies integrated within the cultural spaces (Claissie et al., 2019) responds to the need to develop hybrid cultural experiences, in which the decrease of physical component of the technological device is accompanied by an amplification of the emotional and material dimension of the artworks on display and of the spaces. The use of mixed reality technologies (Milgram et al., 1994) expresses potentiality in the design of phygital spaces, as simultaneous dialectic between physical space and digital devices (Borsotti, 2022), in an environment naturalized by the absence of a cumbersome digital technology, in a general need for digital detox. The topic refers to the house museums, clashing the needs of preservation and evocative capacity of such spaces (Lindsay, 2019), glimpses of socio-cultural and territorial identity. The revitalisation of house museums moves in the perspective, through reuse in the cultural circuit, of staging the continuation between intimate domestic dimension and cultural contents. The case studies express the different levels of integration between technology, space and visitors: from the immersive storytelling by Peter Greenway at the Reggia of Venaria to the sensitive period rooms of the Markiezenhof. The intervention aims to underline how the seamless digital systems for the historical buildings can be declined in the reification of intangible heritage, reconnecting with the past and present life.

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Keywords:
Seamless design
Phygital spaces
Hybrid cultural experiences
Interactive storytelling
Sensitive environments.

THE IMAGE OF MONTERUSC(I)ELLO BETWEEN DREAM AND REALITY

ID003

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The goal of this contribution is to investigate through the cognitive action of the drawing discipline the project of Monteruscello neighborhood, the New Town imagined by Agostino Renna (1937-1988) as an emergency solution to the phenomenon of bradyseism that affected Pozzuoli in the 1980s. The diligence to narrate this project in images starts from the Renna's 'dream' to defining a new urban pole configured as a real foundation city with a layered character conceived in parts, each carefully chosen from references of the city of history and antiquity (Hippodamean layout; archaeological pre-existence of the âme de la cité), as well as of the modern city conceived by rationalist architects ('mosaic tile' structure; ribbon city). Next, it will be highlighted how, in accordance with Aldo Rossi, architecture in itself represents only one aspect of a complex reality but, at the same time, also one of the most concrete (if grasped) points of view with which to ground ethical design processes. In today's wide-ranging debate on cultural heritage as a place of life for all living beings on the Planet and on good practices related to heritage as a place of experience for the knowledge and protection of the built environment, the examination of Monteruscello will conclude with an illustration of Agro-City (MAC), a European Union-funded project aimed at promoting innovative ideas and actions to foster the sustainable development of urban areas. An overall narrative that denotes how coexistence in our cities (dynamic complexity) cannot be remedied simply with technique, but it becomes essential to integrate it with the action of 'dwelling' (movement) addressed by thinkers such as Emmanuel Lévinas and Michel de Certeau.

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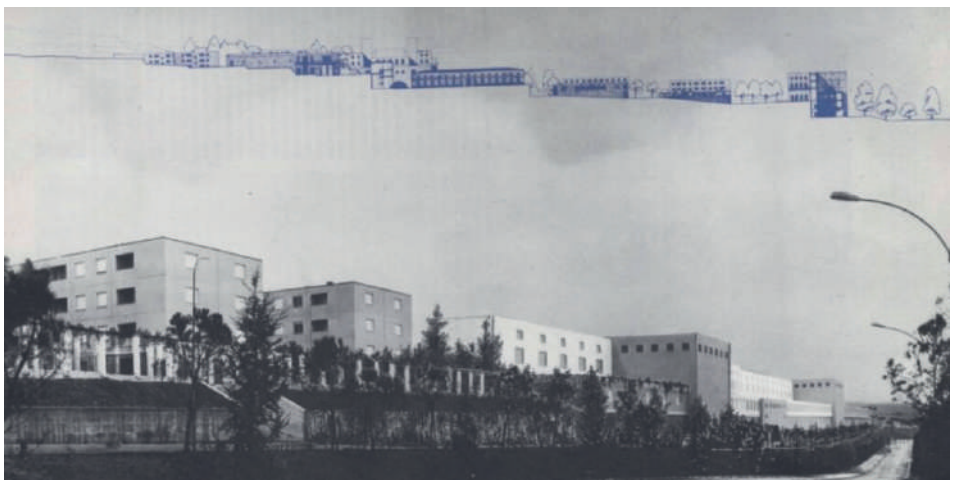

Keywords:
Design-project
Monteruscello
Foundation city
Stratified city
Suburbs.

THE ARCHITECTURAL HERITAGE AMONG THE MAIN MODELING THEORIES

ID004

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Keywords:
Masonry
Architectural heritage
Preservation
Evaluation
Tensile non-reacting material.

This work starts from the research project "Second-hand architecture: a new life for confiscated property." In a broader sense, "giving a second chance" means recovering contemporary existing heritage. Confiscated property can be of various types: valuable artifacts, dilapidated structures, masonry buildings, reinforced concrete buildings, industrial warehouses, and so on. In this paper the applicability of a modeling technique for masonry structures that prescinds from classical elastic theory but considers as central issue is only geometry is investigated: the Masonry Structures stability depends principally on geometry and many marginally on material resistance. Considering masonry like a "traction (mostly) not reagent" material, means that both an art-rule wall built, with diatoni and ortostati, both a wall constituted by an aggregation of not regular various dimensions stones, maybe mixed with sand and water, can be defined "made by masonry". So, the only common characteristic that can be controlled for all typologies is equilibrium, subsisting only when the geometry is right for that specific architecture. Many theories for materials "traction not reagent" are born during the time, but the most important concept that supports all these is that the evaluation must be based only on equilibrium and geometry: if the geometry is managed, the equilibrium configuration of the construction is understood, and stability can be verified. The starting point is the idea that masonry is undeformable: when studying the single typological element, we can disregard the texture of the material and its complexity, keeping in mind the only one common denominator of all elements just is the undeformability. This type of modeling, disregarding the concepts of point tension and deformation, and looking at the global equilibrium problem, involves the entire structural -but architectural too- organism, no longer only from a computational point of view, but also from an historical, material, and compositional (that is architectural) point of view, repositioning the issue from "mathematical problem" to "graphical solution".

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THE CONTINUITY OF ARCHITECTURAL HERITAGE. EL-MINIAWY BROTHERS: COMPREHENSIVE ANALYSIS IN THE SOUTH OF ALGERIA

ID005

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This paper provides an overview of El-Miniawy Brothers' monography and case studies in the south of Algeria. This study focuses on the philosophy of the architects and their way of thinking contributing to the production of architecture that reflects regional atmosphere and is inspired by vernacular design. For this study, a sample of three cases in the south of Algeria which are (Maader Village in Bou-Saada, 400 housing Units in El-Oued and 600 Housing Units in Ouled Djellal) will be analysed through data collection and explore the architect's intents and philosophy. The methods used for data collection included analysing the architect's writings and architectural design. The analysis contained several axes covering different enquiries including the thoughts, concepts, philosophy, social studies, construction materials and morphology of El-Miniawy Brothers producing their architecture in the south of Algeria; to understand how they perceive it, what are the references, and how the design is influenced by the architects' background, society traditions, the context, the climate and the history of the region. The general form of this study will be in the form of questions and answers to selected bullets of discussion created by the authors. The information and data are collected from: (Noweir, 1983; Abada, 2000; Rached, 2010; El-Miniawy, 2019). Thereafter, a personal analysing scheme will be conducted for the case studies. This proposal aims to provide a comprehensive qualitative and analytical study of two pioneer architects who worked in Algeria during the postcolonial period and the 20th decade (specifically their work in the south of Algeria).

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Keywords:
Vernacular-inspired architecture
El-Miniawy Brothers in the south of Algeria
Maader Village in Bou-Saada
400 Housing Units in El-Oued
600 Housing Units in Ouled Djellal.

PROVINCIAL ARCHITECTURE OF THE 20th CENTURY: PRIVATE HOUSE IN SANTA MARIA A VICO (CE). DRAWING AND COMMUNICATION

ID006

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This study intends to understand the compositional processes adopted by the 20th century architects in "Terra di Lavoro", thanks to a graphic analysis of a work. Specifically, we examine the planning aspects of the "provincial architecture", that is that kind of architecture realized in this area by less known architects, thanks to a case study extracted from the private archive of G Trè studio in Santa Maria a Vico (CE). As a matter of fact, the main aim is the exploitation of the unexplored and documentary heritage of the less known architecture in the province of Caserta, buildings of great value, spread all over the area and mostly unknown. Thus, moving from the project graphics of a house from the '90's in Santa Maria a Vico (CE), we get the geometric-configurative matrices, the planimetric and volumetric articulations. At last, the work we examine - very similar to Le Corbusier style, in particular to the last period of the franco-swiss master, that of beton brut and organic shapes – is decomposed and analysed according to representative models, allowing a better understanding of the planning solutions and for communication purpose as well.

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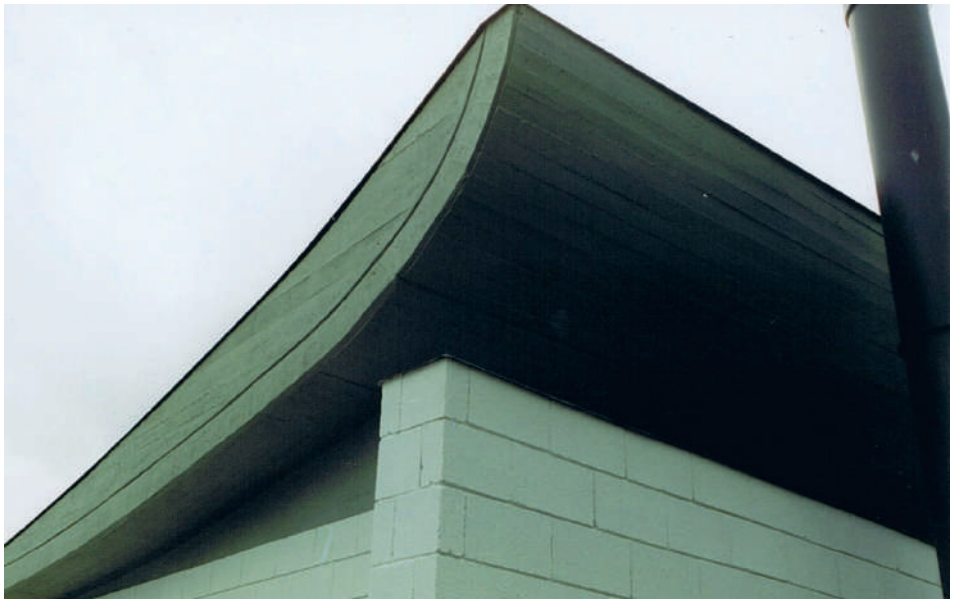

Keywords:
Architecture
Graphic analysis
Exploitation
Drawing
Heritage.

A SCATTERED COURTYARD: REDISCOVERING THE HISTORICAL PALIMPSEST OF XI'AN FOR REWRITING THE URBAN TEXTURE OF THE INNER CITY

ID008

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Chinese Empire Capital for dynasties, Xi'an has known moments of greatest heights that have left permanent traces in the city evolution. The urban strategy, composed of an overall design process, aims to point out the signs of the imperial city now unrecognizable combining urban rediscovery and contemporary social needs.
The project focuses on the regeneration of the City Wall, the most striking legacy of the glorious past of the city. Because of both government policies and urban modern necessity, the inner city has lost its role of urban core to a reckless decentralization that will reach its peak with the merging of the Xi'an and nearby Xianyang municipalities. The project aims therefore to counter these decentralization phenomena through a strategy that brings back the attention in the area close to the City Wall. The goal is to reveal the memory of the place consolidating the historical palimpsest on which the city is founded, and simultaneously to rediscover the traditional typologies giving back the richness and complexity of the traditional spaces. Two specific areas have been identified to exemplify different coherent approaches, applicable in other points of the urban texture along the Wall perimeter. The study case concerns the entrance from the Zhuque Gate. It deals with a significant place in the history of the city, as main entrance into the walled city during the Tang Empire. In this intersection, we recognize the presence of a specific and unique fabric situation: a stripe of linear buildings dating back to the 70s and still recognizable despite the great transformations of the past decades.
The project operates on the heads of the existing blocks, maintaining the middle part of the fabrics while providing public spaces and intensifying the relationship between the inner part of the city and the City Walls.

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Keywords:
Xi'an
Historical palimpsest
Urban regeneration
Rewriting
Courtyard.

LANDSCAPE, LANDSCAPES AND INTERLOCUTORS: MY VISUAL REPRESENTATION AND THE VISUAL REPRESENTATION OF "THE OTHER"

ID009

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Although I can have a point of view and, therefore, a perspective about a certain object, a landscape, for example – and "at no time I am aware of finding myself enclosed in my sensations" –, I recognize in the other, someone else, capable of to construct a representation of that object, that landscape. We know that knowledge that we have the other that allows us, with some confidence, to say that he too – like myself – represents the same object. He, like me, is a starting point for the object, and who, like me, merges with the object in the same intentional fabric of both, (once again and for lack of a better term) compagination. What we have just stated seems correct. But how do we get to know each other?

We get to know each other about their own representations, that is, we get to know each other by representing our own representations, projecting ourselves into them.

This is because: "[...] the projection onto the behavior of the other of the experiences corresponding to me to the same behaviors implies, on the one hand, that the other is apprehended as an ego, that is, as a subject able to experience experiences for himself , and, on the other hand, that I apprehend myself as seen from the outside [in Husserl's words: "an outside-of-me"], that is, as an other for an alter ego, since these behaviours to which I assimilate the of the other that I observe, as a subject, I can only experience us, and not apprehend them from the exterior."

And it is thus, projecting ourselves onto the representations of the other, that we presuppose the other as one like us – our fellow man -; it is when we settle on this assumption that not only is "a constituent subject (the other) possible for a constituent subject (I or Me)", since he/her is, like me, a source of meaning and intentionality , as we delimit "[...] a community of people [...] that is based simultaneously on the mutual apprehension of subjectivities and on the community of environment". It will be in this sense that Husserl will come to argue the notion of intersubjectivity.

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Keywords:
Representation
Drawing
Landscape.

GIOVANNI PATTURELLI. ARCHITETTO DI CASA REALE

ID010

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"Giovannino" Architetto Regio, devoted his whole life to the completion of the royal sites. He married Carolina Brunelli who belonged to a Tuscan family that followed the king Carlo Borbone in the eighteenth century. Various members of Brunellli's family were architects, sculptors and painters at the service of Luigi and Carlo Vanvitelli: in particular, Angelo Maria was a sculptor while Carlo was a painter. The work of these artists, which took place synergistically continuing the "family" custom initiated by Vanvitelli, is little known but very important for the history of our territory. In May 1822 two events will mark the fate of Giovanni Patturelli: the laying of the foundation stone of the cathedral of Caserta and a contravention to the Royal Decree of 13 May 1822 for ancient objects unearthed in his fund in Curti, where there was an ancient sanctuary that was dedicated to the Matres Matutae, from which come the archaeological finds of the Museo Provinciale Campano in Capua.

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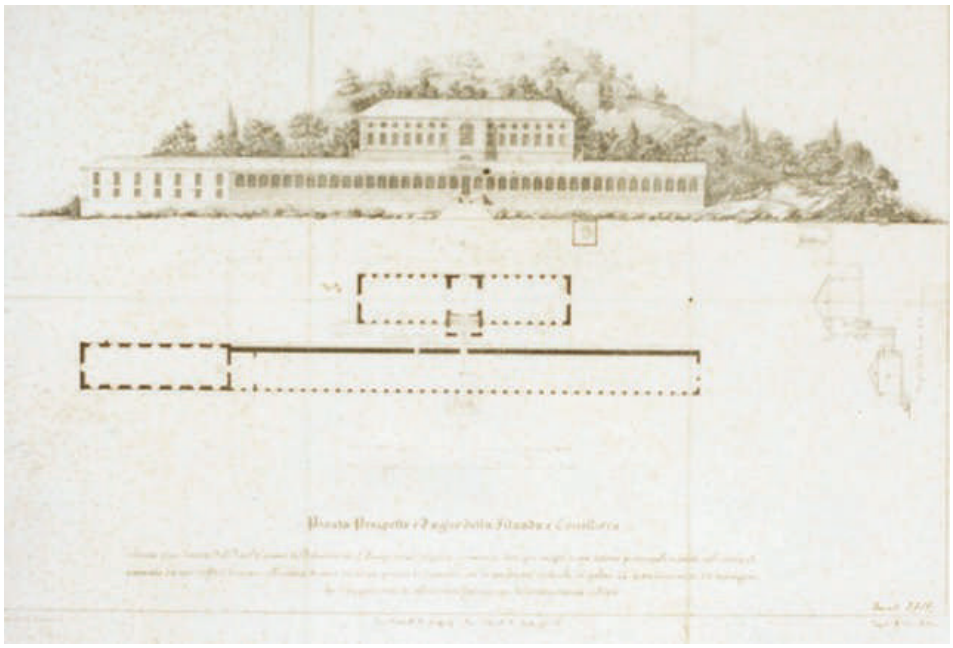

Keywords:
History of the City
Territory
Caserta
Giovanni Patturelli
Royal sites.

MONASTIC COMPLEX GREEN SPACES BETWEEN RESTORATION AND REGENERATION

ID012

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The paper proposes a critical and propositionalanalysisonthearchitectural and landscape recovery of green spaces within monastery complexes characterised by abandonment and inadequate maintenance. In particular, the research aims to devise possible strategies aimed at an ecological and sustainable recovery of common green areas, proposing as an applicative case study the gardens of the Meteora Monasteries in Greece, characterised by a high unexpressed potential. The interventions we intend to propose tend to develop sustainable eco-innovative strategies for the regeneration and reuse of these areas as new spaces for social aggregation in order to define a new model of open space conceived as an articulated system characterised by high functional flexibility. In the context of the regeneration and reuse of such contexts, an in-depth knowledge of the environmental conditions and phenomena that led to the creation of these places constitutes a strategic preliminary activity to any regeneration operation. The research conducted on monastic gardens constitutes a possible methodological approach for the valorisation and recovery of disused green spaces. In this context, the discipline of restoration has made it possible to elaborate guidelines and conceptual projects aimed at refocusing collective attention on this heritage to be considered as an integral part of the urbanised contexts of the contemporary city.

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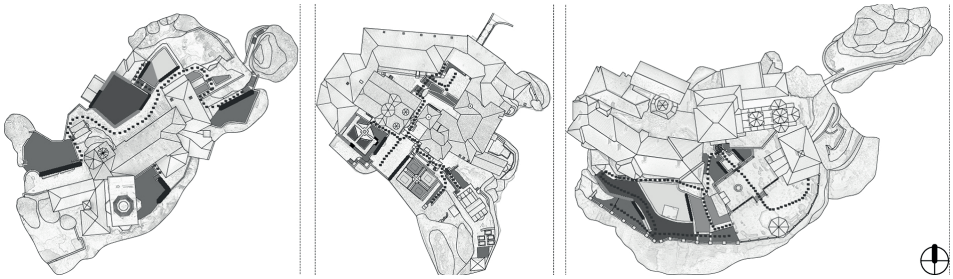

Keywords:
Sacred gardens
Monasteries
Restoration
Regeneration
Enhancement.

LANDSCAPE FRAGMENTS: INVESTIGATIONS ON THE METAMORPHOSES OF FUCINO FOR A BIOCLIMATIC ANAMNESIS OF THE TERRITORY

ID013

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The emergency linked to climate change involves multiple factors intersecting in a multidisciplinary way the habitat with its architectural and landscape transformations more or less metabolizable by the natural environment. The IPCC, the United Nations Intergovernmental Panel on Climate Change, has published its sixth climate report: an atlas of human suffering, in addition to scientific and climatic evidence, the ways in which the climate crisis has changed, and it is changing the lives of the human species have been observed. The contribution, in line with this document, aims to investigate the integration between theoretical-scientific plan, application plan and symbolic plan by relating the landscape-city-architecture system with climate-nature-human system. It points to undertake a path of knowledge through a transdisciplinary approach where the landscape assumes a leading role as a conceptual operator for the definition of the habitats of change, considering the consequences of exceeding planetary limits in order to formulate the hypothesis: a habitat change is interdependent with a landscape change. In this sense, it is emblematic to retrace the historical-iconographic and bioclimatic events connected to one of the greatest landscape metamorphoses in Abruzzo that of the drying up of Lake Fucino, the colossal enterprise started in 41 A.D. by the Emperor Claudius to solve the problem of frequent floods that damaged the cities and crops on its shores. The research applied to the case study allows to document through testimonies of the past, current surveys and investigations, how a significant transformation of the landscape has led to an environmental and climate change that has simultaneously involved social, economic, and visual identity aspects. On the one hand, the problem of managing sudden floods caused by climatic factors and atmospheric conditions was solved by designing an engineering work such as the Claudius emissary, on the other hand it was possible to note the disappearance of typically Mediterranean biodiversity on which the economy and society of the time was based. Currently the Fucino is presented as a weaving of orthogonal lines punctuated by canals and roads. The relational metamorphosis between the landscape and the social dimension is evident: from the waters of fishermen to the lands of farmers. The reading of the identity, material and immaterial, of the landscape is methodologically conducted also through the composition of an iconographic story, made up of paintings, engravings, and stone fragments of Roman bas-reliefs depicting walled cities and boats that ply the waters of the lake, which they can be retraced with virtual explorations in comparison to current reality.

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Keywords:
Landscape
Climate changes
Abruzzo
Survey
Representation.

FROM DENIED AREAS TO NEW URBAN CENTRALITIES: A PROPOSAL

ID014

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The denied areas of the Caserta territory have always represented a real territorial problem connoted by obvious signs of urban, physical and functional degradation. The concept of denied area is closely related to the key concepts of land consumption, abuse and regeneration. The work goal is to define the proper transformability of denied areas in two municipalities in the province of Caserta, Trentola-Ducenta and San Marcellino. In order to define the transformability of denied areas, it is necessary to know the land use and land consumption of each municipal territory; knowledge of these territories remains one of the main tools for sustainable land planning and management. The focus area, in addition to being the one, within the province, with the greatest presence of neglected areas, is also the one with the greatest urban squatting. Despite some denied areas have been half recovered over the years, there are still many areas with no intended use and in a state of complete abandonment. It is clear that we are facing a territory that consumes land and then does not use or neglects it. Therefore, recovery and regeneration processes can be a great opportunity for the territory, both from the point of view of new use and to raise the level of architectural and functional quality of urban spaces. Regeneration allows the community to re-appropriate and re-experience the regenerated spaces, with obvious improvements in the quality of life and in the social, economic and environmental spheres, fostering urban recovery actions, especially of the most degraded suburban areas, as they are human realities that have never had an identity, establishing themselves as an opportunity to promote policies of social participation, boosting employment and local entrepreneurship.

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Keywords:
Disused
Denied areas
Abusiveness
Soil consumption
Regeneration.

THE CAPUCHIN CONVENT AND THE CHURCH OF SAN MATTEO AL POSATOIO IN VOLTERRA. HISTORY, SURVEY AND REUSE

ID015

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Volterra, located in central Tuscany, was founded by the Etruscans for its favourable strategic position, it saw a slowing expansion but not in its importance, first in Roman times and then from the 8th century onwards with the construction of the medieval walls. The episcopal City, with its Etruscan, Roman and medieval components, is the first Tuscan capital of culture. The immense building heritage includes a series of episodes of different historical, architectural and cultural importance including the ancient Convento dei Cappuccini which can be traced back to the 16th century. It is increasingly evident, especially in a reality such as Volterra, the need and urgency to enhance the ancient structures, the building heritage in general, especially those of public property, as is the case in question, to allocate it to new intended uses, to stem or at least limit the problems highlighted and at the same time activate new employment opportunities. The case in question, already identified as a building heritage to be valorised, first as a school complex and then as a RSA, as a result of concrete and recent interests advanced by companies in the sector, appears as a concrete case study in the direction of a reuse compatible with the effective needs of an urban and socio-economic development for the city of Volterra. The proposed study intends to document, first of all, the precise knowledge of the factory through the survey and the profitable acquisitions resulting from the archival investigation, the latter investigations extended up to more recent times precisely to take into account the susceptibility of the asset for uses congenial to the realistic planning forecasts included in the new POC recently approved by the municipal administration. Finally, the intention is to propose a design study, although in principle, on a possible reuse of the former Convento dei Cappuccini and the coeval church of San Matteo al Posatoio.

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Keywords:
Volterra
Survey
Representation
History of architecture
Documentation.

CONSERVATION AND SUSTAINABLE REUSE OF ABANDONED ARCHEOLOGICAL HERITAGE

ID016

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Abandoned heritage, as is well known, constitutes a field of investigation of considerable interest for the restoration and sustainable reuse of places. In a context in which globalisation has often led to chaotic urban expansions to the detriment of built assets of high historical and cultural value, abandoned heritage can be considered as an important resource to be recovered and enhanced. The practice of reusing historic buildings, in particular, has developed over time since late antiquity when Vitruvius introduced, towards the second half of the 1st century B.C., the concept of utilitas as an indispensable condition for the existence of a building. Towards the end of the 20th century, this theme was reinforced thanks to the contribution of several scholars, including Settis (1984), who introduced the concept of memory and reuse of antiquity. In this context, the contribution proposes the analysis of the archaeological site of Mirine-Fulfinum in Croatia, with cognitive operations aimed at the restoration and sustainable reuse of abandoned architectural spaces. The aim of the research is the knowledge and conservation of the investigated heritage on the one hand, and on the other hand the elaboration of some operational proposals aimed at attributing it a new function through the insertion of cultural attractions. The valorisation of this heritage through the sustainable reuse of cultural heritage as a place for social aggregation becomes a possibility for the reintegration of abandoned architectural complexes to be re-proposed as an added social and cultural value of contemporary cities.

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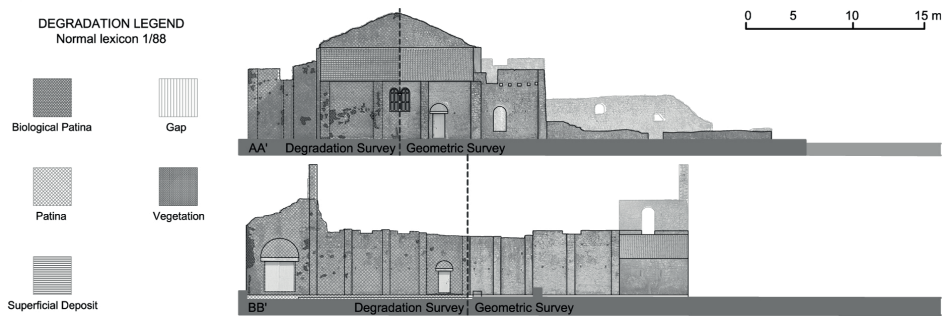

Keywords:
Abandoned Heritage
Croatia
Knowledge
Conservation
Reuse.

RESILIENT AND SUSTAINABLE ARCHITECTURE

ID017

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In a dynamic and ever-changing world, the need to respond to change is growing. The increase in temperature, water problems, intense and sudden atmospheric phenomena are rapidly changing the urban and social fabric, and, with this, technologies are developing even more rapidly. For these reasons, the theme of resilience becomes stronger within design, managing to predict and respond to such changes. The concept of "resilience" in the last decade is placed in a close strategic relationship with the primary objectives of "circularity of processes" and Green Economy applied to the built environment and construction. Resilient architecture arises from the desire to compare innovative strategies and interventions concerning adaptive constructions in sustainable, almost zero-energy building, with particular reference to the building envelope, also through the use of biomimetic smart materials for the second skin of the buildings. Also in the landscape, in the modern conception, protected areas not only have the role of protecting biodiversity, but also of mitigating the effects of climate change and of providing the so-called "ecosystem services", goods and services that ecosystems provide to man. In general, resilience is understood as "the property of complex systems to react to stress phenomena, activating response and adaptation strategies in order to restore functioning mechanisms". Within a positive dynamic process, aimed at managing events and rebuilding a new equilibrium (landscape, urban, architectural, economic, social, etc.), resilience does not imply the restoration of an initial state, but the acquisition of a new balance and maintenance of functionality through two approach strategies: the first "adaptive", focused on the dynamic nature of the operating methodologies in which all the elements of the built environment, from the territorial, urban and building scale, to that material and object, they adapt to the new balances with higher efficiency and levels of performance; the second "mitigative", where research is oriented towards innovative technologies aimed at risk prevention and impact minimization and which aim at the creation of territorial and urban systems, buildings, objects, components and sensitive materials, with variable and balanced behaviour energetic-dynamic with climatic and environmental changes.

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A. Rossi, 1966, L'architettura della città, Marsilio, Padova.

Keywords:
Resilience
Environment
Technology
Landscape Project
Architectural Project.

BUILDING FLEXIBILITY FOR A SUSTAINABLE FUTURE: REPURPOSING ABANDONED PROPERTIES

ID018

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How many abandoned buildings are scattered throughout our territories? Taking into account all the disused and abandoned heritage, it can be said that there is no longer any need to build. With this attitude, no more land would be consumed that could instead be used for parks, public spaces, and green areas. With correct urban planning, the territory could be regenerated by filling its gaps. However, the reality is that not all abandoned buildings can be repurposed to meet the demands of contemporary society. In many cases, it is more economically viable to construct a new building rather than renovate an existing one. For instance, large multinational companies often require specialized storage and sorting centers of big dimension and tend to prefer to build new construction (even if they lack architectural values) over renovating existing structures. Probably, these structures may be decommissioned within 20 to 25 years, adding to the already significant number of abandoned properties if they are not adaptable for other uses. Among the vast array of abandoned properties are numerous prestigious buildings, both historical and belonging to the field of industrial archeology. In the province of Caserta alone, several notable examples include the former Olivetti factory in Marcianise by Edoardo Vittoria and Marco Zanuso, the former Manifattura Pozzi Ginori in Sparanise by Luigi Figini and Gino Pollini, and the former SIAG in Marcianise by Angelo Mangiarotti and Aldo Favini, all possessing significant potential value despite their current state of disrepair. These buildings possess ample space, often surrounded by greenery, and are well-suited for a variety of modern activities, including museums, sports centers, commercial ventures, collective spaces, offices, coworking areas, and even automated storage facilities. In approaching a project today, it is imperative to prioritize the repurposing of disused heritage wherever possible. If this is not feasible, it is vital to consider a flexible building design that can be easily adapted to future needs and requirements beyond its initial purpose. Society and its needs are ever-changing, and a building's adaptability is essential in ensuring its continued relevance and usefulness.

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Keywords:
Architectural project
Urban planning
Territory
Planning
Resilience.

FACTORIES
OF KNOWLEDGE AND SOCIALITY

ID019

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Nowadays, on the one hand, we notice the affirmation of pedagogical and didactic models increasingly oriented towards flanking, if not even replacing, the traditional notion of teaching with the more innovative notion of 'guided learning' – essentially freer and more autonomous – and, on the other hand, we are aware of the growing relevance of the urban and social role that school and academic communities are called upon to assume due to their vocation to be a cultural and economic engine for the territory, a driver of progress and renewal for the local community. Based on these considerations, the paper proposes as a strategy for a sustainable management of the cultural heritage – on an economic, environmental and social level – the intersection between the architectural and urban design of new spaces for the construction and development of knowledge and the equally topical and emerging issue concerning the reuse of disused industrial heritage, due both to its location in areas that have now become central within the established urban fabric and to the suitability of the typological and spatial features of specific industrial architectures with respect to the functional needs connected to educational and cultural activities open to the community. Through the analysis of a few recent case studies, which have been able to refurbish and revitalise entire neglected urban sectors, the paper aims at highlighting how this intersection may activate interaction processes and fruitful contamination between the social and academic communities, also promoting knowledge, preservation and enhancement of ex-industrial areas, often cause of urban decay, through their functional reuse and the rediscovery of the identity as well as material and immaterial values of a heritage that once again can become a 'place of life' and a 'place of experience'.

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Keywords:
Learning Centres
Adaptive Reuse
Architectural Design
Urban & Social Regeneration.

THE COASTAL LANDSCAPE AND THE MODERN HOLIDAY ARCHITECTURE. ANTONIO VALENTE (1894-1975) AT CIRCEO

ID020

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The economic well-being of post-WWII led to the development and spread of a new form of living linked to leisure: the coastal holiday architecture. Many examples have arisen on the Mediterranean coast and several are the masters of Modern Movement who have dealt with this subject. What were the different approaches to the natural environment? The paper focuses on the case of Antonio Valente (1894-1975), architect and scenographer, "Pioneer of the Quarto Caldo" -south side of the promontory of Circeo, between Rome and Naples -, among the first to intervene on this coast, creating many architectures that characterize the current landscape. In an innovative way for the culture of the time, he intervened there with great respect and wisdom, avoiding the destruction of coastal landscapes that affected many other tourist destinations. The territory of Circeo was for him a creature to protect and enhance and his projects were always careful of the preservation of the natural landscape, in which over the years – from the 40s and the 70s - he created numerous villas and holiday buildings. Some case studies will be presented to show the approach with which Valente worked, investigating the relationship he established with the local landscape and nature. Following the definition of Cultural Heritage, the extent to which its interventions have succeeded in creating a new "cultural landscape" will also be explored.

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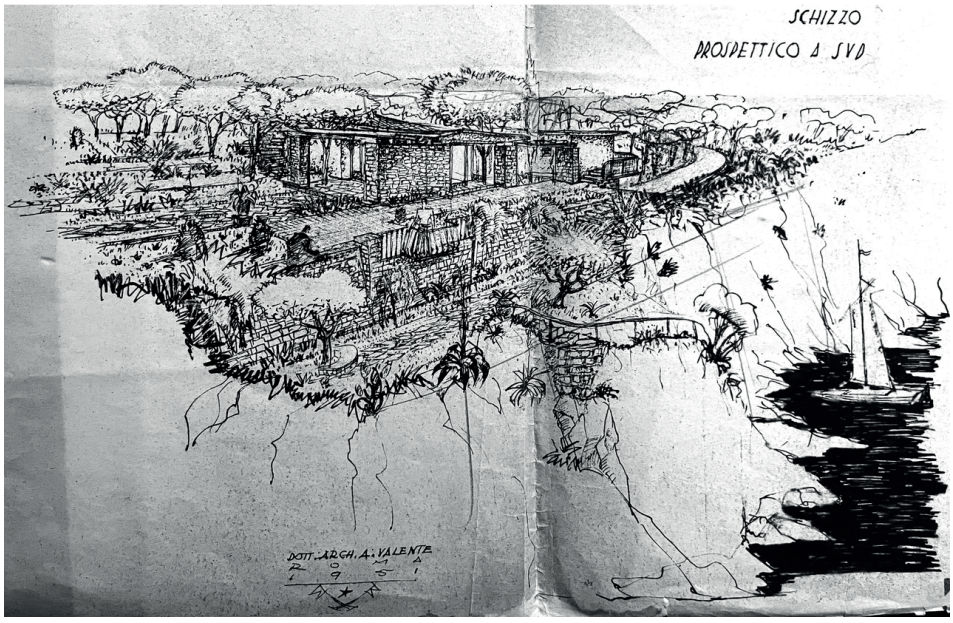

Keywords:
Coastal Landscape
Holiday Architecture
Circeo.

DIGITAL MODELS FOR THE FRUITION OF THE UNESCO HERITAGE OF BERAT IN ALBANIA

ID021

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The contribution proposes digital models for the fruition of the Unesco site of Berat in Albania, finalised at the digitisation of the Architectural Heritage and the possibility of using spaces with a high density of tourism. Currently, the city of Berat receives a large number of daily visitors, which causes degradation and loss of resources. The proposed activity focuses on the creation of digital tours in order to make use of the most highly condensed or overcrowded spaces. The discipline of architectural drawing, through digital modelling, meets the graphic and functional requirements for digital fruition. For the present contribution, some models of the Unesco city realised by using digital software are developed. They are survey models, developed on the basis of photogrammetric knowledge activities, with the objective of documenting the current state of the sites. The survey's scope is to compare and recognise the peculiarities and perspectives of the urban palimpsest that, over time, have left the signs of an incessant work of stratification and rewriting of both natural processes and human interventions. The Albanian territory, a country of reduced extension and restricted cultural echo in the European context, requires some considerations regarding certain historical centres that are still preserved but not valorised. The architecture of the Albanian country, for centuries part of the multi-ethnic Ottoman Empire, is characterised by a constant religious plurality that reflects a very rich architectural context. The use of innovative technologies, such as four-helical drones and 3D rendering software, has enabled the creation of surveys and digital models intended to outline a path of knowledge of the places in order to propose any possible strategies for the protection and enhancement of the territory and the architectures under Unesco protection through innovative methodologies of instrumental surveys with four-helical drones and laser scanners, as well as unprecedented proportional and geometric studies. The results achieved demonstrate how digital survey modelling, developed by surveying standards, has considerable economic, social and environmental advantages.

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Keywords:
3D Model
Representation
Fruition
Architecture
Berat.

THE INTERVENTIONS OF ANTONIO VALENTE (1894-1975) ON THE CIRCEO PROMONTORY, ITALY. PROPOSALS FOR STRATEGIES TO ENHANCE A CULTURAL LANDSCAPE

ID023

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The area of the Circeo promontory, between Rome and Naples, represents an environment of great value. This territory, which remained for a long time intact in its original appearance, thanks to the isolation determined by the Pontine swamps, has experienced a great building development between the post-WWII period and the 1980s. Along with other protagonists of modern Italian architecture, such as Michele Busiri Vici and Riccardo Morandi, Antonio Valente is among the first to intervene on Circeo promontory. He constructed there about fifty projects, most of which housing, and has to be considered the architect who has more incisively determined the identity of this place. Although his production in the area has been conspicuous, he located his buildings carefully in the landscape, differentiating his work from the intensive interventions created in other tourist locations of the Italian coast. The place in which his works are integrated has strong historical and naturalistic value, which form a unicum fully qualifiable as a Cultural Landscape. However, it remains poorly known both by the local population and the tourists. Knowledge and documentation of Cultural Heritage, as a fundamental tool for preserving identity, can be decisive factors also in combating the challenges of climate change. The implementation of strategies able to disseminate the knowledge of the territory's heritage increase the sense of awareness and shared responsibility that sees local communities as "guardians" of the heritage of the same territory. The paper, thus, aims to provide ideas for enhancement strategies to disseminate the historical-architectural knowledge of this precious place, promoting the revaluation of its qualities.

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Keywords:
Cultural Landscape
Identity
Enhancement
Circeo.

TRADITIONAL TECHNIQUES AS MITIGATION STRATEGY: TERRACES ON PANTELLERIA ISLAND

ID024

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On the one hand, the terraced landscape coincides with a landscape, historical and cultural heritage, as well as an archive of knowledge and techniques. On the other hand, terraces represent tools that can reduce the hydrogeological risk of territories, retain a high capacity to recover from extreme climatic stresses and play the role of ecological infrastructure. Today, in general, due to the incompatibility with mechanized agricultural techniques and the phenomenon of abandonment of rural territories, there is the abandonment of terraces, and thus the degradation of the heritage on the one hand and the increase of environmental risks on the other. In this sense, Pantelleria Island, represents an example that can demonstrate the role of terracing as an element to cope with critical environmental issues. The methodology that will be followed will be to analyze the genesis of the island's historical landscape with respect to the environmental risks of today. The island has rather rare climatic and environmental conditions: absence of fresh water, strong wind, aridity, few rains, violent and concentrated that participate in soil erosion and slope runoff. Such a rather rare climatic situation can be comparable to extreme events due to climate change. Specifically, traditional dry stone walls allowed hydrolysis and thus made cultivation possible. This process, could be a possible response strategy to the water crisis of recent years. With respect to the protection and enhancement of abandoned terraces, several strategies are identified. On the one hand, their reactivation through new forms of agriculture - such as agroecology or precision agriculture - or, according to another approach their valorization is suggested. Primarily through projects aimed at the recovery of the dry stone wall technique itself or through the increase or identification of cultural paths that cross the terraces themselves (understood almost as tourist destinations). The latter systematize the landscape heritage of historic dry-stone artifacts - think for example of "Jardini", typical architectural structures of Pantelleria's gardens. In sum, it could be suggested that a recovery of traditional techniques is desirable in order to formulate strategies to respond to climate change.

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Keywords:
Dry-stone wall
Terrace
Archaeology
Cultural roads
Agriculture.

BETWEEN SKY AND SEA: THE MONASTERY OF ZYGOS IN GREECE

ID025

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The research focuses on the study of the ruins of the Zygos Monastery on the Chalkidiki Peninsula in Greece. The survey actions are directed towards initiating policies of climate change adaptation, which inevitably affects the architectural heritage. The activities were carried out on the ruins of the Monastery of Zygos, which was built around the middle of the 10th Century and is located approximately forty metres from the current border of the Autonomous Republic of Mount Athos. From the analysis of archival sources, it emerges that the structure was already built before 991 AD, and was subsequently destroyed in 1198. Reconstruction can be dated to 1206, as can be seen in the graphic reconstruction of the surrounding walls, castle and monastery. The defensive structure served as a fortress and storage place for goods from Athos and looted from the various monasteries. Architectural survey activities covered the current remains of the structures and the mosaic parts of the floors. Floor mosaics representing monastic and bucolic scenes with lush flora and fauna were surveyed using photogrammetric techniques. The survey took into account the difficulties of the survey, the presence of tourists and the reflection of materials due to the current plastic covering that protects the precious mosaics. The digital images taken by means of terrestrial and aerial photogrammetry covered the spaces that can currently be visited and the areas closed to the public because they are subject to extraordinary maintenance due to the saltiness that constantly disfigures the property. A study of great Interest, certainly unprecedented In the field of research, finalised at graphic documentation and digital modelling to safeguard an artefact of great architectural interest.

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Keywords:
Monastic architecture
Survey
Mosaic
Protection
Greece.

FOROUGHI & UTZON IN MELLI BANKS DESIGN IN IRAN. MORPHOLOGY AND SPACE

ID026

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A city's architecture is like an open book that reveals the thoughts and attitudes of its residents. Therefore, a building cannot be digested in a place's culture and climate if it hasn't been designed and implemented harmoniously with its texture, style, and climate. The architectural art of any culture and nation is one of the most important manifestations of that civilization. Iran's architecture, which is manifested in different forms in different buildings, has a special place in world architecture. Mohsen Foroughi an Iranian architect who had immigrated to France to continue his studies and Jørn Utzon a Danish architect, designed the Melli Bank branch of Tehran Bazaar and the branch of the University of Tehran in Iran, respectively. Based on morphological and spatial factors aimed that whether they had been designed with considering the texture, culture, and architectural principles of the host region. I assessed the physical and structural components of those bank branches first using a descriptive and analytical method and data was collected from written sources, library research, internet, articles, and related magazines. Due to our findings, in both works, we are witnessing the inspiration of characteristics of Iranian architecture in their modern design. Foroughi despite his education in the West, relying on artistic creativity and inspiration from traditional Iranian architecture has significantly contributed to modern Iranian architecture's emergence. Utzon was interested in Iranian Islamic architecture and in this project, he used a hybrid design and took advantage of the European modern style and principles of Iranian architecture. For instance, he used the idea of designing ceiling skylights for that building which was in his mind during his visit to the traditional Bazaars of Iran. We conclude that both architects considered the social context of the host country and also used their personal creative evolution in their design.

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Tehran Bazzar Branch
Location: Tehran, Iran
Architect: Mohsen Foroughi
Date: 1941
Type: Office Buildings

University of Tehran Branch
Location: Tehran, Iran
Architect: Jorn Oberg Utzon
Date: 1959 -1960
Type: Office Buildings

Keywords:
Foroughi
Utzon
Melli Bank
Morphology.

CLIMATE CHANGE AND INDOOR ENVIRONMENT IN THE ALBANIAN MUSEUM BUILDINGS

ID027

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Museums are not just iconic for their visual appearance and the cultural treasures they hold, but also for the way they perform and how sustainable they are. As cultural institutions that showcase the world's heritage, museums have a responsibility not only to expose the collections but also to conserve, preserve and protect them. Additionally, museums can serve as models of sustainable architecture and design for the wider public. Climate change is becoming a growing concern for the indoor environment in museums. One of the most significant impacts of climate change on indoor environments is the increased frequency and intensity of extreme weather events. Such events, including heatwaves and floods, can cause temperature and humidity fluctuations that can damage collections, leading to deterioration, fading, and discoloration. The building that houses museums are often valuable cultural artifacts in their own right, and the effects of climate change can have a dual impact on them, affecting the collections that they house and the building itself. To understand the role of museum buildings in mitigating the effects of the external climate for the preservation of collections, this study aims to assess the situation of Albanian museums through measurements. The National Historical Museum was taken as a case study for this purpose. Firstly, it is considered necessary to understand the history of the indoor climate in NHM museum and to monitor the current Temperature and Relative Humidity parameters in order to understand thermohygrometric situation in which the collections of this museum are displayed or stored. Furthermore, the building has been analysed to understand and assess its role in controlling the external climate. This was done to gain insight into how the building was designed and constructed. The measured parameters helped us to understand the conditions of the indoor environment in NHM building, evaluate the risk that climate parameters may pose, and provide recommendations for their control. By assessing the impact of climate on the indoor environment of NHM building, this study aims to contribute to the development of sustainable strategies for museum collections' long-term preservation.

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Keywords:
Cultural Heritage
Museums
Climate risk.

SUSTAINABLE REUSE AND ENERGY EFFICIENCY IN FORMER PSYCHIATRIC HOSPITALS

ID028

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The sustainability and energy efficiency of historic buildings have become increasingly important topics of research and debate in recent years and represent a complex challenge for experts in the field of architectural conservation and restoration. In many countries, ancient buildings constitute a substantial part of the architectural and cultural heritage, and therefore the energy efficiency of the same can be a complicated process but necessary to ensure a reduction in greenhouse gas emissions and a consequent reduction in the environmental impact that they produce. In many cases, historic buildings have been built without any consideration for energy efficiency and often have features that make it difficult to make significant changes without compromising their historical or architectural value. However, when it comes to old buildings, it is important to remember that each building is unique and requires a personalized approach to energy efficiency. The case study examined, is an interesting in-depth option for the preservation and reuse of historical buildings with an important past, such as former psychiatric hospitals. The energy efficiency of these buildings can present several challenges both from a technical and ethical point of view. It is important that the restoration process takes into account the history of the building and the people who have been housed in it, and that it is respectful of the memory and heritage of such places. Ultimately, the energy efficiency of former mental hospitals is a complex process that requires a holistic approach and collaboration between different actors in the sector. However, if properly implemented, it can help to reduce the environmental impact of the architectural heritage while promoting a circular economy.

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Keywords:
Protection
Mental Health
Enhancement.

ARE URBAN MOBILITY APPROACHES IN LINE WITH SDG GOALS? PERSPECTIVES AND SOLUTIONS OFFERED BY THREE EUROPEAN ECODISTRICT SITES

ID029

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In this paper, the analysis of the urban mobility in three ecodistrict case studies has identified a few valuable features that can be implemented to further promote sustainable mobility. The results, by no means claiming to be exhaustive, attempt to highlight certain urban mobility features that the ecodistricts have implemented in recent years, and their contribution to the alignment of mobility with the SDGs. The 'Introduction' section presents a state of research related to urban mobility, it captures many points and features of the latest aspects of mobility and the interlinkages with the sustainable development goals. Further, the follow-on section named 'Urban Mobility' provides detailed analysis of mobility aspects and brings hands on experiences of implementation of mobility in three ecodistrict case studies. The 'Results and Discussion' section synthesizes the outcomes from the previous section and brings perspectives from three ecodistrict sites on several aspects including, public transportation, car-reduced concept, quiet residential roads, parking garages, as well as bike and pedestrian friendly approach. By analyzing and evaluating innovative mobility approaches and solutions, this paper brings a comprehensive discussion on variations and options in sustainable urban mobility applications, as well as tends to shed light on their particular contributions to urban sustainability and SDGs. Finally, this research highlights the uncontested role of the ecodistricts and other components in positioning cities as promoters and drivers of change, especially in pioneering and implementing ideas and approaches related to urban mobility and contributing to Sustainable Development Goals.

Keywords:
Ecodistricts
Econeighborhoods
SDGs
Climate change adaptation
Sustainable mobility.

KNOWLEDGE AND GRAPHIC DOCUMENTATION OF CULTURAL HERITAGE IN PORTUGAL

ID030

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In 1972, UNESCO, in adopting the Convention Concerning the Protection of the World Cultural and Natural Heritage of Humanity, became aware that environmental hazards posed a threat to cultural heritage. It was in 2006, however, that with the reports Anticipating and managing the effects of climate change on World Heritage, and a Strategy to assist States Parties to the Convention in implementing appropriate management responses, that the World Heritage Committee came to the realisation that it had to suggest to all States Parties and heritage decision-makers that they identify actions to mitigate the effects of climate change on world cultural heritage sites. In response to the most up-to-date (2016) version of these documents, with targets to be reached by 2030, is the study conducted on two jewels of the city of Lisbon, symbols of the power of King Manuel I's reign and landmarks of Portuguese identity: the Tower of Belem and the Jerónimos Monastery, recognised as UNESCO heritage sites since 1983. The aim of the research was to carefully document the state of conservation of the artefacts, through a consolidated image-based survey process, constituting not only an iconographic database but also an archive of three-dimensional performance models to aid the monitoring and identification of good practices for the adaptation of cultural heritage to climate change.

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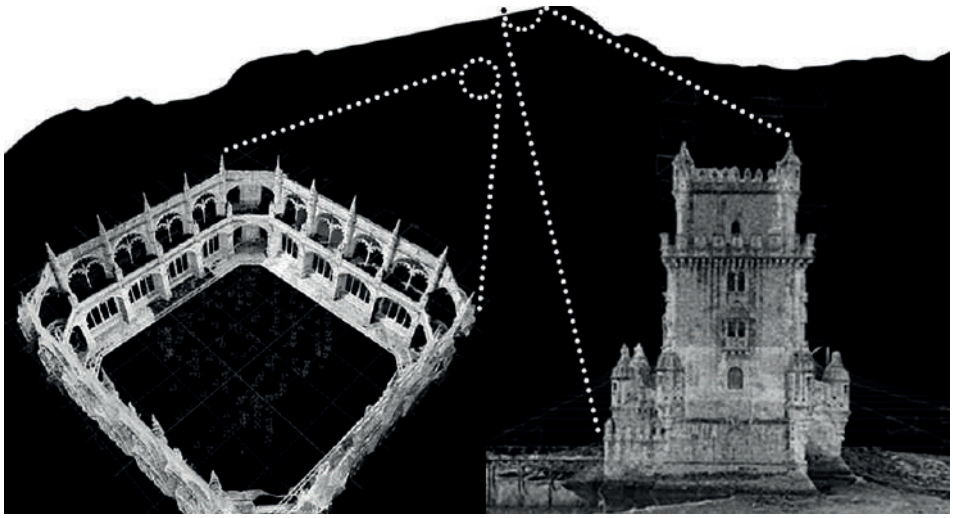

Keywords:
Knowledge
Documentation
Survey
Jeronimos Monastery
Belem Tower.

STUDIES AND ANALYSIS OF THE ANTHROPIC HERITAGE. THE SURVEY OF ARCHITECTURE IN PORTUGAL

ID032

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Cultural heritage is part of the identity of the people who inhabit a place. It is a lever for tourism, for local and national economies as well as for knowledge sharing, helping to strengthen social inclusion and recovery after a crisis. The protection of cultural heritage is one of the objectives and at the same time one of the greatest challenges of our time. Indeed, the need to protect its memory has arisen from the increasing man-made and natural threats, such as climate change, to which cultural heritage is subject. It is in this context of heritage protection and enhancement that the knowledge gained from the study carried out on the Castle of Torres Vedras, located in the Portuguese city of the same name, is to be found. The study was carried out by methodologically resorting to the SfM survey by UAV, capable of effectively describing the space and morphology of the fortified architecture. The study was conducted within the discipline of architectural design with bibliographic and iconographic research, photographic surveys, surveys and digital models. This research aims to monitor, document and digitise the state of the remaining parts of the site in order to provide an aid for subsequent evaluations of the degradation processes triggered by climate change and the identification of best management practices aimed at reducing the risk to architecture and the natural environment.

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Keywords:
Knowledge
SfM photogrammetry
Fortification
Surveying
Torres Vedras.

RESEARCH FOR KNOWLEDGE OF THE MAFRA NATIONAL PALACE IN PORTUGAL

ID033

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The paper focuses on the graphic and spatial analysis of the National Palace of Mafra, located in the city of Mafra, Portugal. This imposing Baroque style palace, decorated with Italian neo-classical influences, represents one of the largest historical monuments in Europe and was recognised as a UNESCO World Heritage Site in 2019.
The building, which is an important testimony to the history of the area, has not undergone any significant interventions, keeping its original architectural structure and beauty intact. It is currently occupied by various functions such as a national monument, a museum and the headquarters of the Portuguese army's weapons training school. The analysis of the building and the bibliographical and iconographical sources allowed us to understand the original project of the Monastery within the Palace, which envisaged the presence of thirteen monks, and its subsequent expansion to include forty, eighty and finally three hundred monks, as well as the Royal Palace and the Basilica. Sources mention the project idea steered by the Marquis of Fontes, in collaboration with architects Carlo Gimac, Carlo Fontana, Tommaso Mattei, Filippo Juvarra and Antonio Canevari. The final project and supervision of the work was given to the architect Johann Friedrich Ludwig.
The research activity was based on a two and three dimensional investigation process, divided into three phases. The first phase included the acquisition of photographic documentation and the creation of graphic eidotypes, using tools typical of manual surveying, such as digital cameras and a quadrihelic drone. In the second phase, using specific digital software, point clouds were processed to represent the main details of the building, making it possible to study the details. Finally, the last phase saw the elaboration of plans, sections and a 3D model.
The approach adopted made it possible to produce a vast amount of graphic, photographic and three dimensional documentation of the National Palace of Mafra.

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Keywords:
Heritage
Documentation
Images
Survey
Representation.

REUSE MODELS FOR RESILIENT LIVING SPACES

ID034

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This paper is concerned with investigating the relationships established between pre-existing and new environmental configurations resulting from transformation/regeneration operations in urban areas characterized by critical conditions. All this with the aim of defining reuse models conceived as articulated interventions characterized by high functional flexibility. This is also in relation to the need, after the pandemic period, to equip urban areas with appropriate multifunctional spaces and to re-study the rules for the use of areas for collective socializing.
Preliminary analysis of case studies has allowed the investigation of strategies that aim at the regeneration of sites through the activation of processes that promote solutions with the use of natural systems capable of generating environmental benefits and comfort for users. These strategies have stimulated a series of considerations on the appropriateness of operating according to systemic logic and re-connection between built and open space (in its different declinations) in an attempt to optimize not only the resources available but also the improving contribution (technological-environmental), resulting from the quality of individual collective living spaces on the context in which one intervenes. From the perspective of resilient modification of the built environment, the problematic nodes of the process of conceiving, realizing and managing built, urban and landscape space are addressed by reinterpreting them in a dynamic key in the logic of an appropriate relationship between ecosystem capacities, environmental factors and technical-constructive knowledge. The redefinition of the perceptual limits, moreover, assumes a strategic function in the definition of the priority macro-systems in which to bring together the single strategies and the punctual technical solutions selected according to site-specific evaluation models.

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Keywords:
Perceptual aspects
Sustainable infrastructure
Systemic approach
Technological design
Urban ecosystem.

URBAN REGENERATION THROUGH THE EXPLOITATION OF CULTURAL HERITAGE: THE CASE OF CARLO AYMONINO'S PROJECT FOR THE PAGANINI THEATRE IN PARMA

ID035

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Architecture, the city, and the landscape have always been shaped by interactions between humans and the environment. Over the centuries, changes in climate, human activities, and the evolution of technologies have shaped the form and function of our built and natural spaces. The past has left us a wealth of architectural, urban, and landscape heritage that today constitutes the collective memory of our communities. If the present requires us to rethink the way we design and manage our built and natural spaces, the future presents an even greater challenge, as we must address ongoing climate change while preserving and enhancing our cultural heritage. Therefore, the preservation of our architectural heritage becomes an opportunity to experiment with new solutions, by enhancing the characteristics of contemporary architecture in the dialectical relationship between old and new. This concept emphasizes the importance of architecture that can dialogue critically and consciously with the pre-existing architectural heritage and the urban context in which it is inserted, aiming to create a virtuous dialogue between past and present and open new perspectives for the city's future. Carlo Aymonino's project for the competition for the reconstruction of the Paganini Theatre in Parma offers some interesting ideas to deal with the current and future challenges of cultural heritage, demonstrating how it is possible to reconcile innovation with respect for the history and culture of a place through the possibility of configuring a city that expresses the intrinsic meaning of places, as is the case of historic city centers. By restoring the spatial condition of the four squares of 1776, Aymonino's project stands as an emblematic example of how to "make the new intervention an opportunity for the restoration and recovery of pre-existing historical parts" (C. Aymonino; Piazze d'Italia: progettare gli spazi aperti, Milan, Electa, 1988) by working on the theme of the fragmentation of the historical city through the design of open spaces and researching the possible achievement of formal completeness through an operational methodology that deals with making the project the means for the completion of the urban city.

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Keywords:
Conservation
Urban design
Restoration
Exploitation.

TRAFFIC NOISE MITIGATION IN URBAN MULTISENSORY ENVIRONMENTS: A VIRTUAL REALITY APPROACH TO URBAN SOUND PLANNING

ID036

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Improving the quality of the acoustic living environment is a fundamental contribution to well-designed cities. Previous research showed how multisensory stimuli affect the individuals' perception of the environment.
This study investigated how visuals and acoustic stimuli affect the experience of urban parks, specifically. Four urban parks (differing in terms of quantity of vegetation and quality of urban furniture used) were built in virtual reality.
The parks were combined with four sounds to investigate which combination could better mitigate the traffic noise of the surroundings.
Participants were asked to assess each scenario. Furthermore, participants' interoceptive awareness, mood and noise sensitivity were measured to verify their role in the perception of the scenarios. The results showed that parks with richer greenery combined with water sound had the most positive impact. In contrast, while the impact of concrete parks improved with music, coloured concrete parks improved with the sound of birds.
Finally, the positive impact of the parks increased as the participants' interoceptive awareness increased and decreased as their sensitivity to noise increased.

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Keywords:
Virtual reality
Traffic noise mitigation
Multisensory environment
Affective assessment
Environmental psychology.

THE STATIC OF TEMPORARY EXPOSITIONS

ID037

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The temporary exhibitions, increasingly widespread in recent decades, represent an opportunity for research, education, and recreation.
The communicative dimension plays a key role, and the iconic forms of the installations represent the predominant part. Therefore, the verification of the structural stability of these installations becomes fundamental. The current Italian standards are extensive and detailed about the risk of fire and the use of electricity and equipment, but not on the static safety of the installations. Without specific mandatory rules, designers could refer to the instructions provided in the technical codes as UNI EN 13782, 2015, UNI EN 13814-1, 2019 and so on. The consequence is that no indications are provided for the external loads the structure has to bear and or for the repercussions for the host building. The temporary structures are made mostly with dry-assembled light elements. The materials frequently used are steel, wood and engineered woods. The variety of possible cases makes it difficult to think of prescriptive hypotheses covering all possible situations. Therefore, indications identified on this topic are not considered binding. In this scenario, determining the acting forces is crucial in the design phase. The efforts of the earthquake on objects (statues, paintings, display cases, etc.) present in museums have long been studied. But the literature and codes don't give information in the absence of an earthquake. Considering that an exhibition is a temporary event that does not last more than two years, the period after which the Italian code (Norme tecniche per le costruzioni, 2018) requires seismic verifications, the present paper will not consider earthquake events.
This work aims to highlight the lack of guidelines and regulatory requirements on the static verification of temporary structures and show a possible design approach through two case studies.

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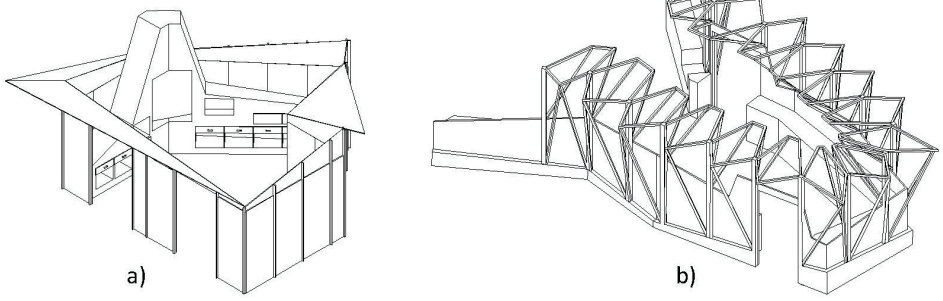

Keywords:
Wood
Engineered wood
Structural design
Cultural heritage
Temporary exhibitions.

SURVEY AND USE OF RELIGIOUS ARCHITECTURE IN GREECE

ID038

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The digital modelling of the church complex of Panagia Paraportiani, located on the west coast of the Greek island of Mykonos, part of the Cyclades archipelago, is the case study of this contribution with the aim of producing virtual models for site management. The religious complex, classified as a national monument, is considered a perfect example of local architecture due to the geometric composition of the volumes with barrel vaults covered in white lime. The characteristic shapes and volumes flanking the sinuous vaulting of the main church create an architectural ensemble of great interest. The asymmetrical shape of the entire religious complex is due to the geometric conformation formed by the union of five different churches built over the centuries. The religious site was built from the 15th century A.D. onwards, but the historical, artistic and iconographic sources collected are scarce. They consist of maps of the western gulf of the island showing the castle, now reduced to a few historical traces, and early diagrams of the religious buildings. The results were compiled into a digital database, containing the knowledge phases, point clouds and digital models. The historical layering of surfaces, the geometry of volumes and sinuous forms determine the identity factors of the Panagia Paraportiani site. These factors, through 3D modelling, carried out on a reverse modelling basis, determine the interaction between the aero-photogrammetric technique and the digital realisation of the images. The activities allow for an on-site and remote fruition of the asset, through the networking, on a dedicated app, of the textured digital model containing all the geometric information related to the shape of the religious buildings.

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Keywords:
Survey
Photogrammetry SfM
Use
Religious Architecture
Greece.

THE CITY WITH THE SEA: A RELATIONSHIP TO BE RE-FOUNDED

ID039

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A reading of the settlement forms along the two shores of the narrow Adriatic basin returns a varied image of the relationship with the coastline. However, along the western coast of this basin, the shape of the cities expresses general features linked to some shared development factors. Among these, the geomorphology of the west coast plays a priority role, as it is low and sandy except for short stretches in the Pesaro area and the Conero and Gargano promontories. Coastal geomorphology has oriented the settlement choices for the historic city cores and port infrastructures, which stay adjacent to each other, exchanging figures but not forms, where form means the structure of the city plan. Therefore, the relationship with the sea depended on trade and production systems structured through infrastructures, arsenals, customs, warehouses, and lazarettos. Another element holding the parts of the Adriatic cities together is the main infrastructural net of the western coastal strip: starting from the route of the Via Francigena, then including the railway route and the Adriatic highway, the infrastructures are arranged parallel to the coast, determining a linear development of the city by strips, interspersed by large caesuras between adjacent urban parts. The analogies recurring in the form of the Adriatic port cities correspond to design problems equivalently affecting their various parts; the actions produced by climate change also lead to finding in the geomorphological aspects the design responses to the needs expressed by the urban form and to the increased risk conditions for coastal dynamics. The contribution takes some Adriatic port cities as paradigmatic examples for the discussion, where prevalent and across-the-board design themes emerge, such as the continuity of the historic city and heritage systems along the coast, the relationship with water in the expansion areas and the parts of the informal coastline, the rapport between the city and the expansion of port infrastructures, and the overcoming of infrastructures that separate parts of contiguous cities.

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Keywords:
Port city
Adriatic sea
Infrastructure
Heritage.

THE SHORT WOOD SUPPLY CHAIN: AN OVERVIEW FOR SUSTAINABLE ARCHITECTURE

ID040

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Wood is a versatile material used in the construction process for centuries. Thanks to its natural capability of accumulating CO2 can counteract the climate crisis. The use of its derived product, engineered wood such as cross-laminated timber (CLT) and glulam, indeed could be an effective way to support the short forest-wood supply chain. It addresses environmental sustainability issues and puts into practice the basic principles of the circular bio-economy. Wood is an engine of the world economy. The current standards framework with wood reference does not yet adequately follow the rapid technological developments. Updating technical codes is crucial to prevent the short forest-wood chain from losing the associated benefits. To date, technical, economic and environmental advantages promoting well-being and comfort make wood especially appreciated for building applications. These features are further enhanced for engineered wood, enabling better performance than solid wood. Engineered wood can be a valid alternative to the most common structural materials. An example is surely the Cross Laminated Timber. CLT are panel elements realised by layers of wood glued orthogonally, always in odd numbers, symmetrical for the central layer. Its use in construction processes represents an opportunity to reduce CO2 emissions. Therefore, wood products must have certified characteristics to be placed on the market. To date, international standards contents miss specific indications for CLT. To increase its use, the update of the codes should be necessary. Using CLT allows certain milestones to be achieved, promoting the short forest-wood supply chain and reducing CO2 emissions. In conclusion, using wood, especially in its engineered form, has positive effects from different points of view. It promotes sustainable development, improves the quality of life on the planet, and promotes technological development, giving rise to inclusive-circular and sustainable industrialisation.

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Keywords:
Sustainable architecture
CLT
Engineered wood
Structural analysis
Structural Engineering.

SCAN-TO-HBIM USES FOR CONDITION ASSESSMENT OF LARGE AND COMPLEX HISTORICAL BUILDINGS IN DEVELOPING COUNTRIES: A CASE STUDY OF MERS-EL-KÉBIR FORTRESS

ID041

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The Integration of Building Information Modeling (BIM) in the heritage domain has significantly improved the safeguarding of built cultural heritage over the past few decades, which offers new opportunities to optimize restoration operations and sustain heritage asset management. While this progression is becoming more popular in developed countries, developing countries, in most cases, continue to use conventional methods, such as direct surveying and CAD drawing. These methods require significant effort and time with a wide margin of error, resulting in a considerable loss of information. In this context, the present paper aims to address this issue by applying the Scan-to-HBIM process as a support to condition assessment of the Mers-el-Kébir fortress in Oran (Algeria), one of the significant defensive structure in the Mediterranean region, which is considered a pilot project in Algeria due to its complex structure and large scale. The proposed methodology encompasses three primary stages: (1) data acquisition using Terrestrial Laser Scanning (TLS) and archival investigation, (2) processing and 3D modeling, and (3) data extraction for condition assessment of the fortress. Outcomes show that the TLS and accurate 3D modeling significantly improve the accuracy of condition assessment for the Mers-el-Kébir fortress. Despite data acquisition complexity and time requirements for 3D modeling, the Scan-to-HBIM approach fosters superior comprehension and management of architectural heritage within developing countries.

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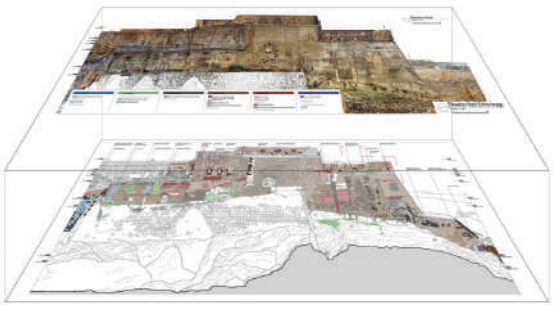

Keywords:
Large scale TLS survey
Advanced 3D modeling
Scan-to-HBIM
Historical building diagnosis
Mers-el-Kébir fortress.

THE SALMERINO VIANDANTE BY GIULIA MANGONI IN THE VILLAGE OF SAN LORENZO DORSINO FOR THE EXHIBITION BOCCATA D'ARTE 2022

ID042

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The exhibition Boccata d'Arte, a project of contemporary art created by Fondazione Elpis together with Galleria Continua and Threes Productions, aims to create a constructive dialogue between landscape, artworks and visitors. The 2022 edition called twenty emerging international artists to work in twenty Italian villages rich in centuries-old traditions little known to mainstream tourism. The Italian-Brazilian artist Giulia Mangoni presented the site-specific installation Il Salmerino viandante in the village of San Lorenzo Dorsino (TN), immersed in the Adamello Brenta Natural Park. The project, conceived following a period of residence in the territory, is inspired by the history and identity of the village deeply linked to the fish Salmerino, that in prehistoric times lived in the seas of the current mountainous area and, following the melting of glaciers, found shelter in the glacial Brenta waters becoming a source of sustenance for the first human settlements on the Alps. The research aims to focus on the project's ability to stimulate renewed awareness of the serious consequences of climate change for the mountain area, through the direct involvement of the community. Today, in fact, the Salmerino species is at the center of an important debate on the protection of the physical and biological resources of this fragile ecosystem threatened by global warming. As part of this debate, the installation wants to underline how the millennial link between that fish and its mountains is characterized by a strong component of resilience and, for this reason, the artist proposes a symbolic journey of ten Salmerino bronzes through the streets and the fountains of the village, accompanied by other ten Salmerinos carved in the native pine wood by local artisans who collaborated on the project. The bronzes are in fountains made of blocks of pink Trentino rock that preserves the signs of a geological time, and are immersed in the river water by which today depends the survival of both the fish and the village community. The research intends to deepen, through a dialogue with the artist, how much the impact of her project has favoured the development of good practices of sustainability and recovery of rural traditions.

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Keywords:
Little villages
Relational art
Global warming
Sustainability and sustainable tourism.

SHARCH.
SECOND HAND ARCHITECTURE.
A NEW LIFE FOR CONFISCATED PROPERTY

ID043

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In recent years the idea of heritage has radically changed; if for long periods this definition was limited to the idea of the monument, with the changing approach to space, the concept of "asset to be preserved" was extended to "the set of riches, material and non-material values that belong , by inheritance, tradition and the like, to a community or even to a single individual" (TRECCANI, 2023). In consideration of these changes, the research focused on new ways of approaching the system of goods to be preserved but, above all, to valorise. In this ever-expanding panorama, we can recognize in confiscated assets a resource that belongs even more incisively to a community. Paradoxically, the confiscated assets themselves can be a heritage manifesto to be reinterpreted through actions aimed at enhancing the asset within the community. This work, starting from the research project "Second-hand architecture: a new life for confiscated property", stands as a further point of view on the theme of contemporary heritage, the truest and most sincere one that really needs a second chance. Besides, in a context in which the climate emergency increasingly directs the construction sector towards a transition from linear to circular systems, minimising both resources and waste, the reuse of confiscated assets can take on a particularly topical and relevant light.

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Keywords:
Upcycling
Renovation
Reuse.

THE LANDSCAPE BETWEEN NATURE AND CULTURE

ID044

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When he «sang and played his lyre all the creatures of the earth listened to him spellbound and followed him [...]» . With these words the philosopher and aesthete Rosario Assunto describes Amphion, god of music and poetry, emblem of the historic natural city, harmonious aggregate between history and nature, founded on beauty and art, contradictory opposite to the city expression of functional thought. Schwind's cultural landscape which manifests itself in the moment in which «the dialectical relationship between nature and culture is harmoniously reconciled» , is the result of the sum of various layers, physical expression of man's culture, nature transformed into context. All the products of man fall within the notion of cultural heritage, but in the deepest sense the term expands to include nature; «when we elect some sites as world heritage of humanity, we order them so that they can tell the time of human thinking and acting. Even natural sites become part of human time, for the simple fact of being recognised, chosen and preserved by a specific generation».
The growing awareness of man in relation to nature, as theorized by Assunto more than 20 years ago, has prompted a re-evaluation of his role, undertaking processes of re-naturalisation of urban spaces, granting a new life to forgotten, arid and compromised territories, guaranteeing the development of biodiversity that man has dramatically undermined in the last century.

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Keywords:
Cultural Landscape
Biodiversity
Nature.

THE VALUE AND FRAGILITY OF TIRANA'S 20TH CENTURY WIDESPREAD HERITAGE

ID045

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The contribution is part of a wider PhD thesis research carried out in co-tutorship between the University of Campania Luigi Vanvitelli (DADI) and the Polytechnic University of Tirana(UPT) that investigates the value of the diffuse heritage in the construction of Modern Tirana by Italian architects and engineers in the period between 1939-1943. This heritage includes architectures of the ordinary that actually turn out to be typologies of use par excellence, testimonies of ways and forms of living, which represent models of compositional and material-constructive experimentation of considerable documentary interest; increasingly subject to changes, tampering and, sometimes, demolition due to the rapid processes of urban transformation that affect the territory of Tirana. The valorization of this heritage requires significant efforts by the scientific community so that investigations may contribute to highlighting the importance of architecture sometimes referred to as 'minor' in the definition of the construction and conservation of the contemporary city. The study, besides offering a frequently unpublished knowledge of some of these architectures through archival investigations carried out in various Italian and Albanian archives, reflects through cognitive documentation aimed at the recognition of the value of the work on the state of conservation of this heritage. The reflection will also dwell on the strategic value of this architectural and urban heritage for the contemporary development of modern Tirana, in light of the multiple architectural and urban transformations that have shaped and characterized the development of the capital Tirana. The aim is to highlight the possible key role of this heritage in terms of sustainable development, based on the recovery of the built heritage of high architectural value and of the fragile testimonial traces that are fundamental for the preservation of collective memory.

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Keywords:
Cultural Heritage
Modern
Widespread Heritage
Minor architecture.

A REVIEW OF THE ADVANCEMENTS OF ORGANIC SOLAR CELL TECHNOLOGY AND ITS INTEGRATION INTO PHOTOVOLTAIC APPLICATIONS

ID046

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Organic solar cells provide benefits like transparent, cost-effective processing, and customizable light absorption properties. This review discusses challenges and recent strategies to improve the Power conversion efficiency of organic solar cells, such as bandgap tuning, molecular orbital alignment, active layer morphologies engineering, electron-donating and withdrawing group incorporation, side chain length engineering, the third additive insertion, and controlling of solubility of materials. The good transparency of organic solar cells makes them ideal for Greenhouse Integrated photovoltaic applications, which has been evaluated in this review. Explored strategies significantly impact performance parameters, such as optoelectronic properties, absorption spectrum, open circuit voltage, exciton dissociation, charge transport, molecular packing, solubility, phase separation, crystallinity, and nanoscale morphology, and device stability. An optimized organic solar cell is beneficial for specific applications. As the Near Infrared portion of the solar spectrum offers significant potential for maximizing the performance of organic solar cells, future research should focus on developing stable Near Infrared active materials. This advancement will enhance the efficiency of organic solar cells. While organic solar cells have achieved notable power conversion efficiency, long-term stability remains a significant challenge. When integrating organic solar cells with greenhouses, they must withstand harsh environmental conditions often found at agricultural sites, such as high temperatures, humidity, air, dust, and light. Ensuring stability under these conditions is crucial for the market penetration and widespread adoption of this technology.

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Keywords:
Organic solar cells
Green Environment
Greenhouse Integrated photovoltaics
Building-integrated photovoltaics.

ADAPTING HERITAGE TO AN UNCERTAIN FUTURE. METHODS AND INSTRUMENTS FOR WATER LANDSCAPES IN THE CONTEXT OF CLIMATE CHANGE

ID048

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Cultural heritage is increasingly central in public and scientific debate as it is facing unprecedented challenges related to geo-hazards, human-induced threats such as growing urbanization and tourism, and environmental variations due to climate change. These include flooding, coastal erosion, sea level rise, changes in water-table levels changes in temperatures and humidity, extreme weather events, weathering, changing soil conditions, as well as biological effects. Focusing on the case of water landscapes, we aim at reflecting upon possible approaches to material heritage, including built environments and cultural landscape, and its strategic value as a driver of social and territorial development. Dealing with interventions on heritage is at the same time a precious opportunity to implement integrative approaches, starting from a scenario planning approach and an interdisciplinary perspective. The methodologies developed to counter the gradual loss of this heritage will then bring together multiple points of view and disciplines through the integrative lens of landscape projects. Cognitive and design tools sustained by information technology can provide important support to this aim, contributing to the creation of a shared platform through which expert and local knowledge can establish a dialogue.

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Keywords:
Cultural heritage
Water landscapes
Climate change adaptation
Integrated approach
Participative approach.

4.0 VIRTUAL HERITAGE

ID050

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In the current reference scenario of Virtual Engineering, 3D modeling is used to decrease lead times in the creation of complex virtual models of buildings that are difficult to reproduce with traditional approaches; professionals can process all data in the shortest possible time and correctly with new operational models. 3D laser scanning gathers data and information about the design conditions of a historical complex, avoiding mistakes at the design stage that result in high costs and wasted time, to ascertain any design problems in advance. The current era of innovations also involves photography, with high-resolution aerial and ground-based filming equipment, and with the technological transfer of 4.0 techniques and methodologies, it is possible to carry out surveying, restoration, and conservation operations of cultural heritage with a modern procedure that visualizes in a virtual environment the changes and possible design variations to be made, without the use of physical means. The focus is on the use of drones, for photogrammetry of parts or entire buildings, reducing the time compared to the more traditional analog methods, which return a faithful three-dimensional model suitable for introduction into the digital environment, the protagonist of this procedure, with the application in Virtual Reality. The described methodology has been used for the survey and analysis of the restoration of a historic palace on the Posillipo hill of the late 1700s, which allows the use of Virtual Commissioning, which represents a "facility" for clients, in the visualization of appropriate design changes and variations of restoration operations that can be carried out in real time, limiting the means and costs for such demonstrations, with a methodology that deals with reducing the time and personnel dedicated to each individual activity, with benefits related to design costs and in compliance with modern and current standards of environmental sustainability.

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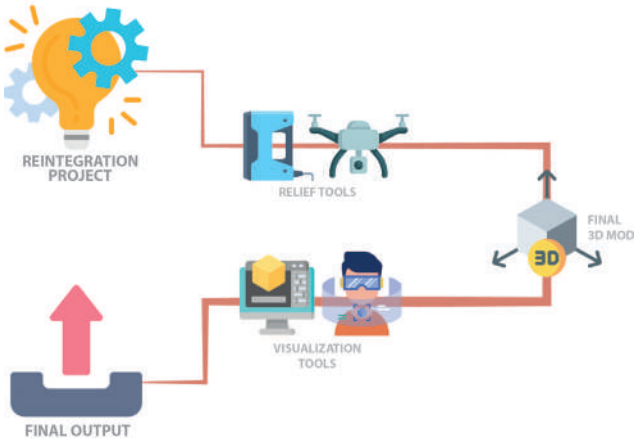

Keywords:
Virtual Reality
Sustainability
4.0 Reintegration
3D ScaN.

REUSE OF PSYCHIATRIC HOSPITALS: GRAFTING AND REWRITING

ID051

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City's reconciliation with a reduced land take can be faced through reuse of heritage, since it embodies all the energy spent for its construction. Any further effort must feed a vision of the city as a renewable and rewritable resource instead of feeding enlargement processes (VIGANÓ; 2012). Great buildings fallen into disuse represent an opportunity to take advantage of landscapes at different extents. Amongst these great buildings, former psychiatric hospitals represent a relevant example. Conceived as cities within the city, they lie today unread by urban patterns and unseen by reuse practices based on tangible and intangible values. What emerges is the absence of a proper thought on mutual relations between heritage and related urban patterns (DOTI; 2013). As known, the reasons behind the location of these complexes at the edge and outside the urban context, do not originate exclusively from separation requirements but also from their typological features. Such traits, originally compatible with the expanding aims of the city, became then neglected by urban densification processes during the 20th century. Considering this, it is believed that a sustainability-oriented approach must start from a recognition of dialogic conflicts between the fundamental features of these objects and the urban forms in the near context. With specific reference to small cities in Southern Italy and the islands, the unexpressed potential of these spaces is also called to deal with both rural and urban dimensions. In a transition from urban to architectural scale, all these dynamics need to be considered. The whole process cannot ignore, it is believed, an all-embracing and exhaustive approach to the two dimensions. In this sense, the key to the design act lies in grafting actions (COCCO, GIANNATTASIO; 2017), understood as a process capable of instilling lifeblood for a new organism, according to a vision through which the project, contextually, can give answers to the contemporary world, while respecting what exists.

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Keywords:
Architectural project
Small municipalities
Environment
Urban planning.

RESTORATION AND REUSE OF WINDMILLS IN THE CYCLADES ISLANDS

ID052

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In the context of climate change, rethinking new strategies for the recovery of old systems for transforming wind power into wind energy may represent a challenge to be pursued of considerable interest. In this context, the reuse of disused industrial archaeology heritage, as is well known, constitutes a widespread practice aimed at the sustainability of places and the preservation of the historical memory of a territory. Within this scenario, the research proposes the knowledge and documentation of the complex system of disused and heavily degraded windmills on the Cyclades Islands in Greece. In particular, the research proposes a historical analysis of this heritage, with a focus on restoration issues aimed at the conservation and valorisation of an interesting historical and cultural heritage in danger of disappearing. In this regard, ICOMOS defines these vernacular testimonies as "an expression of the culture of a community, of the relationship it establishes with its territory and, at the same time, an expression of cultural diversity in the world". It is in this context that the area under investigation is regarded as a veritable heritage of industrial archaeology from the medieval period, the development of which anticipated the great technological development of machines in the Renaissance period. The aim of the investigation was to provide possible intervention strategies for the conservation and reuse of the surveyed heritage, in order to reintegrate it into the context of contemporary cities while fully respecting its historical and architectural values.

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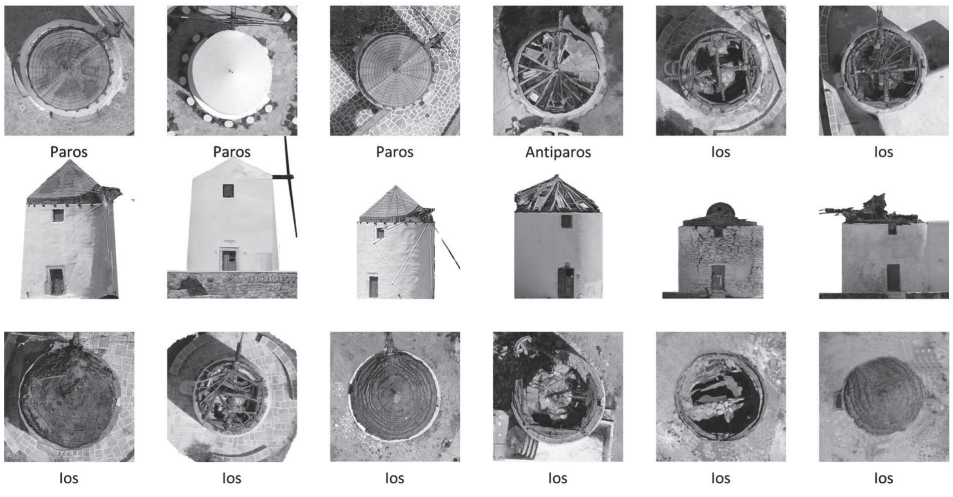

Keywords:
Windmills
Greece
Documentatio
Restoration
Reuse.

EVALUATION OF URBAN HEAT ISLANDS IN A PERIPHERAL AREA IN TIRANA, ALBANIA, WITH THE ENVI-MET MODEL

ID054

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Analysis of climate conditions in urban scale can fundamentally influence in the environmental sustainable building design. Urban morphology can affect local climate conditions, as increasing for example temperature of a living area causing the so-called phenomenon of Urban Heat Islands (UHI). The purpose of this study is to analyse possible UHI in the context of a small area in a peripheral zone in Tirana, Albania; using the microclimate software ENVI-met®. Some of the most important microclimate factors such as air temperature, air humidity, solar radiation and wind speed have been considered. Three main case studies were taken in analysis: the base case, the green case (use of green roofs) and the cool case (use of cool roofs). Each of them differs in some parameters, offering various extra parameters, which may affect thermal conditions. The area taken in consideration have low-density urban structure, with a large open plaza and streets with vegetation. Our work a good reference for further urban planning studies in city centre or high-density areas.

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Keywords:
Urban heat islands
Energy and buildings
Building simulation
Envimet.

THE PERFORMED BASED REGENERATION OF AUTHOR SOCIAL HOUSING DISTRICTS

ID055

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Keywords:
Participatory Energy Retrofit
Dialogic technology design
Resilient energy
Decarbonization
Social housing.

In a global logic of "performed-based" regeneration, the renewal wave of the "first cycle of the built environment" (CRESME, 2020) is reordering the construction sector in Europe, which starting from actions to ensure energy-environmental efficiency as a horizontal guiding principle, aims at the higher goal of decarbonizing the existing building stock and alleviating energy poverty for social housing (EPBD 2023). In fact, the European Commission recommends a transition to "resilient" energy for a circular and climate-neutral economy, breathing new life into author social housing districts, in which the regeneration process based on a thorough and structured knowledge of the built heritage becomes the locus of "experience" for a high-performance technological retrofit with a renewed mode of management. Through actions that go beyond mere performance improvement, the Renovation Wave orients in relation to the target audience, focusing particularly on low -and middle-income households and vulnerable people and areas, involving inhabitants in the transition process. On the other hand, the New European Bauhaus, a movement built on the principles of sustainability, inclusiveness and aesthetics, interpreted as a driving force behind the European Green Deal, is based on "innovative, actractive and human centered way" (A New European Bauhaus, 2020). This action focus also takes into account a "technological design dialog" between low-impact materials (renewable, durable, reusable, recyclable) and technological knowledge required by a market that is now mature in recognizing the added value of energy-environmental efficiency (Oyebanji, 2017), but not really aware of the effective solutions that can be implemented to empower building and urban improvement actions, which makes the built environment the main construction market today (CRESME, 2020). Minimizing the footprint of buildings by using resources in an efficient and circular way and turning the building sector into a carbon sink is the main challenge. Responding to these targets requires at all levels an "ecological intelligence" (Goleman, 2009) that rethinks the wide variety of environmental impacts associated with the production of building materials, the operation of buildings and their related systems, as well as the processes that have taken place within built-up areas, which are significant in terms of rate, scale and evolutionary dynamism (Elmquista et al. 2013). The 'Viviendas Sociales Antonio Rueda' in Valencia is the signature social settlement on which the Participatory Energy Retrofit approach is being tested.

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DWELLING OF OTHER "TIMES": THE PALACE OF THE TRINCONCO IN BUTRINT

ID056

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The research deals with the study of the historical documentation and survey of the Trinconco Palace in Butrint in Albania. The site, whose geographical position opposite the island of Corfu is known from literary sources, is situated on a low promontory surrounded on three sides by the waters of the lake and the channel connecting it with the Ionian Sea. Early archaeological investigations have identified much of the city walls, the sanctuary buildings and the city, thanks to the Italian Archaeological Mission directed by archaeologist L. M. Ugolini from 1928 to 1936 and later by P. Marconi and D. Mustilli until the outbreak of World War II. The excavations later resumed under the Albanian direction of the Butrint Foundation and continued until the city of Butrint was declared a UNESCO World Heritage Site. The Trinconco residential palace is located in the southern part of Butrint. Initially, it was misinterpreted as a church with a martyrium, but subsequent historical and archaeological research revealed that the Trinconco environment was actually an important triclinic, part of a late antique domus. The building underwent several construction phases: initially, the domus was built around a peristyle atrium, where rooms decorated with mosaics and a large apsidal hall, used as a reception room, were found. In a second phase, around the V century, the building was further extended and a triclinium with three apses was built, known as the triconco, from which the domus took its name. The total absence of floor and wall coverings in the area occupied by the second phase buildings would suggest an early abandonment of the structures. In fact, the architectural design of the Palazzo Triconco was never completed and work was probably interrupted due to the rising water table fed by the nearby Vivari Canal, which periodically flooded part of the building. The study made use of innovative technologies, such as four-helix drones and 3D restitution software that allowed for the creation of surveys and digital models of the entire area. The contribution presented here is the result of an interdisciplinary research between history and architectural survey that integrates the analysis of the sources with the adoption of survey methodologies and photogrammetric restitution, providing an interesting, as well as complete and detailed, documentation of the site, in order to propose innovative strategies for the protection and valorisation of the territory and architecture.

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Keywords:
Documentation
Knowledge
Triconch
Cultural Heritage
Representation.

SYNCHRONIC BORDERS BETWEEN HEALTHY CITY AND REVEALED NATURAL HERITAGE: THE CASE OF THE SAN ROCCO RAVINE IN NAPLES

ID057

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Climate change is directly linked to traffic pollution, affecting the quality of air and the health of the city environment. Besides, car mobility increases the risk of cardiovascular diseases and the way the city is designed discourage any different type of mobility and lifestyle. At the same time, there's a hidden, enclosed heritage in residual urban greenery and abandoned historic buildings that is denied only for accessibility issues. This heritage has the potential to be a "place of Life", but it needs innovative strategies and design approaches to unlock it. The proposal is part of the PRIN 2015 research project The City of Cure and the Care of the City where the soft mobility is conceived as a tool for the opening of enclosures in order to create health nodes capable of improving air quality and inspiring more active ways of experiencing the city (Miano, 2020).
In this framework, the Ravine of San Rocco is an "underground ecosystem", a denied heritage house for rare species of birds and plants of which 90 of the 100 hectares are inaccessible due to the morphological nature of the valley, which makes it unperceivable except as a boundary between different suburbs. In examining boundaries, "the limit is where things end; the border is where different groups interact. On borders, organisms even become more interactive, precisely because of the encounter of different species and physical conditions" (Sennett, 2019).
Touching those boundaries, the project aims to force the morphological edge into an interactive, dynamic, border that emphasize the ambiguity between city and nature. On borders, nature, public space, and infrastructure must interlace in a synchronic and complex way. At the same time, the reuse of old, abandoned buildings and quarries can enhance the quantity and quality of urban events keeping the density up despite the extreme salubrity of the environment. In that way these borders can become at the same time "place for Life" and "place for experience", since the urban events, the connection and the fruition of the underground ecosystem happen all on the same site encouraging a healthier lifestyle and mobility.

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Miano P., Bernieri A., 2020, a cura di, CURACITTÀ NAPOLI. Salubrità e natura nella città collinare, Quodlibet, Macerata.

Keywords:
City/Nature
Infrastructure
Urban Ecosystem
Reuse
Accessibility.

FRENCH CULTURAL CONTRIBUTIONS IN 19TH CENTURY HOUSING IN THE CITY OF RECIFE, BRAZIL

ID058

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The type of settlement in the cities' housing areas is directly linked to the cultures that founded them and refers to the various climatic, structural and aesthetic factors that enclose it. Based on the principle that those cities' areas configured a heritage built by its population, the knowledge of these settlements with their particularities becoming tools for safeguarding interventions with environmental quality, reverting to benefits for the entire city. The conformation of the housing areas of Recife, Brazil, in terms of their location in the city, the division of their rooms and the internal composition of these had at first the heritage of their Portuguese colonizers, who brought to Brazil the structuring of their dwellings from the 16th century on. Later on, those dwellings received the contribution of the French modus vivendi of the 19th century, which redefined not only the aesthetics of the buildings but also resulted on the direct development of the housing social spaces at that time. This article shows how the compositional principles of the prevailing classicism in Europe enters the 19th century in architecture and interiors, sending contributions to aesthetical, functional and constructive demands, with reflections on the houses' salubrity, which began to adapt more and more to the climatic factors of the city from then on.

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Keywords:
Classicism
Housing
Social house spaces
Composition
Aesthetics.

AN ECOSYSTEM-BASED APPROACH TO IMPROVING THE CLIMATE RESILIENCE OF CULTURAL LANDSCAPES

ID060

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Climate change has become a significant threat to the cultural landscapes in its key components of natural capital and cultural heritage. The impacts of climate change on the environment, on social systems and on the economy, as well as adaptation measures have been widely investigated. However, studies addressing climate resilience in landscapes are still incomplete and lack of an integrated vision. In this study we focus an ecosystem-based approach to landscape planning as an integrated approach capable to challenge ecosystem resilience as well as cultural heritage resilience to climate change. The case study is provided by the LIFE Greenchange project "Green Infrastructures for increasing biodiversity in Agro Pontino and Maltese rural areas" and is constituted by the large reclamation plain of Agro Pontino, characterized by intense agriculture and by relevant elements of the rural historical landscape, included in the UNESCO MAB area of the Circeo National Park. The goals of the study are to present the methodology rooted on ecosystem mapping and ecosystem services assessment developed by Greenchange and validate its effectiveness to enhance biodiversity and the quality of habitats, but also to restore and preserve such cultural heritage and counteract climate change. The analysis of the environmental restoration interventions of the Greenchange project emphasized the multifunctional role of green infrastructure within the rural landscape. These linear ecological connections (windbreaks and riparian strips) provide a wide variety of ecosystem services of provisioning and supporting, and also provide non-material benefits and cultural and recreational ecosystem services to the community.

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Keywords:
Climate change
Natural capital
Landscape heritage
Ecosystem services
Landscape planning.

EVOLUTIONS AND APPLICATIONS OF KNOWLEDGE APPROACHES TO THE RESTORATION PROCESS OF HISTORIC GARDENS

ID061

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The approach to protection and safeguarding of the complex of historic parks and gardens proposed by the Charters of Restoration of Historic Gardens - ICOMOS - IFLA and Italian - issued at the end of the 20th century on which the scientific community has extensively debated over the last four decades has highlighted both the wide range of heterogeneous postures assumed by academics in relation to the indications contained in the documents and the need to configure an advancement of the framework of prescriptions within which to structure a protocol that brings together the theoretical aspects of reflection and the practical implementations necessary for intervention on the subject. Several suggestions seem to be made through which to profile this evolution. The existence of a large number of considerations, capable of swinging attention between systemic or capillary issues, leads to the articulation of an evolutive path of documents that can take on the value of a binding law, in order to guarantee the uniform execution of all knowledge actions preparatory to the restoration project, to ensure the coherence of design choices with the peculiarities and stratifications presented by the artefact, but which at the same time does not adopt criteria of strict prescription in relation to the possibilities that a project, conceived in respect of these two mandatory terms, is able to identify.
This contribution, starting from the analysis of the different disciplinary positions taken by the academy in the field of the restoration of historic gardens, proposes a hypothesis of synthesis of innovative and consolidated methodologies applied to the case study of the Jardin del Principe in Aranjuez aimed at broadening the necessary knowledge actions finalized to the restoration project.

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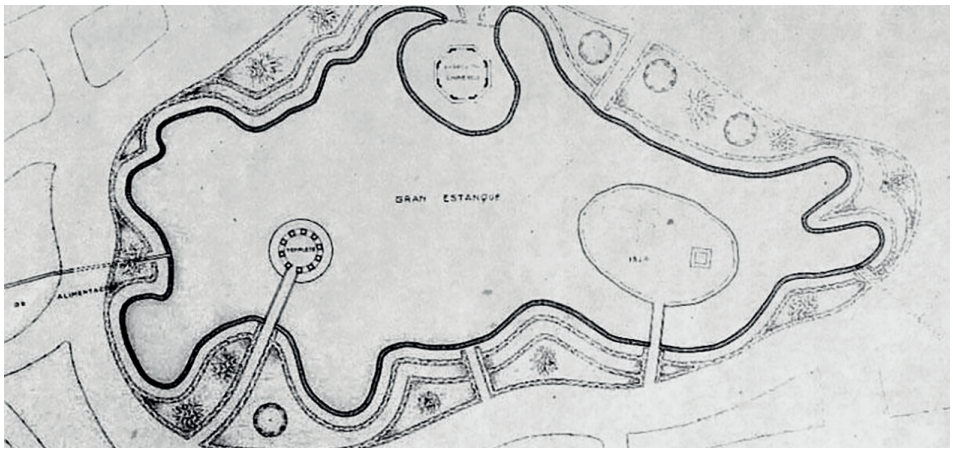

Keywords:
Historic Gardens
Restoration
Knowledge
Protection
Valorisation.

BUILDING-INTEGRATED VERTICAL MICRO-WIND TURBINE IN THE SOUTH OF ITALY: ENERGY, ENVIRONMENTAL AND ECONOMIC ASSESSMENT OF A TYPICAL CASE STUDY

ID062

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The energy systems serving residential buildings significantly contributes to the worldwide energy demand. Renewable sources are gaining more and more attention to address the public awareness associated to the climate change. In particular, the scientific interest on small-scale wind turbines is significantly increasing thanks to their low maintenance cost, high reliability, wide wind operation range and reduced environmental impact. In this paper the performance of a commercial vertical micro-wind turbine while serving a typical single-family house located in Naples (south of Italy) have been analyzed by means of the TRaNsient SYStems simulation tool (TRNSYS). This software is widely adopted in the scientific community for detailed modelling of energy systems as it takes into account the transient nature of building and occupant driven loads, the part-load characteristics of generation systems, as well as the interaction between loads and systems' output. An annual stochastic profile (consisting of 365 different daily stochastic profiles) has been considered for defining the electric power demand of the building. Climatic data (including wind velocity) have been obtained from a specific EnergyPlus weather data file based on satellite and weather station measurements in Naples. A detailed dynamic simulation model, validated in contrast with experimental data, has been used to fully characterize the electric output of the vertical micro-wind turbine as a function of the wind velocity.
The energy, environmental and economic performance of the building-integrated vertical micro-wind turbine have been compared with those associated to the same building while served by the central electric grid only. The comparison has been performed in order to assess the potential savings in terms of primary energy consumption, equivalent carbon dioxide emissions as well as operating costs and, therefore, evaluate the suitability of the proposed system with respect to the traditional scheme.

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TRaNsient SYStems simulation tool, https://www.trnsys.com/.
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Keywords:
Renewable energy sources
Wind energy
Micro-wind turbine
Energy saving
Building dynamic simulation.

ORIENTALISM IN ARCHITECTURE. THE CASE OF THE HÔTEL DE VILLE IN BISKRA CITY (ALGERIA)

ID063

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The aesthetics of a building are a core design principle that defines a design's pleasing qualities. They have been one of the principal aspects considered in architecture throughout history. Algeria has experienced the passage of diverse cultures and civilizations, which are reflected in its built environment. The French colonisation of Algeria (1830-1962) adopted different architectural styles whose main aesthetical features were various. This article discusses Orientalism in architecture through one of the most controversial colonial styles, the "Neo-Moorish style" or "Arabisance." To better understand the subject of this paper, the Hôtel de Ville in Biskra City was selected as a case study. Using a historical approach, the aim of this article is, on the one hand, to ensure the contribution of Algeria to the history of architecture through the revelation of one of its important periods, that of French colonisation. This article establishes the point of articulation between Islamic aesthetics and French colonial architecture in order to critique the multiple references to colonial architecture in Algeria. On the other hand, this article encourages the local authorities to preserve this building, which attests to one of the styles that have marked the history of Algerian architecture.

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Keywords:
French colonisation
Algeria
Biskra City
Neo-Moorish style
Orientalism.

BIO-BASED LANDSCAPE MATERIALS FOR MITIGATION OF CLIMATE CHANGE IN CITIES

ID065

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The impact of climate change on the urban environment is one of the world's challenges over time. These impacts, such as high levels of water, desertification, drought and human activities, have made the shift towards a sustainable approach imperative. With various urban design techniques and sustainable solutions, urban areas may overcome these effects. Thus, considering the low-carbon approach into landscape design, healthy cities can be constructed. One of the main concepts of sustainable landscape design is the use of environmentally friendly materials to mitigate climate change on the urban scale. A particular solution is relying on bio-based products, that were produced from renewable resources. These materials have the potential to increase urban areas resilience, resource efficiency, and low carbon footprints. Bio-based materials are being used more frequently in construction. Whereas, in this study, we focus on the potential uses of bio-based materials in landscape design to address climate change, as well as their environmental impacts, circularity features and challenges. By acknowledging the value of bio-based materials, we can build low-carbon infrastructure and sustainable cities.

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Keywords:
Urban design
Sustainable landscape
Low-carbon infrastructures
Circular economy
Nature-based solutions.

A CITY WOODLAND: ORINETI PALACE IN AVERSA

ID066

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Over the centuries, various noble families have lived in Aversa and contributed to the construction of stately palaces that still bear witness to the city's great past and historical and architectural value. In particular, the Orineti family, of Norman origin, owned a building located in the old town centre of Aversa: palazzo Orineti. The palace is the result of the aggregation of several houses acquired by the family over the centuries. An evaluation from the mid-19th century allows to reconstruct the configuration of the palace at that date. From the document, which is accompanied by plans, is possible to deduce the original structure of the building and especially the large extension of the adjoining gardens. A first large building, with an entrance on the Scalella road (today's Via Drengot), with a noble flat, a painted vaulted gallery, service rooms and granaries, developed around a central courtyard divided by a grotto and a loggia to a second courtyard with stables and sheds. An iron gate with rusticated pillars of Doric order gave access to the first garden with four parterres bordered by paths marked by boxwood plants and set at right-angles, in the centre of which there was a circular fountain. A semicircular staircase gave access to a second garden with four parterres and a semicircular fountain placed on the boundary wall, that was developed in an east-west direction as far as the Santa Marta road. A second building called "casa piccola" gave access to the garden called "boschetto", planted with various fruit trees. To the side of the first courtyard there was a fourth small garden also surrounded by walls, partly uncultivated, with a well and cistern. The 19th-century evaluation of the garden areas took into consideration a number of positive factors: the fertile land suitable for all types of cultivation, the location in the centre of a densely built-up area, the healthy air that could be breathed all year round, the good condition of the roads leading to the gardens and the surrounding walls that protected the green areas from possible devastation. Today only a few remains of the original configuration. In fact, the large palace and the small house have been altered and transformed over the centuries. Even the garden areas, of which brief fragments survive, have been largely altered but still remain as evidence of the ancient relationship between architecture and nature.

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Keywords:
Documentation
History of Architecture
Aversa
Historical palace
Orineti family.

SHAPING AFRICA'S URBAN FUTURES: PLANNING ANF GOVERNANCE DILEMMAS

ID067

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Urban planning and governance in Africa are still tied to the colonial tradition, and have not adapted fast enough to the reality of rapid urban change in the post-colonial period. UN-Habitat estimates that Sub-Saharan African cities have close to 200 million slum dwellers, most of who work in the informal sector where they simply do not earn enough to afford a high standard of shelter and services. These slums contrast sharply with elite neighbourhoods where the affluent few enjoy high quality housing and residential environment. What does sustainability mean for such cities and townspeople? Many planners and government officials, who have idealized notions of the modern African city, tend to dismiss the informal sector as 'a chaotic jumble of unproductive activities' that should be removed through forced eviction and other forms of repression. We argue that while these officials have the responsibility to uphold the law that protects public health and the urban environment, they must recognize and come to terms with the local reality of rapid urbanization and extensive urban informality in the continent, now and in the foreseeable future. Current research suggests that the path to urban peace and sustainability in Africa lies in building more inclusive and socially equitable cities that are not disconnected from people's needs; cities "where everybody, irrespective of their economic means, gender, age, ethnic origin or religion are enabled and empowered to participate productively in the social, economic and political opportunities that cities offer". The papers tries to provide fresh insights on pathways to sustainable African urban futures, and on appropriate urban planning and governance models and visions for the continent.

Keywords:
Africa
City
Inequality
Planning
Living conditions.

LOCAL KNOWLEDGE FOR ENVIRONMETAL PROTECTION AND CLIMATE CHANGE ADAPTATION IN AFRICA. TOWARDS DECLOLONIZING CLIMATE SCIENCE

ID068

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African knowledge systems have for a long time been undervalued because of the undue dominance of Eurocentric mindsets and practices. We argue that climate science, like other fields of knowledge needs to be decolonized to integrate the traditional knowledge of local communities in the Africa. The continent contributes least to, but suffers the most from the negative impacts of climate change. How can Africa cope better with the worsening threats of flooding, drought and other emergencies that result from extreme weather conditions? The paper underscores the value and continuing relevance of indigenous knowledge for environmental protection and climate change adaptation in Africa. It argues that while Africa stands to gain from global science and international best practices, the continent should search within its own knowledge systems for appropriate ideas and approaches to many of its development challenges, and that indigenous knowledge may provide a model for rethinking and decolonizing climate science. Local communities in different parts of Africa have over the years developed intricate systems of forecasting weather systems in order to prevent and mitigate natural disasters; traditional techniques of soil management, pest and disease control, adopting suitable crop and animal varieties, and so on. The unprecedented scale of climate change today may have undermined the reliability of many traditional indicators for predicting the pattern of climate variability, and techniques for preventing and adapting to climate induced natural disasters. There is therefore a need for those who hold and use traditional knowledge to partner with scientists and other stakeholders in order to co-produce updated knowledge for better climate risk management. Researchers and the development community should tap into the time tested resource of indigenous knowledge for locally appropriate and culture-sensitive ways to engage with the environment, and adapt to the negative impacts of climate change.

Keywords:
Africa
City
Inequality
Planning
Living conditions.

SMALL CENTRES IN THE ALPS REGION: THE CHALLENGES OF CLIMATE CHANGE IN A SUBSISTENCE ECONOMY

ID069

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Keywords:
Climate change
Alpine region
Territorial management
Resilience
Heritage.

Climate change has been having a significant impact on alpine regions, leading to a change in temperature, precipitation and extreme weather events. These changes pose significant challenges for management of these areas, as they affect the fragile ecosystems and the communities that depend on them. The traditional landscape construction can contribute in preserving the cultural heritage of alpine regions. These techniques, can not only be an effective tool for managing the impact of climate change by stabilising the slopes, regulating water while protecting the hydrogeological balance, but it also serve as a testament to the ingenuity and resourcefulness for the locals, between viticulture and the alpine environment as part of the Unesco intangible heritage. However, traditional landscape construction and shaping techniques have proven to be effective tools in managing the impact of climate change and its associated challenges. In the last two decades, numerous EU projects have contributed to the diffusion of these techniques, including dry-stone walls terracing, orientation of dwellings, shaping of urban streets, passages through courtyards, connections along elevation and main slopes, and the use of local materials. Scientific literature highlights the importance of the dissemination of traditional building techniques and the use of local materials in enhancing the resilience of communities in high-risk areas. Since 2009, the authors have been conducting a study on the climate and microclimate in historical buildings in the Alpine region, specifically in the towns of Tirano, Poschiavo, and Teglio. The study involved climate monitoring using probes placed in these town centers, and the obtained data was compared with temperature and precipitation trends recorded since 1864 to date on annual and monthly bases by meteorological stations and data archives (MeteoSwiss). The study aims to provide valuable insights into how traditional building techniques and local materials can promote resilience in high-risk areas in the face of climate change. The findings of this study confirm the observed increase in temperature trends and the occurrence of severe weather events.

The paper presents a comparative analysis of microclimatic data collected from various buildings and their correlation factor with other building/urban characteristics, such as: building size, materials, damage, openings, use, local environment, nearby urban form, and solar irradiation throughout the year. The study's results suggest that further research is needed to determine the primary factors influencing changes in the microclimate inside buildings. However, given the complexity of the issue, ongoing discussion and collaboration will be necessary to fully address the challenges posed by climate change in the built environment following with guidelines for mitigating the impact of climate change on building environments.

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VJOSA WILD RIVER NATIONAL PARK INTERNATIONAL WORKSHOP, 4 -12 APRIL 2023. A DIDACTICAL AND THIRD MISSION ON GOING EXPERIENCE

ID071

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Keywords:
Cultural and Natural heritage
Vjosa river national park
Sustainable tourism
Internal area
Local development.

The contribution collects the design explorations conducted by the students participating in the Worskhop Vjosa Riverfront, organized in early April 2023 in collaboration between the Faculty of Architecture and Urban Planning of the Polytechnic University of Tirana and the Department of Architecture of the University of Chieti and Pescara, under the mandate of the AKTR, Republic of Albania. The initial objectives of the Workshop - to combine projects with high environmental sustainability "in an innovative way the themes of environmental protection the protection of cultural and environmental heritage and the development of sustainable economies, in particular in the framework of tourism" – are pursued within a common basic vision. This vision assigns to the constituting Vjosa River National Park unprecedented tasks, within national policies, aimed at tackling adaptation to climate change, the conservation of natural and cultural heritage, risk mitigation, the promotion of sustainable forms of development and fair and responsible tourism. The basic vision proposed for the Vjosa River National Park is based on two fundamental principles.
The first is to work for an enlargement of the extension perimeter of the integral protection area of the Park, also accompanied by a wider landscape conservation area, beyond the current protection area, which at the moment coincides almost entirely with the only bed of the river. The second is to recognize and strengthen the territorial relations between the opposite banks of the river (along the "territorial transects" which acquire a sense of urban and territorial design on an intermediate scale), encouraging, along these lines, the development of tourist and economic activities highly sustainable.
The idea is to export the foreseeable economic effects induced by the constitution of the Park to the "internal areas" and to the "villages" located on the valley banks of the river and on the margins of its main crossings, trying to govern and direct the ongoing processes, thesis today to colonize and alter the spaces closest to the bed of the river, at greater hydrogeological risk. The projects presented, accompanied, according to a common system, by an analysis of the context conditions and oriented towards the definition of local development objectives and strategies, also arise to stimulate the commitment of administrators, stakeholders and local communities to innovative solutions and experimental. These projects also refer to the procedures of tactical urban planning, and to the use of procedural innovations such as "collaboration agreements" and "regulations for the shared administration of urban commons", favoring the strengthening of the capacity building of the institutions and the set of actors interested in the result of the work, within territorial contexts marked by large territorial differences and subject to strong demographic decline.

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MISENO:
NEW CULTURAL PATHS

ID072

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The proposed is the creation of sustainable tourist routes in the municipality of Miseno. Compared to other forms of tourism, sustainable tourism aims to create situations of well-being and long-term work, involving businesses, tourists and local and national government authorities in promotion and development programs for future generations as well. In line with the indications that lead towards the ecological transition and in conjunction with some prepared in the area, such as the "Ciclayak" Project, supported by the AMP Baia Chain Association, a sporting-cultural itinerary of an environmental nature could be created, including some sites in the path. Through the identification of potential itineraries, both cycle-pedestrian and marine, one would seem to tame the historical territory, managing to tell the old pre-existences from a new point of view that is not only historical and cultural, but also sensorial. These connections aim at territorial redevelopment involving many of the territorial skills, generating new economic opportunities. The first step would focus on improving connections and analyzing the critical points of the place, making the most of collective and/or "green" mobility. Sustainable mobility understood as mainly cycling mobility is one of the tools we can implement to improve urban traffic and improve open spaces, not to mention the benefits it would bring to people's health and well-being. This will generate decarbonisation and will also improve the management of those infrastructures equipped for mass transport. The second step would include the identification of territorial routes capable of reviving a hidden part of this territory. The third step would consist in the creation of storytelling capable of keeping tourists always active and involved during the journey. The fourth and final step would identify marketing strategies linked to the territory. The goal is not to generate non-quantitative but qualitative tourism, offered to the masses but with greater awareness.

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Keywords:
Miseno
Tourism
Cultural Heritage
Ecological Transition
Connections.

TRADITION AND INNOVATION IN CONSTRUCTIVE CULTURES. BUILDING WITH EARTH, SUN, WATER AND AIR

ID073

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At present, in a West in crisis and in an increasingly interconnected world, the question of what the contribution of architectural design can be for sustainable development, looking at the "Global South", now appears an unavoidable necessity. Sub-Saharan Africa in particular, oppressed by the consequences of colonialism still present and by devastating economic, social, health, and environmental crises - emergencies that until recently seemed far from the Western world - offers us, however, a different model of growth, supported by a strong resilience of its populations. Based on this, the Burkinabe architect Francis Kéré, winner of the 2022 Pritzker Prize, has developed a design method infused with visionary realism, and is acting in the field based on the expectations of communities and the bonds that unite them to their territories. Like him, many architects - not just Africans - are offering younger generations an example of how it is possible to build, with limited means, constructions suitable for the contexts for an eco- sustainable future, transmitting not only technical knowledge but a strong ethical sense. His architecture, united by materials and techniques resulting from intelligent updates of housing and building traditions, is generating a shared language. Economic sustainability is guaranteed using locally available and recyclable materials; environmental sustainability is achieved through simple means, using renewable energy resources (earth, water, wind, sun, vegetation) to create natural ventilation and cooling systems and water collection.

These architectures shape the earth, collect water, manage air, modulate the sun and wind, and preserve fire. Intuitively, the capture of solar, air, and water energy, on the one hand, and protection from them, on the other, become the generators of architectural forms: layered roofs, powerful walls, lightweight envelopes, wind towers, porches, verandas, terraces, and lodges to offer shade and shelter. If during the modern era the use of traditional materials and techniques, albeit revisited, seemed a choice of backwardness, attributable to a conservative and autarkic climate, and if after World War II it was synonymous with poverty and backwardness, today such choices seem to look to the future, and open new prospects if supported by intelligent innovations.

Western architectural culture has much to learn from this new simplicity and essential realism.

Keywords:
Traditional construction
Environmental sustainability
Architecture in the "Global South"
Low tech
Architecture and climate.

A MULTISPECTRAL SURVEY FOR SURFACE MONITORING

ID074

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The study is part of a larger research project entitled PREVENT - Integrated procedure for Assessing and improving the resilience of existing masonry bell Towers at territorial scale, funded by "V:ALERE 2019 program" and concluded in December 2022. The main project's objective was to develop a scientific methodology for the knowledge and definition of analysis method intended to preserve existing masonry bell towers through the synergy among the academic disciplines of Drawing, Technical Physics and Structural Engineering. One purpose of the project has been to gather data beforehand to make it easier to rapidly decide where to intervene in the event of terrible circumstances. These data are input for databases and three-dimensional models for multidisciplinary and predictive analysis. Therefore, a scientific procedure for the survey of architectural assets through Reality-based technologies has been outlined. Various terrestrial and aerial sensors have been tested due to the unusual height of the items and the requirement to collect data in both visible and infrared spectrums. The critical use of ICTs provides the opportunity to acquire the asset's health condition at the time of the survey, as well as track any changes over time, including surface variations due to climatic factors. ICTs are crucial for documenting and monitoring Cultural Heritage affected by climate change. These technologies allow of pouring the acquired information into a platform for processes of conservation, planning and maintenance of the site, also to increase economic and environmental sustainability in the management of assets. This article details the outcomes of the architectural and thermographic survey operations conducted on the bell tower of the Santa Lucia Vergine e Martire di Cellole (CE) church. The property is currently inaccessible to the public and in a state of profound neglect. It was decided to integrate Range-based and Image-based technologies to capture the data. The data collected thanks to air and ground image-based technologies played a crucial role in subsequent degradation analysis.

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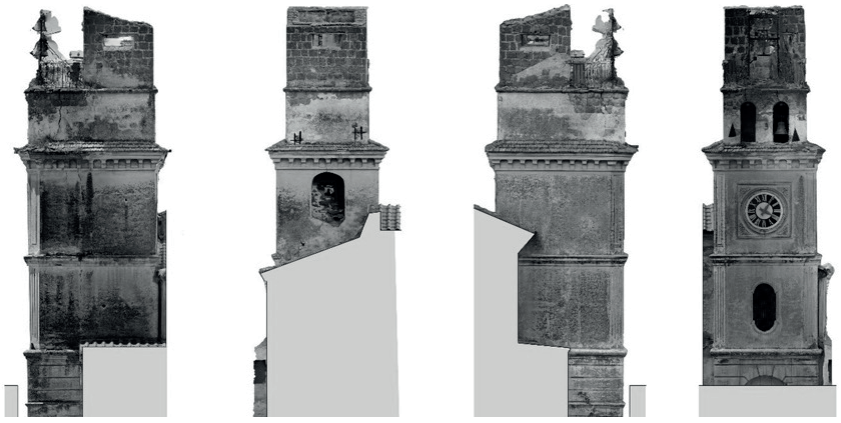

Keywords:
Masonry bell tower
Surface survey
Reality-based technologies
Infrared thermography
UAS.

TOURISM PROMOTION STRATEGIES FOR THE DESIGN OF CULTURAL ITINERARIES IN INNER AREAS WITH THE USE OF GIS IN THE CASE STUDY OF STIGLIANO

ID075

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Cultural tourism routes are tourism promotion strategies that have seen a remarkable development in recent years, due to their potential to enhance the value of cultural heritage. In this sense, cultural itineraries have received institutional recognition from groups like ICOMOS or the Council of Europe, while national and international organizations as well as private efforts have created tourist routes that cover a wide range of topics. This main goal of research is to present a suggestion for the creation of cultural tourist routes using a geographic information system. To achieve this, a succinct theoretical framework is necessary to examines how tourists utilize geographic information systems and how they conceptualize travel routes and how they differ from itineraries. Thus, the methodology employed consists of two separate phases. In order to create a tourist route in territory of Stigliano, As the center of the network of Municipalities of the Montagna Materana, a quantitative and qualitative study is conducted in which data on different layers such as cultural, heritage factors and landscape are collected. This is followed by the use of a GIS to create an index of tourist potentiality. In this way, the findings gained support the route chosen and the municipality selected based on the better availability of tourism resources (accessibility, hospitality, etc) and cultural (historical values) in those locations. All of this is meant to reactivate a heritage that, due to their shared history that has been developed over centuries, has renowned potential for tourism and cultural promotion.

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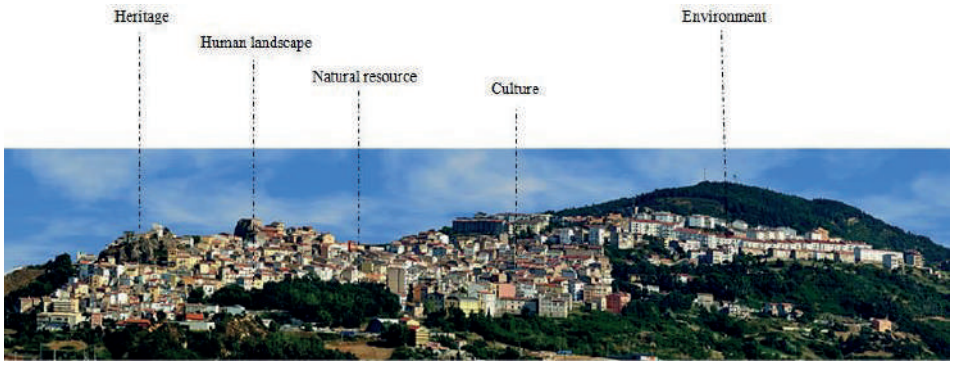

Keywords:
Inner area SNAI
Montagna Materana
ArcGIS
Cultural heritage
Cultural landscape.

THE SURVEY OF DECORATED SURFACES FOR THE RESTORATION PROJECT: THE CASE OF THE FLOOR OF THE CHURCH OF SANTA MARIA VISITAPOVERI IN FORIO

ID076

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Piazza Municipio, next to the Church of San Francesco d'Assisi. Its construction dates back to the foundation of the homonymous Archconfraternity, existing from 7 October 1601. The church consists of a single nave flanked on two sides by wooden stalls: it is covered by a barrel vault whose lunettes frame paintings enriched by a valuable decorative stuccoes. At the end of the nave, near the presbytery covered by a dome, there is the marble altar. The sacred building has some singularities including the double facade (one that closes the church square and one that gives access to the church) and, above all, the rich majolica floor, realized in the second half of the eighteenth century by the renowned neapolitan master Ignazio Chiaiese. The floor appears in many areas in an advanced state of degradation: there are evident detachments of the enamel and the decorated surface, as well as depressions and planimetric deformations. In view of operations of restoration of the majolica surfaces, it appears necessary a survey campaign with the purpose, in addition to documentation through the canonical graphics of survey, of the chromatic analysis and of deformations of the entire floor. The photogrammetric survey proved to be appriopriate to the fixed goals and returned a point cloud model comparable in density and morphometric reliability to the one realized by laser scanning, with high resolution chromatic rendering. The produced 3D model, the graphs of survey, the orthoimages and the DEM have guaranteed a high reliability of the input data for the design of the restoration operations, once again confirming the remarkable potentiality of photogrammetry in many applicative fields related to cultural heritage.

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Keywords:
Digital documentation
Terrestrial photogrammetry
Morphometric resolution
DEM
Surface restoration.

INNOVATIVE HARVESTING SYSTEMS TO IMPROVE INDOOR VISUAL COMFORT

ID077

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In this study, we will focus upon the building envelope as a multi-functional component that intersects energy consumption, human comfort, and aesthetics. Given their significant impact, building skins have been extensively studied in recent years to enhance their efficiency and performance in terms of energy usage, comfort, and structural integrity (Schumacher, 2016). Architects must consider numerous factors when designing building envelopes, including environmental issues, appearance, occupant comfort, and view quality, recognizing that the building's envelope is a critical component in improving sustainability (Khelil, 2018). Consequently, responsive architecture can be achieved by imparting intelligence to the building system through the building's skin, which responds to environmental stimuli. Designers are exploring the potential of making building skin elements move in response to natural or human stimuli (Gan, 2020). The objective of this paper is to analyse, starting from a biomimicry+origami mimicking approach, the design concept and application of a harvesting system for building envelopes. This kind of system can adjust to changing environmental conditions in real-time, regulating the internal climate of a space, and exhibit movement and dynamism inspired by natural adaptation strategies to optimize the visual comfort of buildings in hot and arid regions by leveraging this approach. In the paper is presented the utilization of a dual methodology that employs parametric design as an alternative platform for architects to enhance, verify, and make well-informed decisions during the early stages of the design process. This approach will offer unique opportunities for investigating various design options and strategies to achieve environmental performance, including improving indoor visual comfort. The building's exterior is designed parametrically, utilizing the Grasshopper Visual Programming Language in Rhino 3D Modeller and, based on the results obtained, the proposed harvesting system has demonstrated significant effects on visual comfort.

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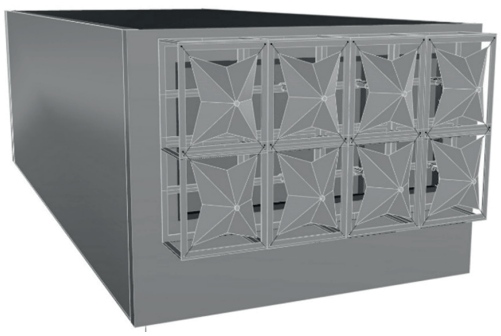

Keywords:
Visual comfort
Optimization
Parametric design
Biomimicry
Energy efficiency.

URBAN FORESTRY: THE NEW MEETING POINT BETWEEN CITY AND LANDSCAPE

ID078

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The concept of urban forestry has, in recent years, assumed a central role in the study and analysis of the so-called contemporary city. After all, legislation, at every level, has seen urban forestry as a necessary element to achieve the "green" transition, a central element, also, in the logic of the N.R.R.P. In general, the theme relates to the preparation of territorial public policies that favor the use of urban green areas, which point to the encouragement of urban gardens, design of parks, gardens, etc. While this vision is closely related to an "urban" view of the issue, affecting - in fact - the city, there has also been a recognition that forestation is an essential part of the urban landscape. However, one of the problems encountered is that related to the absence of a clear and unambiguous definition of "urban forest," a deficit that has an impact on the provision of the aforementioned activities. Despite, however, the regulatory uncertainty and the absence of a so-called framework law, there are some regions that have incorporated the issue of urban forestry into legislation, with different schemes and approaches among them. This confirms the absolute centrality of urban forestry in the development and planning of urban landscape policies, as the natural seat of the new paradigm between city and landscape.

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Keywords:
City
Landscape
Urban Forestry
Ecological Transition
N.R.R.P.

FROM BIOLOGY TO THE CITY. SYMBIOSIS AND ECOLOGY IN PATRICK GREDDES' THEORY

ID079

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The paper focuses on the theory of "reciprocal accommodation" introduced by Patrick Geddes (1854-1932) deduced from his experiments on marine micro-organisms and applied to his urban theories underlying his ecological thinking. At that time, leading biologists, including Herbert Spencer, Tomas Huxley and Charles Darwin, had taken part in the debate on parasitism, compound organisms, symbiosis. Geddes' observation of the marine organisms, the so-called "chlorophyll-containing animals", first in Roscoff in France, in 1878, and then carried out in Naples, at Anton Dohrn's Zoological Station, between 1879 and 1881, allowed him to demonstrate how the intimate ecology established between animals and plants was symbiotic. It was not long before Geddes shifted his studies on the symbiosis between plants and animals to a different and broader type of relationships, including those of humans. Back in Edinburgh, Geddes devoted himself to a series of rehabilitation projects in the slums of the Old Town where he himself moved with his wife Anna Morton from 1886. The inhabitants of these neighbourhoods, usually stigmatized as parasites because of their poverty, were involved by Geddes in the recovery processes of their homes and public spaces, cultivating any abandoned land and creating small gardens, trying to encourage them to have a dynamic relationship with their environment. From an ecological perspective then he wrote his most famous text, "Cities in Evolution" (1915), also based on "reciprocal accommodation", which unites the smallest ecologies up to the metropolis.

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Keywords:
Urban renewal
Evolution
Reciprocal accommodation
Symbiosis
Naples.

LASER SCANNING AS A DIGITAL TOOL TO INVESTIGATE ARCHEOLOGICAL HERITAGE: UNRAVELING THE GEOMETRY OF THE DURRËS ROMAN AMPHITHEATRE

ID080

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The Hadrian era Roman amphitheatre of Durrës, in Albania, build in the 2nd century CE was discovered in May 1966 during the archaeological expeditions lead by Vangjel Toçi. In the past seven decades several other excavations and studies have been carried out but the remanent archaeological artefact remains partially unearthed in the present days. Hence, its formal geometric composition is still subject of hypotheses in the current scientific debate. A total excavation of the roman amphitheatre would define the exact position and geometry of the entire artifact within the present city of Durrës. Yet, in the context of climate change and a sustainable development that takes into consideration the 11th goal of SDGs 'sustainable cities and communities', this research aims to utilize digital tools and technologies to investigate lost architecture in relation to the remanent artifact of the roman amphitheatre of Durrës.

The team collected and analysed all the data and studies available until present days regarding the hypothetical typology of Durrës amphitheatre and the most plausible formal geometric compositions. Thereafter, an integrated surveying methodological approach aided by laser scanning with FARO Focus M70 is conducted to investigate with high accuracy the results and draft surveying drawings accompanied by a digital numerical dataset for comparative analyses.

The results were further compared with past studies and surveying's of the amphitheatre of Durrës and together with the digital numerical dataset were to compare the derivative result with formal geometric compositions of other amphitheatres of Roman Empire. To conclude this research defined the use of laser scanning as a digital tool in an integrative surveying methodological approach to understand with high accuracy the formal geometric composition of the remanent amphitheatre of Durrës and the location of its known and unknown parts within the existing urban fabric of the city.

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EVALUATION OF THE SENSE OF SAFETY IN MONUMENTAL GARDENS DURING NIGHT THROUGH VIRTUAL REALITY

ID081

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The monumental gardens are complex historical-cultural areas in which the scenic structures and vegetation systems related to specific area are still visible today and accessible by many visitors. The sense of safety that people feel is one of the parameters that mainly influence the usability of these areas during the night and can be improved with appropriate lighting system design. At the same time, considering the historical values of monumental gardens, the lighting system should influence the scenic and perspective views of the area during daylight hours as little as possible. In recent years, virtual reality has become a useful tool for proposing and analyzing different retrofit lighting solutions. Starting from detailed virtual environments, the solutions can be compared through user's responses to subjective surveys. This research shows the preliminary results of a research about the case study of the Jardines del Principe, located in the Monumental Complex of the Escorial in Spain. The analysis and surveys conducted with a laser scanner were used to create the 3D model of the Jardines in Unreal Engine 4. In order to investigate how different lighting solutions affect the sense of safety in visitors during the night, three types of poles and virtual scenarios were elaborated. The light sources in each virtual scenario were calibrated to ensure the correct distribution of the light. Each scenario was shown to a group of 12 people through a headset, asking them to express a judgment on the reported presence, perceptive impressions, the sense of security, the perceived strength quality of the lighting and the perceived comfort quality of the lighting.
The results shown that virtual scenarios were perceived as consistent and correct and that they ensure an adequate sense of immersion. They also underline a link among the pole height, the area of the garden lighted and the sense of safety.

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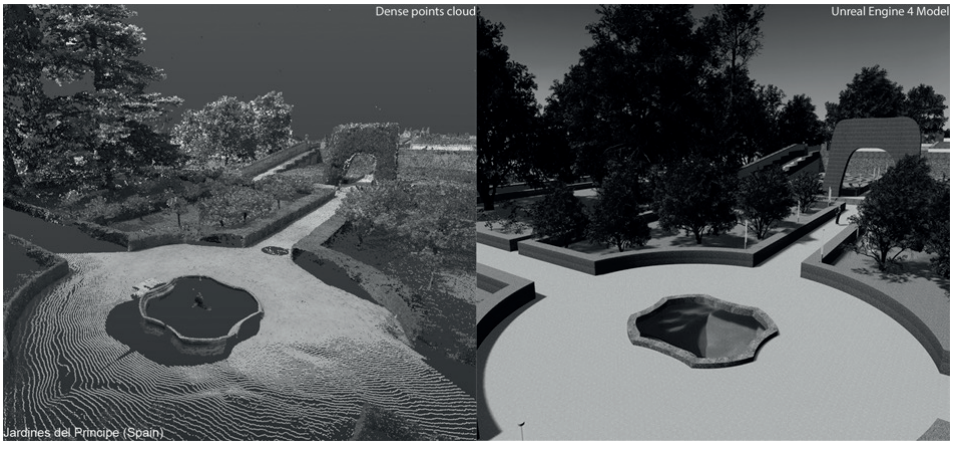

Keywords:
Monumental gardens
Virtual Reality
Lighting retrofit
Sense of safety
Subjective analysis.

USING VIRTUAL REALITY TO ASSESS THE RELATIONSHIP BETWEEN ARCHITECTURAL AND GREEN AREAS LIGHTING

ID082

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Architectures and vegetation areas in monumental gardens of historical and cultural interest need design solutions considering the constraints imposed by current regulations. Therefore, lighting systems must ensure both the enhancement and preservation of the cultural heritage. In particular, the lighting of the architectures and the vegetational areas surrounding the architectures should be balanced so that the user has the correct perception of the monumental garden. Virtual reality offers a participatory and multi-sensory design tool by replicating real-life settings and allowing users to interact with their surroundings. This research evaluates the lighting's influence of the surrounding vegetational areas on the architectures' perception. With this aim, scenarios with three different lighting solutions for monumental gardens were developed in virtual reality. The West part of the Escorial (Spain) monumental complex, composed of the Casita de Arriba surrounded by the Jardines was considered a case study. In order to obtain an accurate reproduction of the places, the virtual model of the architecture and the first part of the Jardines were modelled in Unreal Engine 4, starting from a laser scanner survey of the entire area.
The scenarios were realized considering the architecture illuminated with the planar technique, while three different alternatives were considered for the Jardines. Each scenario was shown to 12 people asking them to assess perceptual impressions, the quality of perceived strength on the whole scenario, the quality of perceived strength on the architecture, the influence of the Jardines' lighting on the perception of the architecture and, the reported presence.
Therefore the relationship between architectural heritage and the surrounding context, as well as the proposed lighting for the surrounding effects on the perception of the artifact itself, were investigated. Results highlighted that all the proposed scenarios gave users the feeling of being present in the environment displayed; they also showed that the surrounding's lighting may influence the perception of the architectures.

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Keywords:
Casita de Arriba
Lighting solutions
Vegetational surrounding areas
Valorization
VR perception.

THE CURRENT STATE OF BUILT HERITAGE IN HYDERABAD: THE CASE OF RANI BAGH

ID084

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Hyderabad's historic centre exhibits a wide variety of historical characteristics of its constructed heritage, modern-day Hyderabad has a fragmented and complex social structure. Hyderabad's growing urban population is a significant factor in the city's decline, which also includes the loss of its historical characteristic. There are disputes between what people do and what the government institutions do because there is no effective legislation protecting cultural heritage. As a result, the inner city is in disorder and decay. The city is currently growing quickly. This study focused on one of the projects that is, the Rani Bagh (Queen's Garden) previously known as Das Garden is example of the historic built heritage in the city of Hyderabad, Pakistan. The garden was given a new name in Queen Victoria's honour. It was a well-known botanical garden developed in 1861 but due to recurring issues the beautification of garden is lost somewhere in the urban concrete jungle. This study analysis the current state of the Rani Bagh along with its historic importance and cultural and architectural significance. The study adopted physical observations, archival analysis, and site survey along with photographic documentation and interviews of the local dwellers (specially to focus on the historical evolution of the building) as research techniques. The results demonstrated that Hyderabad's historic centre is in a condition of deprivation as a result of a collective destruction of the area's social and historic qualities, which is further supported by the absence of a heritage legislative system. The research also investigates the present condition of the Rani Bagh in connection with its glorious past and urban decay befallen to it over time due to vandalism and the numerous restoration plans proposed for it over the years. The study can be beneficial to comprehend the ground realities concerning the survival of heritage properties within the cumulative urbanization process. The results can be used also to propose the rejuvenation of the lost luxury of the historic urban core of Hyderabad as a prototype for parallel development schemes.

Keywords:
Built heritage
Historic architecture
Public space
Recreational facility
Redevelopment.

MINOR CENTERS AS PLACES OF FEELING, SPACES AND SHAPES TO BE MANAGED AND RE-DESIGNED.

ID086

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To design new valorization scenarios for an area of Medio Volturno (Campania, Italy), the contribution suggests a conscious vision of minor centers, where the adjective "minor" instead represents a "plus". The contribution analyzes the extrinsic and intrinsic characteristics (tangible and intangible) of these places and proposes a multidisciplinary methodological approach that recognizes and interprets the kinesthetic territory, made up of tactile and muscular elements. The theoretical-design proposal seeks to re-evaluate the phenomenological dimension of the perceivable environment and to conceive the space as a composition aimed at the representation of affections and the intimate world, never freed from the presence of the subject. The goal is to rediscover the Medio Volturno through the dialectical relationship between the physical and phenomenological dimensions of the perceivable environment. This is possible only through the reintegration of the subject into the space, keeping in mind that perception is a creative act as it always implies active elaboration.

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Keywords:
Perception
Senses
Minor centers
Design.

BUILDING ECOLOGICAL AWARENESS: NEW REPRESENTATIONS OF NATURE THROUGH DIGITAL IMAGES AND AI EXPERIENCES

ID087

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The proposed paper presents the premises of a research project on the theme of Man/Nature interaction, with a focus on the role that the discipline of representation can play as a tool for investigation, experimentation and as a vehicle for contents aimed at raising ecological awareness.
With this intention, the concept of emergence is taken into analysis and this can be considered "permanent", as a structural expression of contemporaneity, within which representation and visual communication can play a substantial role as an agent of change (Piscitelli, 2019). The theme of the connotation of the image becomes central and it constitutes the set of cultural and social interpretations that influence the understanding of its communicative intention, as well as the reaction to its vision. This translates into an articulated project of signs, colours, tone of drawing that aims at raising awareness, but also intends to arouse astonishment and curiosity towards known elements, seen through special points of view. The strategic use of language and stylistic treatment enables the production of a repertoire of images based on evocative approaches of rhetoric and thus exploiting different figures to exaggerate certain aspects to produce emphasis or a dramatic effect (hyperbole), to transfer meanings (metaphors) or to describe a part for the whole (synecdoche) (Noble, Bestley, 2013). Through such a structured narrative, made up of images (sometimes surreal or normally invisible) the basis for a reflection on the role of representation through drawings, traditional textures and graphic experimentation through AI will take shape, referring to the theme of Nature as a field of contemporary experimentation. The aim will be to construct visual artefacts inspired by the natural world, using digital technologies, for the enhancement of a profound ecological awareness.

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Piscitelli D., 2019, First Thing First. Comunicare le emergenze. Trento/Barcellona: Listlab.

Keywords:
Communication
AI
Images
Nature
Representation.

ON THE USE OF WEMOS, A WEARABLE DEVICE FOR ASSESS THE INDOOR ENVIRONMENTAL QUALITY OF AN EDUCATIONAL CASE STUDY IN ALBANIA

ID088

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In the last years, Indoor Environmental Quality (IEQ) in education buildings has attracted the attention of several researchers as the quality of indoor spaces affects students' well-being, health, and productivity. Scientific literature reports several case studies focused on the evaluation of the IEQ in educational buildings, where students and teachers express their perception of the indoor environment. Unlike the "traditional" approach, where the users involved in the campaign remain "passive" and perform their usual tasks in relation to their status, in this campaign, they took part in the evaluation process by expressing their perceptions of the specific IEQ parameters that were simultaneously monitored from a new monitoring wearable device worn by the participants. The monitoring campaign of Indoor Environmental Quality (IEQ) was carried out at the department of Architecture of the Barleti University in Tirana (Albania), using the first Wearable Environmental Monitoring System (WEMoS) prototype for IEQ monitoring purposes. WEMoS was developed according to the Do-It-Yourself (DIY) philosophy, low-cost sensors and 3D-printing. The proliferation of the maker movement philosophy has promoted the diffusion of DIY-based technologies. Outside the research institutions, this movement has registered a growing interest and attention among educators at the point to introduce this philosophy in the didactic curricula, also affecting the STEAM (Science Technology Engineering Arts Mathematics) approach by making it more stimulating. Included in the Collaborative Research Project between the National Research Council of Italy, the Department of Architecture and Industrial Design, University of Campania "Luigi Vanvitelli" and the Department of Architecture and Design of Barleti University, the main goal of the proposed study is to assess the feasibility of the WEMoS device in the collection of environmental variables and compare them with the users' feedback obtained through the specific survey. The article presents the outcomes of the first experience with the WEMoS device implemented for the IEQ monitoring campaign and survey that took place in Barleti University in Tirana.

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Tran et al., 2023, Buildings. 13, 433.

Keywords:
IEQ
Wearable
Environmental Monitoring System
Learning environment
Survey.

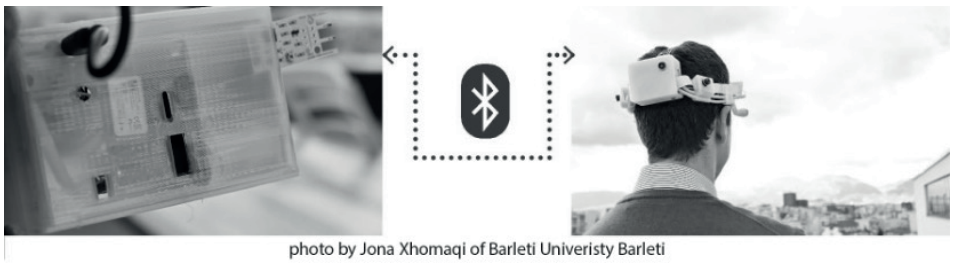

photo by Jona Xhomaqi of Barleti Univeristy Barleti

ECO-SUSTAINABLE APPROACH IN THE DESIGN OF AN END-OF-LINE BENCH FOR ELECTRIC VEHICLE MOTOR PRODUCTION

ID089

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Electric vehicles are strongly supported by most countries for their low noise, zero emissions, strong power, and no fuel consumption. The transition to electric in the automotive sector has brought significant changes also in manufacturing plants' architectures. Specifically, optimizing the design of the electric motors (EMs) has proven to be a challenge due to the high number of design variables and the multidisciplinary character of the topic. To ensure that parts are built to the appropriate specifications, end-of-line (EOL) testing is considered one of the most crucial steps in automotive quality testing to date taking into account that the improper sizing of EMs may lead to very relevant energy impacts. In the first part of the paper, a quick overview about of the various hybrid/electric vehicle configurations and their different missions is firstly provided. Then, the new vehicle emission legislations and their technological implications are briefly introduced, along with the new homologation cycles and the reasons why the internal combustion engines are not sufficient to meet the new targets are also indicated. A short description of electric vehicle motors is given by detailing their main components and types in terms of advantages and drawbacks. In the second part of the paper, a fully explanation about the C/1000 guarantees and the importance of EOL testing on manufactured components is provided, together with the reasons why original equipment manufacturers invest so much in quality control. Then, the main features of the EOL test stands, the types of checks on the manufactured components, as well as the methodology behind component evaluation are discussed. Finally, the main components and functions of the innovative EOL testbed developed by the Italian company Assing S.p.A. (see the figure) for sizing EMs with an environmentally sustainable and power-conscious approach are also described. The main physical laws and parameters governing the operation of the bench as well as its potentialities in terms of energy saving, cost reduction and performance optimization are specified.

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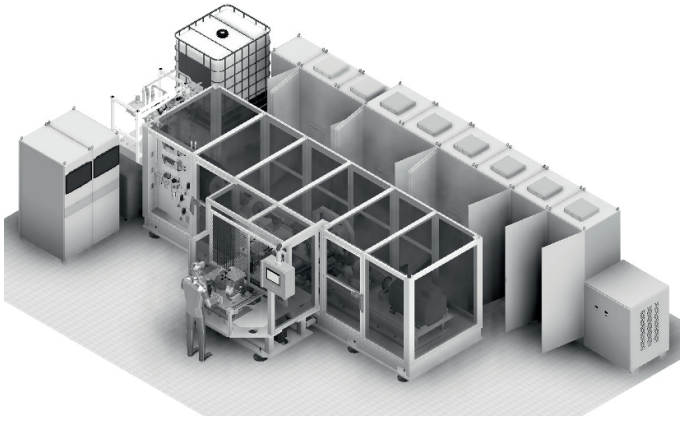

Keywords:
Electric vehicle
Electric motor
End-of-line testing
Eco-sustainable sizing.

BENGEMS – JEWELERY FOR EMERGENCY

ID090

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The paper illustrates the first results of the "BENGEMS" Research Project in the current relationship between Climate Change and Cultural Heritage. BENGEMS describes new generation forms and materials in relation to production realities and local traditions to study original products on the theme of preciousness (ecodesign) using processing waste materials simultaneously with the most innovative multimedia forms of digital diffusion, focused on the study of the intangible values of the jewel product, as a vehicle of communication of local identities, cultures, myths and rituals associated with it, as well as its symbolic values, often bearers of ethical values. The "BENGEMS" research in compliance with the "DNSH", in accordance with the art. 17 of Regulation (EU) 2020/852, and the relevant EU and national environmental legislation, intends to enhance the natural resources of the Mediterranean area, designing and creating multisensory jewels. These gems, in addition to reflecting the mineral characteristics of the area, can contain and possibly release a series of trace elements which would bring beneficial effects to man. Since gems are resources of Mother Earth, unfortunately they can be affected by environmental pollution by absorbing heavy metals present in the soil and in the air, but they can also absorb precious minerals for human health. BENGEMS also deals with the specific theme of the social emergency with the aim of promoting, thanks to the planning force of jewelery design, adequate, effective and coherent solutions in particular and difficult social contexts. The case study is represented by the jewels for peace designed by students in Design UniPG, in Planet Life Design UniPG and the 'Jewel Design' course of the University of Campania Vanvitelli. The jewels will be made by non-profit "Il Nodo" with young Cambodians, using local materials and resources.

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Keywords:
Multisensorial jewellery
Ecodesign
Planet
Social emergency
Well being.

SICILIAN CITIES AT RISK. CLIMATE CHANGE URBAN ADAPTATION STRATEGIES

ID091

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In 2023, tackling the crises - climate, energy, socio-economic - that can be foreseen and predicted, is not easy, due to their severity, but also to a certain tendency towards irreversibility.
The culpable inattention of those who have manoeuvred often without competence or correctness the levers of power, has led to real global, epochal disasters. Numerous studies, both national and international, have demonstrated the close connection between climate change and risks to the health and well-being of populations living in urban areas. These risks of a direct type (heat waves, frost, frequent adverse weather events) and of an indirect type (health significance on ecosystems, biodiversity, water, soil and air) have long been at the centre of the global scientific debate and not only. The outcome of these reflections/meetings has unfortunately confirmed that it is the city itself, with its structure and composition, that profoundly influences the climate, being among the largest contributors to global greenhouse gas emissions (around 40%) and ranking among the systems most vulnerable to climate change risks. Hence the need for an in-depth understanding of the relationship between land consumption and ecosystem services in order to combat urban sprawl, improve adaptation strategies to Climate Change as indicated by the Urban Climate Change Research Network and make cities more sustainable and resilient using PNRR funds. One of the winning strategies, to counter climate change and face one of the most important challenges for mankind is to "Think globally and act locally" through planning that aims to safeguard the natural and human system, that stimulates the start of a new phase of urban regeneration and that promotes risk awareness and culture, together with the consistent containment of land consumption, the promotion of natural capital and the landscape, quality building, as well as the reuse of contaminated or disused areas. This contribution, with a multidisciplinary approach, describes the relations between soil consumption and climate change in some Sicilian urban areas, proposing new strategies of urban adaptation to possible future events, already successfully tested in other virtuous Italian cities.

Keywords:
Sustainability
Resilience
Urban sprawl
Urban adaptation strategies.

"PER FARE UN TAVOLO CI VUOLE UN FIORE". ARCHITECTURE AND NATURE IN THE WORK OF FRANCA STAGI AND CESARE LEONARDI

ID092

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Our cultural heritage, especially everything related to the disciplines historical-critical of architecture and design, has left numerous testimonies on the interaction of the natural component in the contemporary man-made landscape, as a necessary antidote to the built city. Starting with Gianni Rodari's famous nursery rhyme from the not-so-distant 1974, the paper intends to focus on the research work carried out by the architects and designers Cesare Leonardi and Franca Stagi, that with the powerful book L'Architettura degli Alberi, from 1982, mark a turning point in the relationship between design and nature, at the dawn of the climate crisis at the end of the last century. Through the redrawing in ink on a 1:100 scale of approximately 212 species of trees native to Italy, the two architects present an unusual catalog of tree biodiversity to be handed over to future generations. The tree regains the space of the project by placing nature and architecture in balance with each other. Not "things" or "ornaments" to be used to shape the landscape, but living organisms, vital entities that change shape and color and that time does not consume but rather continues to grow and develop. It is precisely in relation to this natural evolution of trees and the green landscape that Cesare Leonardi would later elaborate his "Centered Reticular Structure," or a generative process centered on shattering from the center that denies universlae rationalization models of territory. Starting from the same principle of relationship and coexistence between trees and cities, Leonardi undertook a ten-year research, based on the use of formwork wood, discarded by the building industry, for the production of over one hundred pieces of furniture, as a manifesto of a responsible production process and a more conscious operational awareness that places the wood supply chain at the center of a new change. It was only 1993 and the planet was not yet ready for positive cultural change, while negative climate change was already imminent.

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Archivio Architetto Cesare Leonardi, Modena, https://www.archivioleonardi.it [last consultation May 15, 2023]

Keywords:
History of Design
Architecture
Trees
Change
Eighties.

CLIMATE CHANGE AND CULTURAL HERITAGE: RESEARCH AND TRAINING PROJECTS FUNDED BY EUROPE IN RECENT YEARS

ID093

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University of Urbino, Italy

Our contribution analyses and examines in depth the context of European projects concerning the subject of Sustainable Conservation and in particular of Climate Change and Cultural Heritage in the architectural field. The contexts of conservation and restoration especially related to climate change in architecture are analysed through projects and funding aimed at European research and training, in a time frame from 2015 to 2025. The CORDIS information space, a website platform that collects all European research activity, was the principal source of information for searches involving European projects and for training the platform used was Erasmus Mundus Catalogue so as to have a complete picture of the opportunities offered by Europe. For the search, filters were used to examine funding initiatives. In particular, we applied the following filters: Cultural Heritage Architecture (ACH), Climate Change Architecture (ACC) and Conservation and Restoration of Cultural Heritage (CRCH); Cultural Heritage Sustainable (CHS) The projects were examined primarily with the aim of identifying the research topics studied. In addition, the participating countries were considered to highlight the interest and distribution of partners within and outside Europe. This type of analysis allows us to understand the political relationships and who the cultural heritage world is primarily aimed at. Finally, for projects already completed, we wanted to observe what kind of dissemination the results had.
Examining the keywords for each project and by focusing on the reports of principal results, we were able to investigate how the word "sustainable" relates to the word "heritage" in terms of European policies. The fact that there is no actual connection between the words "sustainable" and "conservation" is even more remarkable. In particular, this achievement sheds light on some current knowledge gaps.

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Keywords:
European project
Sustainable heritage
Sustainable conservation
Climate change
Architecture.

RE-USE, RE-INVENT, RE-THINK: SCHOOL ARCHITECTURE NOTEBOOKS

ID094

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The focus of the research is the architecture of the schools, considering current topics, especially the actual state of school buildings, and the Italian architectural culture, with an emphasis on the knowledge gained since the second half of the twentieth century; all in the perspective of redesigning the available heritage. The research output is a collection of independent and complementary notebooks that, when considered together, make up a small architecture manual for schools: 1. a register (yellow notebook) that presents, in terms of quantity and quality, the consistency of the Italian school building heritage; 2. a compendium (green notebook) that collects theories and reference projects oriented towards the relationship between architecture, the city, and society; 3. some notes (red notebook) that illustrate strategies and tools for analysis and intervention; 4. an exercise (blue notebook) that experiments various redesign devices and techniques starting from a specific building. The focus of the discussion is the project, intended as a way to redesign, correct, and reinvent the school space. At a time when the issue of school buildings is at the center of the Italian political agenda, focused on increasing their design and energy performances through new constructions, the attempt to reaffirm the competence of past architectural culture and to decline the project in terms of redesign can be useful to improve the widespread quality of school architecture.

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Keywords:
Schools architecture
Redesign manual
Re–use
Architectural theory
Heritage.

COMMUNITY MAPPING: PARTICIPATORY TOOLS TO UNDERSTAND, REPRESENT AND PRESERVE CULTURAL HERITAGE

ID096

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The paper provides a critical review of current experiences and tools aimed at investigating the relationships between settled communities and cultural heritage, material and immaterial, with particular reference to inner areas. According to the Faro Convention (2005), indeed, cultural heritage is no longer attributable to the quantity of assets existing in a given territory, but rather to the fabric of relationships established between community and cultural heritage in a given place or better to the recognition of cultural heritage by local communities. This recognition assumes, in fact, a strategic role for the local identity and the sense of belonging of a community to a place, representing itself a crucial element also to protect and enhance historical landscapes: only a heritage community may transmit to future generations the peculiar values of cultural heritage.
These issues are particularly relevant when inner areas are at stake; in these areas in fact, despite the widespread presence of a significant heritage of material and immaterial resources inherited from the past, the abandonment processes underway are causing a progressive loss of the relationships among cultural heritage and local communities, fundamental to ensure the identity of these territories and, with it, their own future. Among the tools that local communities have to «enhance the eco-territorial and common dimension of places» [Baratti, 2020] we should mention community maps, or collaborative maps. The latter represent a particular tool to relate a community to its cultural heritage, including natural and historical resources, such as landscapes, local knowledge in which that community recognize itself and consider essential to transmit to future generations. Based on these assumptions, the paper will analyze heterogeneous experiences of community mapping, meant as tools of knowledge and dialogue between experts, citizens, territory [Caffio, 2020], by focusing on pros and cons of both the participatory process that led to the drafting of the map and the representation tools that have been adopted in the different phases of the process.

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Keywords:
Community mapping
Cultural heritage
Local communities
Participatory processes
Drawing and representation.

SPACE AND FORMS: THE DOUBLE PARADIGM OF THE LANDSCAPE

ID097

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The concept of landscape, as defined by cultural and historical contexts, has evolved over the centuries to become one of the main categories of tangible and intangible heritage; this evolution has settled the coexistence of different interpretations of the concept of landscape, more or less specialized, but one of the most general defines it as "a cultural concept that refers to a specific geographic area, as perceived by people in their environment, whose character is the result of natural and human factors together" (Naveh & Lieberman, 1994): a primary "place of experience" (Winifred Gallagher,1993). The most commonly accepted idea of landscape is the one related to the aspect of "space"; in "The Experience of Landscape," Jay Appleton (1975) recognizes landscape as a "perspective-shelter," that is, the sequence of open spaces-which provide a view of the surroundings (perspective)-and enclosed spaces-which provide protection and safety (shelter). This definition, like others, is elaborated from the character of "empty," "pictorial" space of landscape. Similarly in Italy, theorists such as Rosario Assunto (1973) and Renato De Fusco (1978) developed their arguments about landscape and the semiotics of the built environment starting always from a space-centric point of view. The definition of a form-centric landscape originated, in an embryonic way, from the studies of Kevin Lynch (1960) and Jane Jacobs (1961), who flanked the value of "spaces" (paths, nodes) with the value of "forms" (landmarks) in defining the "psychogeographical" value of the urban environment; Aldo Rossi's (1982) theses in "Architecture of the City" expounded the value of the form-building in itself and as a system. However, in these works the reference to landscape is not expressed directly, emerging only from a contemporary reinterpretation. The definition of landscape from a "formal" point of view is a less explored mode than the "spatial" one, but the experience of form is undoubtedly an element of expression and meaning that gives the actual cultural and intelligible aspect to the visual experience, in contrast to the spatial experience that is completed by a "physical" experience in traversing, walking through, exploring places.
The present paper aims to explore the qualities of a landscape defined from forms populating space and the differences with the "traditional" landscape linked to a matrix of space - concluded by forms, noting how these two paradigms come into relationship with each other and with human experience, in defining a broader concept of landscape cultural heritage.

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Keywords:
Landscape
Semiotics
Form
Space
Cultural Environment.

PROTECTION AND RENEWAL DESIGN OF ARCHITECTURE HERITAGE WITH 3D LASER SCANNING DATA: TAKING LA VILLA VITI IN MAZZOLLA

ID098

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There is increasing attention and awareness to the revitalization and renewal of architectural cultural heritage. More and more people realize the importance of protecting and utilizing architectural cultural heritage, and revitalizing it has become a feasible option to achieve sustainable economic, social and cultural development. More and more architectural cultural heritage projects are revitalized and updated, covering buildings of various types and scales, including ancient castles, palaces, industrial sites, churches, villas, etc. These projects create new uses and values for communities by transforming buildings into residences, commercial spaces, cultural centre, museums, hotels, and more. Advanced technology plays an important role in the revitalization and renewal of architectural cultural heritage. For example, technologies such as 3D scanning and modeling technology, virtual reality and augmented reality provide more accurate and efficient methods for documenting, analysing and designing buildings, helping to achieve a balance between conservation and innovation. This article discusses the application of digital technology in the revitalization and renewal of architectural heritage by taking Villa Viti as a research case(Figure_01). The Villa Viti it has a neo-Gothic façade, which owned by the Viti family, is a pleasant overlapping of styles ranging from the Middle Ages to the 19th century: it overlooks a large garden with the two defensive towers at the corners, still visible, from which you can enjoy a splendid view of Volterra. The two-storey neo-Gothic facade, the work of the architect Luigi Campani, incorporates an ancient tower in the centre. It is characterized by four niches on the ground floor with as many allegorical stone statues representing the four continents then known and four other niches on the first floor, with busts of the great poets Dante, Petrarca, Ariosto and Tasso. This article uses a 3D scanner to obtain data for the research case, From acquisition plan formulation, data acquisition and fusion, data reconstruction, and post-processing of 3D models, fast and efficient acquisition of 3D information is achieved, and real-time observation data are provided for the acquisition of architectural heritage building information and the assessment of architectural value.
Then, through the reconstruction of Villa's building information model and the investigation of its history and surrounding information, the reconstruction model is integrated and optimized in terms of auxiliary design decision-making, environment integration simulation, and scene virtual performance process. A protection update plan for the villa has been formulated. In order to achieve the purpose of updating and revitalizing it from multiple perspectives such as society, economy and culture.
3D scanning data has the following advantages in the activation and renewal of architectural heritage. Practice has proved that the 3D reconstruction technology based on multi-view images can quickly and accurately reconstruct large-scale architectural and environmental information, and obtain a true 3D model with detailed information. In the design and analysis process of architectural heritage renovation, improve the efficiency and scientific, city of renovation, and realize the scientific and digital protection and renovation of architectural heritage.

Keywords:
3D Laser Scanning
Revitalization
HBIM
Architectural heritage.

WASTE AND ARCHITECTURE: HOW PERCEPTION CAN CONTRIBUTE TO ENVIRONMENTAL SUSTAINABILITY

ID099

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The perceptual study related to architectural and landscape design, with its consequent role in directing the public's perception of the efforts to combat climate change, can contribute to the acceptance of waste management projects, including landfills and incinerators, if effectively combined. The contribution of architectural and landscape design is to integrate the construction of waste management facilities into the urban fabric to minimise visual impact and noise and odour pollution by acting on the choice of construction materials and integration with the surrounding landscape. For example, Copenhill, the famous waste-to-energy plant in Copenhagen, was designed to minimise its negative perception by the population with a futuristic shape that can be used externally as a ski slope: the success of this operation is such that it has become a tourist attraction. The landfill in Peccioli, Italy, was designed innovatively; artificial hills covered with lawns and artwork make the facility more acceptable to the surrounding population. Successful examples of architectural design for waste management demonstrate the importance of aesthetic and functional approaches in their disposal processes. However, these designs do not solve the fundamental problem of their production, and, in any case, the need to reduce their quantity and increase recycling and composting remains fundamental.
The article aims to analyse some examples of waste management solutions that involve a design approach, demonstrating how architectural and landscape quality can contribute to the problem's perceptive processes and promote its acceptance.

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Keywords:
Landscape
Resilience
Urban fabric
Art
Waste.

3D DIGITAL RECONSTRUCTION FOR THE VIRTUAL REALITY WORLD: REEMERGING THE LOST ARCHITECTURE OF ELBASAN ORIENTAL BAZAAR

ID100

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In the past decade, since the invention of mass-use Head Mounted Device (HMD), Oculus VR (2012) from the 20-year-old American entrepreneur P. Luckey, followed by advancements in blockchain industry and cryptocurrency, the virtual world has accelerated very rapidly. Several industries like gaming, tourism, medicine, education, and Architecture, Engineering and Construction (AEC) have adopted the new inventive digital technologies and are currently using them to offer better services and advancements in specific research areas.
Thus, virtual reality has become a tool to explore the physical and virtual world, develop simulations, test, experiment, and enrich the debate about its usage. This study aims to explore digital reconstruction for the virtual world as tool to investigate the notion of lost architecture and identify potentials for understanding, communicating, and valorising it [lost architecture]. The case study of this research is the oriental Bazaar of Elbasan: an ottoman era neighbourhood vernacularly expanding as the economic pulse of the city, outside of the southern walls of the then castle-settlement, along the 5-Century rule of Ottoman Empire. After the World War II, it gets eradicated by the communist regime under the ideology to build the new socialist city serving the new society of proletariat, while today is inherited as a green park in the urban centre of Elbasan. The team collected and analysed all the historical information, maps, photographs, and drawings of the lost architecture of the Oriental Bazaar of Elbasan. A digital reconstruction based on principles of descriptive geometry was thoroughly followed through CAD tools to ensure the authenticity of this historic lost artefact.
Subsequently, the digital reconstructed output was manipulated with game engine software's to develop its digital twin in the virtual environment. As a result, this research developed the output of the digital twin of the Oriental Bazaar of Elbasan, outlining the usage it has in developing further research in Architectural History, Cultural Heritage Studies, Cultural Tourism, and Human Behavioural Psychology.

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Keywords:
Elbasan
Virtual Reality
Oriental bazaar
3D digital reconstruction
Digital twin.

INFLUENCE OF TRANSFER FUNCTION ON LUMINANCE DISTRIBUTION IN HEAD-MOUNTED DISPLAYS: A MUSEUM CASE STUDY

ID101

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Virtual reality has proven its potential in many applications, generating a great deal of interest in lighting design within the scientific community as well. Flexible and economical investigation tools, such as virtual reality, can help examine different light settings and assist in determining the optimal ones from a human perspective. Nevertheless, the management of the input stimuli remains a crucial aspect to investigate. Indeed, a precise characterisation of the lit scene reproduced by the head-mounted display is required to control the offered stimuli effectively. Research suggests that the function to transfer the software's virtual model to the head-mounted display may alter luminance distribution, implying a change in how environments and objects are seen. The problem of the right light distribution reproduction is significant for museum applications . In fact, the lighting of the things can significantly influence their function, value, and intended exhibition.
A simple room set up for a painting exhibition was modeled in Unreal Engine, considering the walls black painted and the light sources calibrated, to understand how the light is distributed in the game engine and the headset. The analysis was carried out by comparing the luminance values computed with the game engine with those measured in the headset using a videophotometer. The luminance and the luminance ratio values were evaluated on the surface of the painting with different reflectance values and the quantity of light reaching the surfaces.
The effects of the function used to transfer the virtual model into the headset on the luminance values were also investigated.
Results highlight that: i) the luminance values are transferred linearly to the headset, whatever the reflectance and colour are, if the function for the model transfer is disabled, and ii) surface reflectance values do not affect the luminance ratios of the scene shown in the headset.

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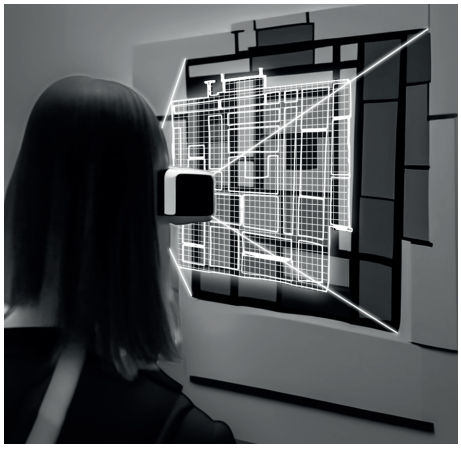

Keywords:
Lighting
Tone mapping
Immersive virtual reality
HMD
Visual comfort.

THE 1735 PORTA FELICE APPARATUS BETWEEN HISTORY AND DIGITAL REPRESENTATION: A CULTURAL HERITAGE AS A "PLACE OF LIFE AND EXPERIENCE"

ID102

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In 1735, on the entry of Charles III of Bourbon into Sicily, the Palermitan Senate gave arrangements for the related festivities to be prepared. The preferred route was via Toledo (present-day via Vittorio Emanuele), with the terminations of Porta Nuova and Porta Felice. It is on this last architectural work that the present contribution aims to deepen the subject, through a comparison of historical documents and digital representation techniques. The possibilities offered today by digital technologies have opened new perspectives in the field of virtual reconstruction, including the great majority of historic buildings that have disappeared, or been transformed over time, of which the only historical memory would remain entrusted to a few textual and/or iconographic testimonies. Nicolò Palma, author of the apparatus, of which the only testimony remains the engraving by G. Vasi (fig.1- a), joined" i due lati con un arco finto, e vi s'aggiunse un terz'ordine composto, che terminava in una cupola, e riduceasi alla forma d'un magnifico arco di trionfo" (La Placa, 1736), a clear reference to the famous architect Andrea Pozzo (fig.1-b). The present contribution therefore aims to intensify the study of the ephemeral apparatus represented as an extraordinary example of cultural heritage as a concept of "place of life" and "place of experience" allowing us to know and appreciate the built environment, both material and immaterial. The available iconographic material, for reconstructive purposes, does not constitute metrically reliable data because of the deformations evident in the perspective model represented in the engraving. The analysis needs, therefore, a survey phase of the existing to support the restitution of the iconographic material. The digital survey of Porta Felice was conducted by laser scanner and provided a point cloud useful for the extrapolation of both the volume of the artifact and the correct layouts. After the creation of a relief model, the perspective scheme (Agnello, 2022) related to the carving will be analyzed to find a correlation between historical iconography and the relief model (fig.1-c).
The reconstructive process will, therefore, be developed in a 3D environment to obtain a virtual simulacrum of the architectural object. The reconstructive process will be the result of the comparison between historical documents and digital relief of the existing (fig.1-d).

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Keywords:
Porta Felice
Cultural Heritage
Ephemeral Apparatus
Charles III of Bourbon
Digital Representation.

NEW ECOLOGICAL FORMS AND CONVIVIALITY IN THE WORK OF DIANA BALMORI

ID103

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Diana Balmori's work is a rare and unique compendium of artistical landscape interventions based on scientific research that have shaped silently but constantly our actual conception of landscape architecture, setting the bases for a more sustainable and equal urban space. The aim of this paper is to analyze some of her projects under two different concepts: the heterogeneity of natural environment that can help in readapting some ecological models inherited from the past to our present concerns and the conviviality of sustainability in the urban space and how we should promote the integration of natural processes within the cities by reinventing new ecological forms. It was in 2001 when she published together with F. Herbert Bormann and Gordon T. Geballe the volume "Redesigning the American Lawn. A Search for Environmental Harmony" searching for a solution to the American Lawn as reflection of the American dream: these lawns that line the typical North American street of rows of single-family houses, separating the city from the houses, always green and mown, but with an enormous ecological impact, not only in terms of water consumption necessary for its maintenance, but also in terms of pesticides needed for its preservation. The lawn is a homogeneous and predominant vegetation capable of putting an end to the biological richness of large urban and peri-urban areas. For the project of Prairie Waterway in Farmington (Minnesota) in collaboration with the Design Center for American Landscape at the University of Minnesota, Balmori proposed an open-air water drainage system to replace the traditional underground pipes that violently flow into nearby streams, channelling the excess runoff water into a system of small, connected ponds, areas planted with vegetation that absorb and filter rainwater, in an area where the high-water table had caused frequent flooding.
This system of pons and green open spaces have quickly become an integral part of the community, functioning as part of its infrastructure, but also as a valuable public amenity, with large lawns, playgrounds, and bicycle and pedestrian paths, making the neighbours participate directly on the sustainability of the area creating a sense of identity and conviviality with this new system.
Stablishing sustainable processes and participating on the conviviality with citizens is mandatory to promote a new ecological forms and consciousness and thus, helping our cities to evolve into a more natural-functioning and resilient ones.

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Keywords:
Diana Balmori
Conviviality
Landscape heterogeneity
New ecological forms
Active landscapes.

GRAPHICS FOR ETHICAL COMMUNICATION AND VISUAL MEDIUM OF IMPACT ON COMMUNITY LIFE

ID104

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Investigating, reporting and fighting environmental crimes are now obligatory actions to manage the current climate emergency. The possibilities with which to intervene are now many: from environmentally friendly building upgrades to the development of applications for the adoption of renewable energy and action plans for the sustainable development of Cultural Heritage. Designing and disseminating ethical communication campaigns can at the same time promote collective education for the protection of the environment in which we live. To date, there are numerous ethical awareness campaigns developed by global organizations, such as WWF (World Wildlife Fund) and Greenpeace, or those of graphic designers who have produced (and continue to do so) extensive ethical communication and education campaigns for the preservation of the planet and Cultural Heritage. The present paper will investigate the methods of visual construction by which the figure of the graphic designer currently intervenes in the staging of graphic-creative projects for the production of ethical messages that can make the viewer (of different targets) aware of a new social behavior to be taken in favor of the healthiness of the environment. The methodology of investigation makes use of an early graphical analysis of 'ethical' posters of various kinds (cultural heritage awareness, climate change, social denunciations, etc.) and, disciplinarily, through the examination of the construction of the images using drawing, writing, and photography, with the aim of making manifest their intentions and the relationships between them within the design development process [Cervellini 2016, pp. 76-80]. A content study that critically analyzes the theoretical modalities of drawing at the heart of the dissertation, here understood as an "extension of the mind, with the task of operationalizing thought" [de Rubertis 1994, p. 22] in favor of ethical communication for environmental protection.

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Keywords:
Communication
Graphic design
Ethics
Design
Awareness campaigns.

URBAN DIGITAL TWIN AS A TOOL TO SUPPORT PLANNING PRACTICES. URBAN SCALE ANALYSIS FOR CLIMATE CHANGE THROUGH THREE CASE STUDIES

ID105

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Urban design interventions have undergone a radical change in recent years, due to both technological revolutions, which have contributed to the advancement of architecture, and the current climatic problems linked to increasing urbanisation, which have necessitated a transdisciplinary approach that leads to the expansion of the boundaries of the tools with which we are used to planning. In the following research, it was decided to investigate this topic because, in today's changing environment, the role of the architect remains fundamental and must evolve using advanced digital models and tools, in order to be able to elaborate complex scenarios and have concrete results. The structure of the contribution starts with a description of the current problems that a city has to face. Cities are expanding uncontrollably due to the mass migration of populations from rural to urban areas.
The problems of increasing urbanisation are linked to those caused by strong environmental pressures that are further intensifying due to various factors contributing to climate change. In this context, the concept of the smart city is increasingly becoming an object of study within the architectural debate, capable of realising a credible and intelligent response to foster sustainable socio-economic growth.
To address urban problems, new strategies are being adopted to reduce risk and develop resilient systems through the use of technological tools, capable of reducing limitations and increasing opportunities`. In urban planning, there is a need for approaches that are able to cope not only with urban complexity' but also allow for participatory and collaborative processes, including urban digital twins, which have the capacity to address complex challenges for cities. This tool also allows citizens to have a voice and opportunities` to influence decisions in planning smart and sustainable cities. In the second part, the thesis is oriented towards understanding the process that leads from climate change issues to the implementation of urban digital twins, including adaptation strategies from the built environment to mobility, and the technologies used to improve the design production process and support the development of urban planning. This analysis is approached through three case studies: Zurich, Helsinki and Rotterdam, which have developed digital models of the city. After analysing the individual digital twins, the research focuses on the direct comparison between them.
The aim is to understand, how these cities address the issue of climate change through the digital twin.

Keywords:
Climate change
Smart city
Urban digital twin.

STRUCTURAL ADAPTATION OF SCHOOLS: THE CASE OF THE CITY OF SAN NICOLA LA STRADA

ID106

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The city of San Nicola la Strada, bordering the municipality of Caserta – an area of high cultural interest with historic buildings – has undergone a significant demographic and building increase over time. The state of the art presents a building heritage that dates back to the 1950s mostly, made by reinforced concrete constructions with a beam-pillar system. It is the dominant building typology in the urban fabric. After more than fifty years, the age of life of concrete, today the building industry is somewhat compromised structurally and degraded from an aesthetic point of view. Given that the needs of society and the needs of community life have changed, in line with historical times, it is clear from a careful specific survey of schools that the city has old, unsafe, obsolete, buildings in need of interventions. The framed construction system makes it possible to intervene, to empty the volumes, to reshape the plan and to add windows and other openings. The present work proposes to study examples present in the area, to frame them on the city map so as to trace their history and project it into the present, in order to correct the existing one, demolish where possible, recreate where the PNRR permits. Examples of adjustments are presented for a sample of schools. The intention is to propose contact with pedagogical concepts that place student growth and their usefulness in citizenship at the middle of the question, with the need not to neglect one's own territory, but to start an awareness that lasts over time. This is a research area tackled during my ongoing doctorate and to which a chapter is dedicated, in agreement with my supervisor Prof. Fabrizia Ippolito.

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Keywords:
School building
Reinforced concrete
Historical city
Interventions
Pedagogy.

SOCIAL IMPACT OF URBAN SCHOOL ARCHITECTURE. THE ARCHITECTURAL DESIGN DEBATE

ID108

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The present work refers to an aspect addressed together with the supervisor Prof. Fabrizia Ippolito in the doctoral thesis at the Department of Architecture, Industrial Design and Cultural Heritage at the University of Campania Luigi Vanvitelli. The intention is to extrapolate a reflection around the theme of urban schools, tracing past experiences and knowing how much and in which way the presence of school buildings lying in the city center has or can influence public and social life. One also wonders if the urban fabric conforms based on the presence of schools and how the city district evolves. Examples of the best-known literature are provided, with considerations of the exponents of the first half of the twentieth century: Le Corbusier, Wright, Neutra, Cicconcelli, etc. We continue keeping the focus on the Italian situation, from Aldo Rossi, Mantera, Canella, Quaroni and their relationship with the theories of Aldo Van Eyck and Herman Hertzberger. The school takes on the urban dimension that tends to affect the contradictory social character: a new place is formed from the countryside and isolated places, often in continuum with the large school structures within the context. Designers are confronted with new regulations, which are often at odds with pedagogical concepts. The research lies in the scientific interpretation of the relationship between architecture and pedagogy that lies behind the project status of the built schools. In the 1960s work began on the typological layout so as to regenerate the didactic-spatial device of the territory. It is clear from the bibliographic study that the relationship is resolved by choosing the open plan of the architecture of the school, ideal for its function in the city. In this work, we want to highlight how the school is among the main elements of public construction and how useful it is as a tool that gives identity to the city: the school that forms the city itself.

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Keywords:
Urban construction
School buildings
Architecture history
Urban modernity.

RURAL ARCHITECTURE AND AGRARIAN LANDSCAPE: STRATEGIES FOR SUSTAINABLE RECOVERY

ID109

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In Italy as in Europe, rural architecture has valuable formal features that need to be safeguarded and preserved.
The typology, construction techniques, morphological layout, and used materials are the result of a close relationship between the environmental components and the cultural and historical factors of a specific geographical area.
Such mixture highlights the importance of rural architecture, whose careful study is essential, especially in view of recovery actions. Added to this there is the need to consider, when intervening on the rural heritage, the set of relationships it has with the territory's 'signs' that, over time, have been stratified: religious paths, sheep-tracks, canals and water collection systems, wells, cisterns, terracing, etc.
The strong relationship between the agrarian landscape and rural architecture is an indispensable factor in the systematic and effective regeneration of an area, especially given the 'generative' and dependent link that the two components have with each other: the architectural artifact takes shape from the landscape palimpsest of which it is an integrated part. Therefore, in light of the above, and in view of recent EU guidelines, the study proposes an analysis on the possible scenarios for the enhancement of the agrarian landscape and the recovery and reuse of rural buildings, whose knowledge phase is attested as an indispensable step to pursue the effectiveness of interventions.

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Keywords:
Rural architecture
Knowledge phase
Recovery and reuse
Rural heritage study.

SCHOOLS FOR THE SUBURBS: A PROJECT PROPOSAL

ID110

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On the theme of school buildings, addressed with my supervisor of the doctoral thesis in progress Prof. Fabrizia Ippolito, the present work aims to propose a design solution regarding the theme of the suburbs addressed in the twentieth-century cultural debate, on the question of education in decentralized territories. Theme of the suburbs leads to careful reflective analyses. From the point of view of school buildings present in areas far from the centre, many exponents have spoken out, from architects to urban planners to pedagogues. The post-war period inaugurates the migratory season from the countryside to the cities. But that's another story. Our focus is on the development of the suburbs as a place, as a territory to live in, in which a society that identifies with it is formed. Placing educational buildings in the suburbs has always been an excellent channel for conveying society and community life, where the public place where the school lives is the central nucleus of the place. Our analysis starts from the times of fascism, where the pedagogical nature of urbanizing the suburbs was clearly different from current concepts. Overseas and British architects produce wide-ranging scholastic works for the suburbs, of various types: ring-shaped, comb-shaped, block-shaped, extended. This is the advantage of a decentralized territory: building it as one wishes and giving it meaning and significance in terms of collective pedagogy.Our inspiration comes precisely from Renzo Piano, thanks to whom, after having analysed the current state of the suburbs both from an architectural and social point of view, we have a more than satisfactory idea of the intervention methods to make the apparently marginal territories flourish again. The work proposes the example of a school rebuilt in the city of San Nicola which is located on the city limits: a bridge is used which connects the other side and the other side of the road. The bridge is that physical and metaphorical connection that cancels the border and projects the school into the urban core.

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Keywords:
Suburban buildings
School architecture
Connections
Urban regeneration.

OPEN SCHOOL FOR THE NEIGHBOURHOOD: A PROJECT PROPOSAL

ID111

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Starting from the study on the topic of school buildings addressed together with Prof. Fabrizia Ippolito, my supervisor of the doctoral thesis in progress, this article refers to a cultural aspect of reference, more specifically to the pedagogy-architecture debate of the twentieth century, for which I intend to propose the architectural design contribution on a case study. In the long debate of the twentieth century about the pedagogy-architecture relationship, the question of the school in the neighbourhood, as a point of reference for society, emerged among the exponents. The case studies analysed, in the local literature, propose schools that are symbols of closure, a building and community metaphor. Instead, following the examples of Turin and Hertzberger, an intervention to correct the existing one is proposed for the city of San Nicola. The new school plan opens up, empties, lightens the full-empty relationship so as to create a corridor for the neighbourhood and a square accessible to both students and the community. It is possible to intervene on the south-east side of the school, emptying a disused area and allowing the creation of a new square which, according to pedagogy, allows its use to the school, which is connected by a glass wall that also separates the private patio, and citizens who intend to experience the neighbourhood and socialize with each other. Pilotis system and street furniture maintain the connection with the local architecture, made of reinforced concrete and, for this reason, it was possible to demolish the non-load-bearing bodies. The school is reborn as a public continuity of the urban fabric.

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Keywords:
Innovative school
Opening
Urban square
Rehabilitation project
Community pedagogy.

ADAPTABLE ARCHITECTURE FOR CLIMATE CHANGE

ID113

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Climate change is one of the most important challenges of the modern era. The consequences of greenhouse gas emissions and air pollution are increasingly evident, from extreme heat waves to devastating floods. In this context, climate change adaptive design is emerging as one of the most promising solutions to mitigate the effects of climate change.
Climate change adaptive design is a methodology that aims to develop built environments that can withstand extreme climatic conditions and long-term variations. Adaptable design requires a holistic approach to design, including understanding climate context, risk assessment, designing climate-resistant buildings and infrastructure, and spatial planning. The goal of climate change adaptive design is to create built environments that can withstand and adapt to long-term climate change. This means developing solutions that are flexible, modular and able to adapt to different climatic conditions. Developing architectural solutions that are flexible, modular and able to adapt to climate change means creating architectural projects that are able to respond dynamically to the constantly changing environmental needs. This requires a design that is flexible and able to adapt to climate changes, the needs of residents and the different conditions of use.
In other words, a building that is able to change according to the needs of the surrounding environment, its users and the climate.
The use of sustainable materials, the adoption of bioclimatic construction and design techniques, such as natural ventilation, solar lighting and thermal control, can help create buildings that are able to adapt to climate change. Moreover, the adoption of modular solutions can facilitate the adaptation of the building to various needs.
This requires a paradigm shift in the way buildings are conceived, focusing on sustainability and the ability to adapt to the needs of the environment and users.

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Keywords:
Adaptability
Module
Changes.

"SAVE OUR PLANET". THE OLIVETTI COMPANY AND THE ENVIRONMENTAL CRISIS IN 1971

ID114

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In September 1970, Arnold Glimcher, the founder of The Pace Gallery in New York City addressed a letter to Gianluigi Gabetti, the Olivetti Corporation of America's chairperson at that time. Glimcher submitted a peculiar proposal to the Italian manager; he inquired, in fact, about the financial support of the Olivetti Corporation in promoting an atypical auteur advertising campaign, which would have involved six spokespersons for the art-world and would have been focused on a specific topic - the safeguard of Planet Earth.
On behalf of the Olivetti Company, Gabetti agreed to cover the costs of the operation, which was finally held in 1971, under the name of Save Our Planet. This campaign was brought to life by the likes of Buckminster Fuller, O'Keeffe, Lichtenstein, Calder, Steichen, and Trova: all of them designed one piece of a six-poster gallery, each one depicting an endangered scenario (the cities, the wildlife, the water, the air, the wilderness, and the people).
By the means of their own peculiar artwork, they conveyed an unequivocally clear message: to protect the Earth from the increasing outcome of the climate crisis (which had already arisen in the 1970's, assuming early traits of a permanent state of emergency) artists had the ethical duty to raise environmental awareness amongst people. As a response to this firm call to action, the Olivetti Corporation donated all the retail revenues to the UN Children's Fund and to several UN agencies aimed at containing in tangible terms the outburst of the climate crisis – especially in the developing Countries - and at forestalling further damage to the environment. This submission is focused on the topicality of the artists' warning and on the resoluteness of the Olivetti Corporation in giving shape to a world of objects designed by the community and for the community. These objects were not merely the result of the industrial production, but they embodied a philosophical approach to the industrial design matter, since they were calibrated to fit man's gestures and movements, to meet his needs, and to fulfil his aspiration and his will, as an aware moral being.

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Keywords:
Olivetti
Communication
Campaign
Community
Planet Earth.

REFUSED LANDSCAPES. STRATEGIES OF RE-SIGNIFICATION BETWEEN PROTECTION AND INNOVATION

ID115

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Degraded landscapes 'of refusal' are fragile sections of land to which economic, social and political actions have taken away identity values, and caused fragmentation and high levels of degradation. They still maintain significant landscaped, social and cultural values that are part of the idea, introduced by the 2000 European Landscape Convention, of integral landscape protection as an overall condition of the territory. These places of refusal are in a marginalized condition, in a state of suspension, without a well-defined role, and isolated from the context in which they are situated. They reside in different dimensions, time and space, and characterize the territory as an outcome of the constant development of society, classifying themselves in different types and levels of complexity. Lago Patria is located on the Domitian coast between the mouth of the Volturno River and the Campi Flegrei region. It is a large basin of volcanic origin, powered by both fresh and sea water and since 1999 it has been part of the Nature Reserve Foce Volturno-Costa di Licola. The landscape of this territory morphologically subdivided into areas, appears fragmented and deeply marked by the massive infrastructural, settlement and productive systems. On the other hand, it has high landscaped values that are cohesive and organic. The naturalistic elements of the beach, pine forest, craters and lakes, combined with the presence of archaeological sites, such as the Liternum colony, reflect the strong bond that exists among environmental and topographical features and anthropic action. The relational aspect of the landscape project and the focus on the time factor endow a distinct specificity to this field of research, which aims to identify the expressible potential of these non-places, influential reserves of possibility. Through ecological strategies, such as the definition of gardens, the purpose is to provide a clear and effective response to the request for protection, safeguarding and preservation of heritage. A non-place becomes a natural element of shared beauty that generates new relational tension with the surrounding landscape, including archaeological emergencies as a part and parcel of the landscape and the starting point for the process of re-signification of these places. By developing design directions, which arise from the intrinsic peculiarities of the area, we aim to recreate relationships between spaces, rebuild dialogues through processes of ecological regeneration, and promote activities for the improvement of perceptual qualities and shared social initiatives in order to transform the asset into a key opportunity for the life of a community.

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Settis S., 2012, Paesaggio. Costituzione. Cemento. La battaglia per l'ambiente contro il degrado civile, Einaudi, Torino.

Keywords:
Landscape Project
Resilience
Heritage
Survey.

NEIGHBORHOOD AS A CITY-FORMING AND IDENTIFYING ELEMENT. THE DISAPPEARANCE OF THIS ENTITY IN THE MODERN CITY: THE CASE OF TIRANA

ID116

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This study seeks to highlight the city-forming and identifying elements, in the specific case of Tirana. These elements that help create an identity for the city, and its well-functioning, are not only tangible elements of the built environment, but can also be a combination of two perceived levels, the cooperation of tangible and intangible elements, which in their smallest unit create the most familiar and friendly atmosphere for the individual, in the role of the resident, that of the neighborhood. With the visible change of these last 25 years in Albania, as in the complexity of the society, the size of the population, the different design methods as well as the economic and political factors in the designing process, this entity has followed the same path, metamorphosis, until its disappearance or radical transformation into another phenomenon or another urban nucleus. The city and identity as a principle are not totally associated with each other. Since ancient times, the urban space has been a reflection of a collective identity that presented the natural adaptation of people to live in groups. In the framework of this analytical logic, this study is build on the constituent elements of the neighborhood, whether tangible or intangible, highlighting them and expressing the relationship they must have for this unit to function. However, an important and main element in this equation is the individual, who appears as a spectator in front of the built urban scene. As such, the individual must face a series of events, which are made possible by an activity generator, as the neighborhood itself, where the individual is introduced for the first time to socialization, cooperation, the feeling of belonging, begins to build a visual identity , or towards the establishment of the phenomenon of collective memory. It is important to note that the term public space is not associated with the neighborhoods, where different factors influence their perception. The study will be based on a series of images of how these units known until today in Tirana have undergone change, and which of those parts have disappeared, making it possible to identify the elements forced in the creation of this atmosphere. This analysis will be based on the theories of reading the territory, at the micro-urban scale, potentiating the edge elements that limit such a unit, the landmark elements that can be associated with its identity, and up to the shape of the space that is created by this forming elements.

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Keywords:
Neighborhood
City
Element
Disappearance
Tirana.

RELATIONSHIP BETWEEN CITY AND PORT THROUGH THE ANALYSIS OF ARCHITECTURAL AND TERRITORIAL CHANGE

ID117

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Keywords:
Survey
Drone
Point cloud
Photogrammetry
Greece.

The research proposes to analyse, through an analytical methodology that includes several phases related to the discipline of representation, the characteristics of an island port city and the multiple transformations that have occurred over time, such as territorial, historical and economic. The aim of the investigation is to collect, through a survey based on the combined use of digital tools, the graphic and numerical data of the site in order to document and learn about the architecture and landscape of Hydra Island. The island of Hydra located in the Saronic Gulf, washed by the Aegean Sea in Greece, is an example of how the management of the Aegean Sea can be decisive for the architectural and cultural developments of a place. An analysis of the waterfront reveals the relationship between the city and the port: the latter, in the past an integral part of the urban fabric, as in the case of Hydra, and relegated, instead, in the last century to the industrial area of the territory. Therefore, the relationship between the island and man is crucial, paying particular attention to the phenomenon of tourism. Such places are attractive poles subject to a high flow of people who influence a contamination of a natural and built site, due to the consumption of raw materials and a pollution that manifests itself in several ways, both acoustic and of the soil itself, leading to alterations of a place. In the analysis of the urban context of the island, the choice of the methodological approach to adopt was determined by the twofold need to document the city of Hydra and to understand its transformations over time, the dense urban fabric in relation to the port and the various religious and residential architectures that serve as attractive poles for locals and tourists.

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A SECOND-SKIN FAÇADE SYSTEM TO IMPROVE ENERGY EFFICIENCY AND AESTHETIC APPEAL: THE CASE STUDY OF MONTERUSCELLO

ID118

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Keywords:
Ventilated facade
Second-skin materials
3D printed materials
Retrofit action
Monteruscello.

In Italy, approximately 40% of the total energy consumption can be directly attributed to the building sector, which is also responsible for about 36% of greenhouse gas emissions. This is due mainly to the old age of most of the Italian buildings (-42% is more than 50 years old) and the slow renovation rates (-1%/year), resulting in poor energy performances. Over the years, several systems have been proposed to improve their energy efficiency, indoor comfort, and sustainability, with a particular interest in improving the building's envelope and façade systems due to the holistic influence of passive systems on the building design. This research focuses on evaluating a passive retrofit action on an existing building typology, namely the public housing of the Monteruscello district in Pozzuoli (south of Italy), from energy and environmental points of view. The district is realized on an area of -4 km2 after the earthquake in 1980 to provide housing for 20000 people, and is mainly composed of 4-level multifamily buildings. The buildings were made with prefabricated elements, which allowed for quick construction times, but entailed several construction problems due to the poor experience of local workers with the adopted technologies. Consequently, today the district's buildings suffer severe degradation and need energy and aesthetic upgrades.

To carry out the analysis, the 4-level multifamily building is modeled in TRNSYS considering its construction characteristics, then the installation of a second-skin façade system is simulated to assess its energy and environmental impact across a whole year. The second-skin design thoughtfully combines 3D-printed modules and fabric sections, providing energy and aesthetic improvements.

The simulation results returned a notable reduction in terms of primary energy consumption and carbon dioxide equivalent emissions in the retrofit cases compared to the reference case, with a significant impact when extending the retrofit on the whole district.

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THE INFLUENCE OF BAUHAUS ARCHITECTURE IN ALBANIA, IN THE 20th CENTURY

ID120

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The modern architecture is a cultural value of our times. Despite not being very old at the time, these buildings transmit a qualitative architectural evolution of Albanian modern architecture, but also a superior quality of the compositional mastery of their designers. At the beginning of the 20th century, Albania has been influenced by the Italian rationalist architecture, especially due to numerous Italian architects' presence, but after WW2, that Italian rationalism architecture was abandoned as a result of being regarded as an architecture of conquering and ruling fascism. The new political power saw the neoclassicism of the Soviet Union as a way to express the superiority of politics in architecture, but after the break of political relations with the Soviet Union, a desire to change architecture was seen in Albania, preferring a laconic, rational modernism, brought by the young architects of the Albanian school of architecture. The study pay attention to the works of these young architects, treating them under the influence of Bauhaus, to find aspects of similarity and inspiration on it. Questions like: are there buildings influenced by Bauhaus architecture, in Albanian architecture and during which time? what prompted the architects to look outside of Albania to find inspiration in another architecture? follow the study analysis. The methodology of the study is that of evidential, analytical and comparative description.
This analytical description highlights the most beautiful buildings made by Albanian architects in the 60s-90s, comparing them with the works of the great Bauhaus masters. At the end of each analysis, the study highlight the today condition of these buildings, enhancing attention to the attitude we should maintain towards this beautiful part of Albanian architecture, which, even though it is not bound by the heritage law, should be preserved and restored as part of the history of modern architecture in Albania.

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Keywords:
Albania
Modern
Architecture
Bauhaus
Heritage.

MUSEUMS IN HERITAGE BUILDINGS AND CONSERVATION ENVIRONMENT

ID121

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Museums embody our cultural heritage, making them buildings of extraordinary importance with a deeply representative nature. In fact, museums have a special status due to the fact that, among other things, they are responsible for the preservation of valuable and often special cultural objects from the influence of the environmental conditions of preservation. In Albania, there are two main typologies of museum buildings: those designed specifically to become museums and those that were originally cultural heritage buildings and later reused as museums. Often museums are located within cultural and historical heritage buildings that were not built to be museums. In accordance with the function they had, they adopted a passive approach to the creation of their internal environment. They rely on passive measures to adapt to the climate and include architectural features that play an important role in increasing their thermal performance. This study is based on the second typology of museums in Albania and has taken as a case study the "Onufri" Iconographic Museum in Berat. The main objective of the study was to quantify, evaluate and examine the internal conditions of these museum buildings, with a special emphasis on thermo-hygrometric parameters. These parameters are essential variables that govern the preservation of precious artifacts. By thoroughly examining the indoor climate, this study aims to gather data and knowledge about the current condition of the facilities. It will assess the effectiveness of passive strategies used and analyze how well architectural features contribute to the thermal performance of buildings. The focus will be on parameters related to temperature and humidity, as they directly affect the preservation of objects. The resulting data and recommendations drawn from this comprehensive analysis will be of immense value to future renovation projects aimed at improving museum buildings. The ultimate goal is to improve the indoor climate conditions within these spaces, providing optimal conditions for the preservation of artifacts. By implementing the suggested recommendations, curators and museum authorities can take proactive measures to protect and safeguard their valuable collections for generations to come.

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Keywords:
Museums
Cultural Heritage Buildings
Sustainability.

ENHANCING FLOOD ANALYSIS ACCURACY WITH SENTINEL-2 SATELLITE IMAGERY AND REMOTE SENSING TECHNIQUES

ID123

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Flooding is a natural disaster that poses significant risks to human lives, infrastructure, and the environment. Accurate mapping and timely monitoring of flood extents are crucial for effective disaster management and response planning. Remote sensing techniques, particularly the utilization of satellite imagery, provide valuable tools for flood analysis.

The initiative focuses on the Buna River region, situated in the northwestern part of Albania, adjacent to the border with Montenegro. The area experiences periodic floods, primarily occurring from November to March, making it a susceptible zone for potential risks. This study explores the utility of SENTINEL-2 satellite imagery combined with the Normalized Difference Water Index (NDWI) for flood analysis. SENTINEL-2's spectral bands, particularly Green and Near Infrared (NIR), provide valuable information for water detection. The NDWI is calculated from these bands, enabling the differentiation of water and non-water areas. By applying thresholding techniques to the NDWI values, accurate flood extent maps can be generated. The results showcase the potential of SENTINEL-2 imagery and NDWI for monitoring flood dynamics over time.

The integration of remote sensing with other datasets and techniques enhances flood management strategies. This research demonstrates the importance of utilizing remote sensing technologies for mapping and monitoring flooding events, aiding in disaster response and mitigation efforts.

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Keywords:
Remote sensing
Flooding
NDWI
SENTINEL-2 imagery.

PRELIMINARY ASSESSMENT OF LANDSLIDES AND HYDRAULIC HAZARDS OF CASERTA PROVINCIAL ROAD BRIDGES BASED ON CARTOGRAPHICAL DATA

ID1214

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Keywords:
Landslides
Floodings
Existing Bridges
Hazard Assessment
Italian Guidelines.

In the last decades, the occurrence of exceptional rainfalls is significantly increased, mainly due to the effects of climate change affecting our planet. These exceptional events are getting more intense and extreme, as well as frequent, provoking the overcoming of expected values defined according to statistical data (rainfall curves). In addition, in some areas of our territory, existing sub-services are no longer able to face the combined effect of urbanization and the consequent reduction of permeable surfaces. The combination of these aspects hardly tests the safety of existing structures and infrastructures. With reference to existing road bridges, this is clearly testified by several recent collapses that occurred all over the Italian peninsula. As a matter of fact, together with seismic and traffic actions, the effect of natural phenomena (i.e. landslides and floodings) can be considered among the most significant and frequent causes of bridge failures. In the national scenario, the engineering community agrees on the fact that the safeguarding of bridges must be addressed by pursuing a holistic approach, including these major sources of risk: structural, seismic, geological and hydraulic. In this sense, a valuable risk-management methodology is proposed in the recent Italian Guidelines for existing bridges.

Based on this premise, in the present study, the geological and hydraulic hazards based on cartographical data are assessed for 200 road bridges handled by the province of Caserta, Southern Italy. The study refers to level 2 of the multi-level procedure provided by the Italian Guidelines. This propaedeutic application allowed for recognizing a subsample of structures potentially affected by geological and hydraulic risks, which need to be further investigated according to the more detailed levels of the methodology.

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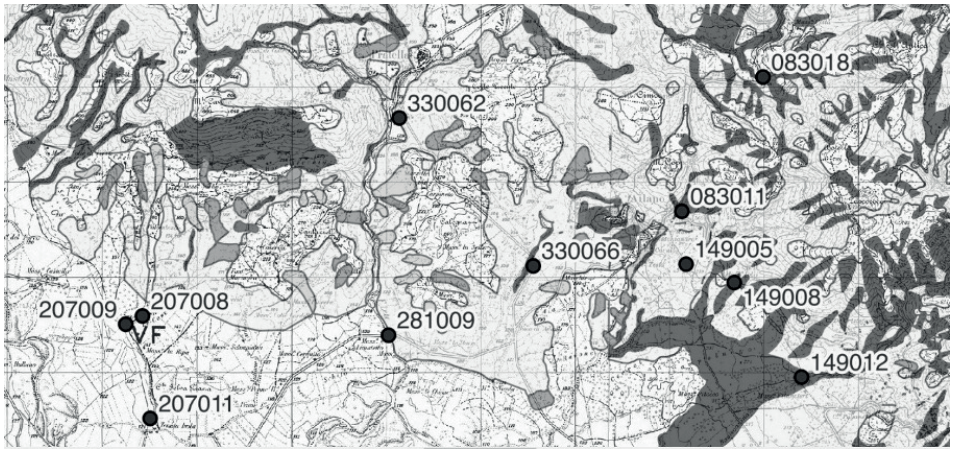

KNOWLEDGE PROCESS FOR CULTURAL HERITAGE PRESERVATION: THE CASE STUDY OF CASERTAVECCHIA BELL TOWER

ID125

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The present study focuses on the masonry bell tower of the Church of St. Michele Arcangelo placed in the ultra-centenarian village of Casertavecchia (CE), Italy. Bell towers represent one of the most recognizable and peculiar symbols of the Italian architectural tradition. The notable slenderness of these structures makes them as fascinating as they are vulnerable from a seismic point of view. The present work comes from the awareness that, today, one of the greatest challenges of the scientific community is to conserve and protect these monuments. In this study, the issue represented by the seismic risk mitigation of such a valuable monument is approached by means of an integrated approach including several disciplines: Architectural History, Surveying, Restoration, and Structural Engineering. Thus, the landscape of Casertavecchia is first examined in order to deepen the knowledge of this ancient medieval village and its historical roots. Then, a careful and systematic study of historical sources is performed to formulate an initial hypothesis of the modifications made to the structure through the years. The execution of on-site diagnostic investigations allowed for verifying the reliability of the collected historical sources and for representing the actual structural configuration of the tower. Moreover, the genesis of the interventions was reconstructed and discussed through a historical-critical analysis aimed at understanding their connection with the evolution of the codes [3] and the seismic events that affected the monumental asset. On the whole, the need to adopt integrated strategies including different scientific disciplines for the knowledge, management and preservation of the monumental building heritage is strongly highlighted. The present study, which has been developed within the V:alere research project PREVENT, sets the stage for further developments aimed at assessing the seismic vulnerability of the masonry bell tower under investigation by means of more accurate analyses, which will be addressed within the national PON project GENESIS.

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Keywords:
Knowledge
Bell Tower
Cultural Heritage
Vulnerability assessment
Structural analysis.

THE CHURCH OF ST. MICHELE ARCANGELO IN CASERTAVECCHIA, ITALY: A PRELIMINARY ANALYSIS FOR STRUCTURAL ASSESSMENT

ID126

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The monumental building heritage, widely spread all over the Italian territory, showed a notable proneness to suffer severe damage in case of seismic events, as testified by the recent earthquakes that occurred in the whole peninsula (De Matteis & Zizi 2019). The problem related to the seismic risk mitigation of such valuable heritage is far from trivial and involves several scientific disciplines (e.g. drawing, history of architecture, structural engineering, etc.). In the present study, the problem related to the conservation and preservation of the monumental cultural heritage is dealt with by investigating the case study of St. Michele Arcangelo Church in Casertavecchia, Italy (Rouhi et al. 2022, Chisari et al. 2023). The church construction started in 1311 and the current configuration results from a complex construction process. During the centuries, the monument experienced several restorations and structural interventions which notably transformed the original conception of the church. Based on historical sources, confirmed by an accurate survey and on-site investigations, the evolution of the geometry and structural features of the church have been reconstructed. The study highlights the fundamental and propaedeutic role played by the knowledge process towards accurate vulnerability assessment and appropriate selection of retrofitting strategies. The proposed study is part of a wider ongoing activity, developed also within the PON GENESIS research project, which includes the structural modelling of the church and the execution of laboratory tests on reduced-scale portions of the church for an extensive assessment process of the church aimed at its protection, conservation and valorisation.

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Keywords:
Cultural Heritage
Masonry church
Vulnerability assessment
History of Architecture
On-site surveying.

ROAD BRIDGES AS KEY ELEMENTS FOR INCREASING INFRASTRUCTURE RESILIENCE AND REDUCING TERRITORIAL RISK

ID127

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Keywords:
Resilience
GIS
Structures
Knowledge.

The road network represents an element at risk for natural hazards and also a key infrastructure for all phases of Disaster Risk Management (DRM) cycle. Hydrological and meteorological events have been influenced over the years by climate change in terms of frequency, severity, pattern of occurrence, and complexity (Glasser 2020) and affected complex fragile territorial systems. In particular, the last climate-related events have revealed how the functionality of road network and the accessibility of entire territorial system directly depend on the vulnerability of critical elements such as bridges (Pitilakis et al. 2016). The risk assessment of bridges, as critical elements, provides inputs for a territorial risk assessment, such as the accessibility of inner territories and the redundancy of roads. This study aims at understanding the relationships between bridges as elements-at-risk and part of the strategic road network and the influence they have on the overall risk levels of a territory. Through a GIS analysis of a set of selected roads of the Provinces of Caserta and Avellino (Campania Region), the features of the selected roads (hierarchical level, strategic role, redundancy) can be combined with data on the municipalities (population, territorial services, traffic flows) they connect and the hazardous levels for the main natural hazards (earthquake, landslides, floods) to provide maps on the systemic vulnerability of the case study area. Also, the application of the methodology to the case study area represents a first summary of the results of the assessments carried out for each bridge to identify the most widespread critical issues and hotspots to focus on for increasing the capacity of territorial systems to deal with multiple natural hazards.

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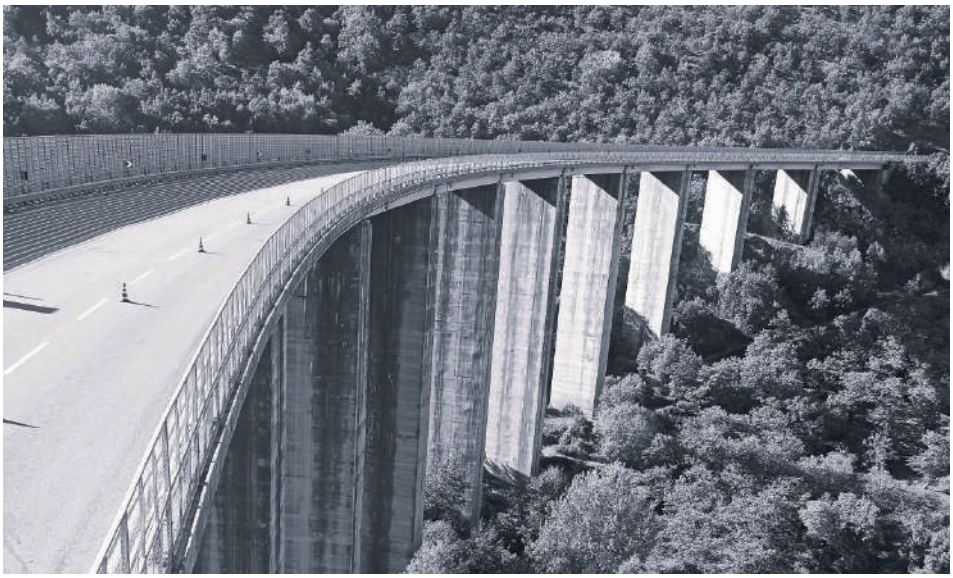

MODELING DECAY IN HBIM TO DOCUMENT, KNOWLEDGE AND PRESERVE CULTURAL HERITAGE

ID129

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It is an achieved concept that HBIM is a very useful system to manage all information about architectural heritage. Any activity or intervention on historical buildings requires scientific and professional collaboration between several disciplines, starting from the metric and documentary survey to the design, maintenance, restoration, conservation and valorisation of the manufact. In fact, BIM platforms continuously develop tools and the scientific community processes workflows to simplify and implement the process of knowledge, management and protection of historic buildings by creating a digital twin as rich as possible of information. Nowadays metric surveying techniques make it possible to generate photorealistic 3D point cloud models with more data about the appearance of manufact's surfaces, possibly also recording decay symptoms. This registration is only visual, because the point cloud, as is well known, is a replacement for what the instrument eye sees. The possibility of being able to manage through a single model a large amount of data, including the state of conservation of a building, in recent years has seen the experimentation of many solutions for the documentation of decay phenomena in BIM systems. In this scenario, this paper presents the workflows and solutions tested by the authors for documenting degradation in historic buildings for management and documentation purposes.

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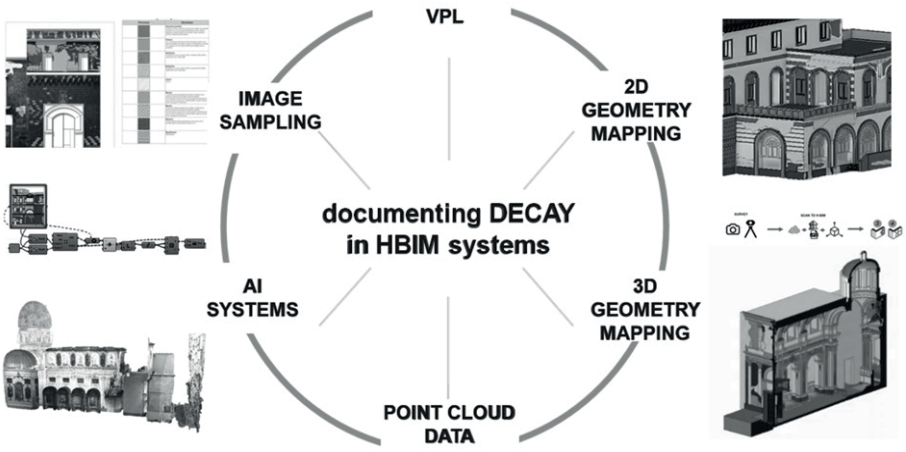

Keywords:
HBIM
Decay mapping
Digital tools
Reality based survey
Cultural Heritage protection.

ARCHITECTURE AND "DESIGN D'ARGOT". LANDSCAPE CONSTRUCTION AND INTANGIBLE HERITAGE OF KNOWLEDGES

ID132

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This work starts from the research project "Second-hand architecture: a new life for confiscated property". In a broader sense, "giving a second chance" means recovering contemporary existing heritage. Confiscated property can be of various types: valuable artefacts, dilapidated structures, masonry buildings, reinforced concrete buildings, industrial warehouses, and so on. The theme of the landscape is an important aspect in order to better understand the territory and the changes it has undergone over time as a result of the work of man. The modification of places, even natural ones, takes place through the work of people who, with the construction of buildings, even small ones, and with the action of cultivating agricultural land, change the configuration of spaces and, therefore, modify the landscape. Therefore, the modification of places takes place not only with the creation of architectural volumes or arboreal volumes - the sowing or planting of trees - but also through design tools. The case of the tools used in architecture as well as in agriculture is illustrated in this text also through the graphic reconstruction of the operations carried out in order to be able to prepare the tools used in the modification of the territory and environments. Another important aspect referred to, here, refers to the materials used to make the work tools. The iron that is worked when it becomes incandescent because it is subjected to heat takes on particular value for the realization of the hoes and, therefore, by modifying the initial appearance of the product, the material will take on the desired shape and designed by the craftsman. It is interesting to establish how much a single technical culture is capable, through only the delineation of shapes and the creation of tools, of satisfying the different needs of different work environments and in any case capable of restoring, in a resilient way, the sphere of people's lives. A tool such as the hoe appears particularly interesting because, packaged in particular shapes, it manages to satisfy diversified needs, needs which also influence the general composition of the image of the landscape. The "design d'Argot" is the opportunity to create work tools developed by the empirical knowledge of the craftsmen, has allowed, for example, the creation of different types of hoes that have been used in different ambient, from agriculture to construction. Illustrating the process of making such artefacts represents a way of knowing the history of places and also documents processes of mutation of the forms that have constituted the tools for improving the conditions of men and their evolution. Hoes, spades, shovels and other types of tools are not only ways of helping man's work but also document his creativity.

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Keywords:
Landscape
Design d'Argot
Building site
Historical best practices.

COLLECTIVE DOMAINS AS CUSTODIANS OF HERITAGE IN INNER AREAS

ID133

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The purpose of this contribution is to stimulate a reflection on the 'modernity' of common properties and civic use in the current lively framework of strategies for Ecological Transition and Climate Change (Green Deal, 2019; European climate law, 2021). The growing attention to the sustainable management of territories is leading into a renewed interest in those institutions concerning the property rights belonging, by custom, to all members of a well-defined community which shares rights and duties with respect to a system of resources. In Italy this ancient institutions, merged by law under the sole term of 'collective domains' (Law 168/2017) and diffused in all the national territory, especially in inner areas, are currently custodians of environmental, social and cultural values. In particular "common properties", in their variety of forms, historical experiences and denominations according to the different Italian regions, represent a model of conservation of territorial assets, embracing forests, woods, pastures, waterways, etc. Therefore, in the path of ecological transition, such institutes, dating back to ancient times, are believed to be not only «another way to own» but also a model to ensure the conservation of natural resources and, then, land protection. Specifically toward the global action for the climate change with its adaption strategies, the principle of long-term heritage conservation which characterize common properties represent a model where the communities have already historically implemented the practice of prevention, even in the absence of climatic risks, pursuing a patrimonial perpetuity which is a factor of resilience for the same communities. In this framework the on-going research activity takes place, regarding the common properties in Campania region, where the highest concentration is in the rural and mountain areas. A first exploration concerned the municipalities pertaining the Matese Regional Park, those belonging to Caserta province and analyzed inside the project "RIPROVARE". The future step aims to assess the contribution of common properties in this territories, in terms of "ecosystem services", with specific reference to climate change mitigation activities.

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Keywords:
Common property
Heritage
Values
Mitigation
Assessment.

THE LAND RECLAMATION OF THE SELE

ID134

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After the end of the First World War began the problem of the veterans of the war, who, after the long absence of their families and to be repaid for the sacrifice made for Patria, were eager to receive a just reward.
In this regard, a specific Organization was founded in 1917, the National Fighting Society (ONC) with the intent to implement essentially an extraordinary work of enhancement of the national agricultural heritage, giving assistance and a chance to build a life in the countryside to war veterans. The agricultural action of the ONC can be summarized as follows:
- Land reclamation and mountain development Ha. 209,389
- Land conversion Ha. 181421
- Main and secondary canals Km. 548
- Drainage roads km. 544
- Inland waterways km. 565
- Cases Ha. 21,600
- Tillage Ha. 50.700
- Completed Ha. 566
- Farmhouses No. 5.593
- Direct growers, new small landowners assigned by the O.N.C. N.19.404.

With the Land Reform Campania - Law 841 - 21 October 1950, the Special Section Land Reform of the National Labour Fighters undertook to give greater stability to the work of the fields by increasing the peasant property, the action in Campania was concentrated in the provinces of Caserta and Salerno. The coveted areas are named after the rivers that lie on those territories, Sele (53 Ha) and Volturno (73 Ha). The territory of Sele was predominantly marshy with some small areas dedicated to buffalo pastures, activity started after the First World War, the reclamation works intensify over time with the aim of strengthening agriculture and the canning industries. The work of recovery has been carried out through expropriations and allocations to families of veterans and those in need who would have cultivated the land and continue the farms. With the construction of the new villages, education was provided to the illiterate population, at the time very numerous.
The design of the countryside took place through the farm limits that were marked with the sinking, small canals then connected to the main drains, the houses are connected to each other with farm roads and country roads. Rural housing projects have been prepared considering the size of the farm and the family unit, the size of the farms ranged from 4 to 8 Ha, the shares instead 1.5 Ha. In April 1955 the Special Section illustrates the results achieved in the Sele: 779 farms 361 shares for a total of 5149 hectares and 1140 peasant nuclei, the result of expropriations.

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Keywords:
Countryside 1
Rural architecture 2
Foundation city 3
Works of land reclamation 4.

RURAL ENVIRONMENT OF BASSO VOLTURNO. TRANSFORMATIONS IN THE TWENTIETH CENTURY

ID135

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The italian legislation on full remediation – bonifica integrale –approved with Royal Decree of 13 February 1933, No. 215, disciplined the agrarian reform of the Basso Volturno territories. The hydraulic rehabilitation of the marshes upstream and downstream of the final stretch of the Volturno river – from the city of Capua to the mouth – has been carried out through the elevation of areas below sea level with the input of ground and the construction of hydrovore plants equipped with powerful water pumps. Subsequently, the main links to the territorial road network were realized to make the reclaimed territories accessible. The new lands and suited to agricultural production were assigned to the "Opera Nazionale per i Combattenti", a charitable organization founded in 1917 to facilitate the reintegration into civil society of World War I veterans. In April 1939 the dictator Benito Mussolini visited the territories of Basso Volturno – about eighteen thousand hectares of fertile land in the north and south of of the river –made viable thanks to infrastructure works carried out in previous years. Subsequently, the foundation settlements of Borgo Appio and Borgo Domizio were designed and partially built, intended to collect the common functions - administrative offices, shops, schools, churches, medical clinics etc. - of the reclaimed territories. The agricultural areas were divided into farms, in which new houses were built assigned to veterans who moved to the Basso Volturno with their families. The houses were of different types and sizes, built in economies with materials preferably available on site. The territorial transformations continued in the post-war reconstruction period, regulated by the new laws on agrarian reform issued by the Republican government in the 1950s and later. Currently only a few infrastructure and rural buildings are in use, built by the "Consorzio di Bonifica del Basso Volturno" and the "Opera Nazionale per i Combattenti". The agricultural territory of the last stretch of the river Volturno, subject to significant urbanization in recent decades, is losing its distinctive features, environmental and architectural.
For this reason, careful studies are necessary on the historical stratifications of the plain of Basso Volturno, in order to preserve its cultural and identity values.

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Keywords:
Cultural heritage
Rural environment
Material culture
Land reclamation
Agrarian reform.

CULTURAL HERITAGE AND CLIMATE CHANGE: BLOCKCHAIN AS A NEW OPPORTUNITY FOR DIGITAL MONITORING

ID137

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Climate change has assumed a central role in the regeneration planning of national territorial policies. However, to mitigate and slow down its unstoppable growth, measures are needed to limit waste land consumption to the detriment of environmental sustainability, to allow the recovery of urban spaces and the improvement of social and environmental life.
The reflection, set in the NRPP and which intends to implement by proposing an interdisciplinary "brain to brain loop", aims to weave a link between the ecological-digital revolution and the protection of cultural heritage, with the definition of a new concept of sustainable urban welfare, greater inclusiveness of citizens through the reduction of environmental impact on places of culture and with the landing to their universal usability, eliminating physical and cognitive barriers. Therefore, by stimulating the process of green transition and the digitisation of cultural heritage, by examining the regulatory experiences, the solution could be to abandon a purely static and conservative conception of the protection of the cultural heritage in favor of a dynamic conception, exploiting the technology with the use of the "blockchain" which allows monitoring, capable of encouraging, not only a mapping of the historical and artistic heritage present in Italy, but also to safeguard its integrity through architectural interventions through a continuous verification of their status.
Therefore, the combination of digital transformation of cultural and climate heritage is the key to protecting the natural, material, and intangible environment.

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Keywords:
Cultural heritage
Sustainable development
New technologies
Blockchain
Ecological Transition
NRPP.

ROYAL SITE OF CARDITELLO. RECONVERSION OF THE LANDSCAPE OF CAMPANIA FELIX

ID138

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In 1787, the Campania Felix Area was chosen by Ferdinand IV of Bourbon for the construction of the Real Site of Carditello; the area was previously intended for breeding, for the selection of royal horses and for agricultural and dairy production. Over the centuries the site has undergone a gradual process of abandonment and today, although the Real Site has acquired a cultural function, the area remains partially abandoned. With the intention of recreating a social and economic induced gravitating around the Real Site, three projects are proposed which, taking up some of the area's ancient vocations, create a constellation of virtuous activities connected to each other by a horse-riding and pedestrian path. The three projects: buffalo breeding and dairy, stables and winery, despite being born together and with the same intention, are governed by different formal approaches. The dairy company structures its construction on the position of the road axis that leads to the palace. In order: the road coming from the Volturno areas, from Naples and Caserta. From here a calibrated composition of volumes is stratified on a water collection system connected to the existing royal plant still in use. The stables partially hidden behind a curtain wall is structured in functional parts, on one side is the area for horse training and the riding school.
Three slats with pitched roofs alternate with spaces for outdoor training. The right side is instead dedicated to free horse riding and a path wind through the pre-existing clearing.
The main area is the catalysing one, where the riding school is located. The terraces are built starting from the ground and with a single gesture they cover the seats with a light reticular structure covered with wooden slats. The winery, on the other hand, is made up of two volumes covered by a single perforated plate, supported by imposing pillars which expand and contract with variable trends.
The two volumes have a single floor above ground, while the major development of the activities takes place on the underground level. Another plate reproduces the system in a small scale, covering rooms for the customers.

Keywords:
Landscape
Productivity
Recovery of the past
Connection
Enhancement.

METHODOLOGIES FOR ASSESSING THE DAMAGE CAUSED BY FLOODS TO CULTURAL HERITAGE

ID139

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The flood in Emilia Romagna last May 2023 accelerates the need to identify suitable methodologies for assessing damage from hydrogeological instability to cultural heritage. Due to its geomorphological conformation, Italy is among the EU countries most subject to risk. Given the unpredictability of these natural disasters (unlike events such as earthquakes and volcanic eruptions, kept under observation by specific surveillance institutions) it is also necessary to identify methodologies for assessing the damage caused by floods and landslides. In the last edition of 2021, ISPRA identified around 50 thousand Cultural Assets potentially exposed to serious damage from hydrogeological instability (23,3% of the Cultural Assets registered on the Italian national territory). Associated with pollution, landslides and floods are among the main factors of damage and degradation of architectural, monumental, archaeological and landscape assets. As with seismic events, the economic assessment of damage from floods and landslides is based on the preliminary definition of the physical effects deriving from the event itself. In order to determine the economic value of a damage, in order to predict an adequate sum to restore it, it would be necessary to know the "initial value" of the asset prior to the damage itself. In the specific case of the flood in Emilia Romagna, from an initial estimate of the damage caused to museums, archives, libraries, monuments and archaeological sites, gardens and parks, the figure could vary between 4 and 8 million euros. That of attributing an adequate economic value to cultural heritage is a topic widely discussed and investigated in the Italian estimation disciplines. The Italian political system uses the replacement cost (ex post evaluation) as a method of assessing damage. Since not all Cultural Heritage can be "monetised", it should be a priority to establish not only a single method for evaluating the "replacement" costs, but also adequate risk prevention and an insurance system against natural disasters.

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Keywords:
Flood damage
Cultural heritage
Hydrogeological risk
Damage assessment.

APPLIED COST-BENEFIT ANALYSIS TO DETERMINE AND EVALUATE THE FEASIBILITY OF STRUCTURAL STRENGTHENING OF THE HERITAGE BUILDING

ID141

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Although the heritage building of the National Gallery of Art in Tirana was designed in the 70-s with the old Albanian Design Codes, full structural strengthening was not included in the reconstruction project started in 2016. The structure was not damaged by the earthquakes of 2019, but it was decided to carry out an overall strengthening of its structural elements, respectively the columns and foundations will be strengthened with reinforced concrete jackets technique, 5 new anti-seismic reinforced concrete walls will be added, while the slabs and beams will be covered with high-strength structural mortar. But is it economically advantageous to strengthen a structure that wasn't damaged by the seismic events of 2019? The answer is affirmative, because admitting the extra expense, it will make the structure seismically safer (according to Eurocode Guidelines), and also lengthening its lifespan, increase its value, and lowering future maintenance and insurance expenses. In this study, a comprehensive cost-benefit analysis will be performed to determine whether it would be feasible to strengthen the structure.

Keywords:
Structural Strengthen
Cost-Benefit Analysis
Heritage Building.

STRUCTURAL AND ECONOMIC ADVANTAGES OF STRENGTHENING WITH REINFORCE CONCRETE JACKET TECHNIQUE THE BUILDING OF NATIONAL GALLERY OF ARTS IN TIRANA

ID142

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The existing building of the National Gallery of Arts in Tirana was not damaged by the 2019 powerful earthquakes, but its structural elements will be strengthened, in order to make it a building with high seismic safety. The strengthening of the structure consists mainly in the reinforcement of the existing foundations and columns, with a concrete jacket layer, applying vertical and horizontal reinforcement, and the construction of 5 new reinforced concrete walls. The beams and slabs which have optimal existing reinforcement and dimensions, do not need concrete jacket layer reinforcement, but will be repaired with high-strength structural mortar. The technique of strengthening structural elements with carbon fibres coating (FRP) could have been chosen, but according to the analysis carried out with empirical calculations and finite element software's, the technique of strengthening the structural elements with a reinforce concrete jacket technique resulted seismically safer and more effective in economic terms. In this paper, an analysis of the economic benefit of strengthening the structure with concrete layer jacket and steel reinforcement will be presented.

Keywords:
Structural Strengthen
Advantages
Heritage Building.

HOUSING UNITS IN TIRANA AND THE PARKING SPACES

ID143

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Keywords:
Parkime te hapura
Parkim automjeti
Garage parking
Free parking.

In big cities, such as Tirana, parking spaces dedicated to residents are critically important elements of the housing unit, second after the residential building. This research aims to identify transformations of the residential housing unit of the last 30 years. The overall layout, shape, and organization of open spaces between residential buildings have changed. Before the 1990s, the housing units were characterized by a variety of elements such as internal roads, gardens, greenery, playgrounds for children, urban furniture, service areas, etc. However, parking spaces for the vehicles intended for the residents were not included, as a major amount of the population did not own personal vehicles. In addition to the open space not being intended for outdoor parking, indoor and underground parking was also not designed as part of the buildings. Underground floors of residential buildings of the housing units were utilized as basements and used as shelters or service areas. Ground floors, on the other hand, are accessible from main streets, and partially contained commercial and service areas, as well as housing. Secondary streets inside the housing units were only accessed by emergency vehicles such as ambulances and fire engines, as well as trucks for the distribution of wood during winter.

Since the 1990s until the present day, simultaneously with other economic and political transitions, the number of personal vehicles has increased. Thus, mobility in residential areas, especially in those built before 1990, has changed completely, altogether with the layout and elements of the open space of housing units. A considerable amount of green areas has been occupied by open parking lots, mainly used for commercial and recreational services on the ground floors. In addition, new constructions emerging in the spaces between existing buildings designed before 2000 did not include closed parking spaces inside the building, as it was not an obligation of urban planning regulation at the time. Without excluding essential alternations of today's living conditions, the main approach is focused on modifications in the functionality and layout of these spaces.

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THE STANDARDIZATION OF SCHOOL BUILDINGS IN ALBANIA: ARCHITECTURAL TRANSFORMATIONS AND THE EROSION OF IDENTITY

ID144

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This article examines the standardization process that affected school buildings in Albania, leading to the loss of their distinct architectural features and the erosion of the country's identity. Following the Italian occupation, Italian architects who previously designed vocational schools in Albania created unique and bespoke structures characterized by exceptional qualities, distinctive character, and meticulous stylization in terms of floor plans, volumes, and interior designs. However, as part of the standardization process, these schools were transformed into standardized entities with uniform typologies and classroom arrangements, often incorporating lightweight, prefabricated modules. The rapid construction of these schools served the dual purpose of facilitating occupation and promoting education. This study comprehensively investigates the architectural aspects of educational buildings designed by Italian architects in Albania, focusing on the subsequent transformation towards standardization and the emergence of standardized architecture within the Albanian context. Through careful analysis of historical sources, architectural records, and scholarly literature, the study traces the trajectory from unique, distinctive schools to standardized structures. The analysis is divided into two sections. The first section provides an in-depth examination of select project cases, exploring the design principles, spatial configurations, and stylistic expressions of the original Italian-designed schools. Special emphasis is placed on the distinctive features of floor plans, volumetric compositions, interior furnishings, and design elements that contributed to the individuality and identity of each school. The second section focuses on the standardization process in Albania, considering the historical and socio-political factors that influenced the transformation of these distinctive schools into standardized entities. This study enhances our understanding of the historical and cultural context in which the standardization of school buildings occurred in Albania. It highlights the broader implications of architectural standardization and its impact on the identity and character of built environments.

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Keywords:
Standardization
School buildings
Albania
Architectural transformation
Italian architects.

DEVELOPMENT OF GEOPOLYMER MATERIALS FOR SUSTAINABLE DESIGN AND ADVANCED APPLICATIONS

ID145

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The research for alternative sustainable materials has gained great attention due to the green policy introduced by the European Union through the introduction of the Next Generation EU package based on the circular economy and Ecological Transition Plan and has created an effective route to design materials with low energy and low environmental impact. Sustainable architecture and buildings involve the use of "green" materials to significantly reduce environmental impacts. In this perspective, the academic and industrial world is urgently called to develop new materials and processes characterized by an ever-lower environmental impact and the possibility of being efficiently recycled at the end of their use cycles. A possible key process concerning the reusing and valorization of a wide variety of metallurgical, industrial, urban, and agricultural wastes, could be represented by the production of alkali-activated materials and geopolymers (see Figure 1). Geopolymers are amorphous ceramic materials obtained through the alkaline activation of aluminosilicates of different natures both in natural form, starting from clayey materials such as kaolinite, and as by-products of other industrial processes. These raw materials can react in alkaline conditions and form amorphous species characterized by cross-linked networks consisting of Si-O-Al-O bonds that are considered a valid alternative to cement-based materials due to their characteristics such as thermal stability, low shrinkage, freeze-thaw, chemical and fire resistance, re-cyclability, and long-term durability. In this contribution, innovative and sustainable geopolymer-based materials were presented to realize sustainable elements for applications in the field of architecture, buildings, acoustic insulation, and biomedical applications. This framework presented the preparation and characterization of geopolymer-based materials by valorizing industrial wastes and by-products (such as porcelain stoneware wastes and so on). The good physical, mechanical, and morphological characteristics, suggest their use in the field of sustainable architecture. The data that emerged from the physical-mechanical characterizations allowed a preliminary investigation related to their use in the parametric modelling of a multilayer panel. A comparative "cradle to grave" Life Cycle Analysis between the production processes of ceramic stoneware products and geopolymeric materials based on ceramic wastes confirmed the effectiveness of the Eco-design approach that represents a strong contribution to the environmental and economic sustainability of the Italian ceramic industry. Moreover, lightweight geopolymer-based hybrids were prepared and preliminary sound absorption characterizations, demonstrate the real possibility of realizing advanced sound insulatzion systems. In fact, specific geometries were architected within the geopolymer systems to obtain the metamaterial configuration that returns the best absorption performance. In addition, foamed geopolymers due to their shape and capacity to bond to the bone matrix, amorphous silicate-based materials have drawn much attention in a scientific study on the regeneration of hard tissues. Geopolymers have recently been studied as prosthetic biomaterials, and there are few academic papers on their use in Bond Tissue Engineering (BTE).
Finally, future developments will be addressed to design sustainable advanced geopolymer materials through 3D printing technology, by using data deriving from chemo-rheological and chemo-kinetic investigations.

Keywords:
Geopolymers
Sustainable design
Acoustics
Buildings
Architecture.

THE IN-BETWEEN THREAD AND PROCESS OF HISTORICAL CENTRES

ID147

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What is the definition of a "Historical Center"?
"Historical centre is a distinct urban territory, representative of a historical period or a stage of development of the town/village, consisting of heritage elements, material culture, which includes, in addition to the urban structure, architectural elements, environmental, cultural, historical, landscapes, in and around the area, archaeological evidence, panoramas, urban profiles, perspectives and reference points." In Albania, there are identified different morphologies of "historical centres" from south to north. Most of the territory is made of historical centres that are part of big city neighbourhoods, such as Tirana and Vlora, Shkodra, Korca etc. However, what happens when the historical centres develop the same exact boundaries as the administrative boundaries of the villages? How does their historical, urban, and architectural heritage evolve with the evolution of the village? How does this impact the proposed solutions for the development of the areas?
The paper focuses on two case studies, the Historical Center of Bënja, in the village of Bënja, Përmet and The Historical Centre of Dhërmi, in the Village of Dhërm, Himara. These important centres have the same expansion and relief but different environments and social and cultural contexts. Studying different layers and their evolution will give us a better understanding of what strategies we need to focus on for their further development.

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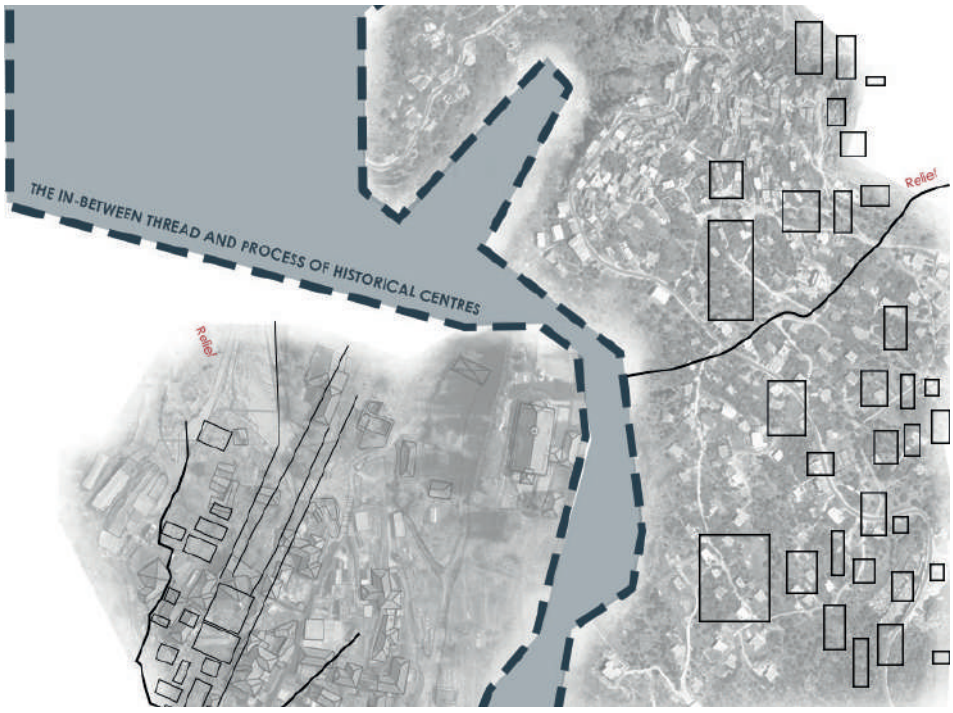

Keywords:
Heritage
Historical-Centre
Restoration
Regeneration
Landscape.

HERITAGE DAMAGE AND LOSS: STRENGTHENING CULTURAL HERITAGE RESILIENCE IN A CHANGING CLIMATE

ID148

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As climate shifts are having a catastrophic impact worldwide, cultural heritage sites and historic communities are increasingly at risk, often resulting in varying degrees of loss and destruction. The magnitude and rate of the threats are unequivocal, ranging from increasing extreme weather events, floods, wildfires, erosion, and desertification, escalating with every increment of this phenomenon. The compounding impacts are often interrelated, frequently making heritage sites vulnerable and causing cultural landscapes to deteriorate. The paper introduces climate change's increasing and lasting effects on historical sites while also considering the possibility of conflicts arising between measures to combat climate change and those intended to safeguard cultural assets. By defining the issue, it then presents near-term interventions of mitigation and adaptation measures that could be implemented to promote sustainable development. It foresees the challenges and emphasizes the potential for culture and heritage to advance community resilience and disaster risk reduction. Climate adaptation in cultural sites has been underexplored and associated with a lack of a comprehensive understanding of the heritage in climate risk assessments. A strategic shift towards investing in new forms of development is necessary to improve heritage resilience. In this approach, the increased severity of disasters is a catalyst to encourage cultural change. Additionally, awareness-raising is needed at all levels of society on the challenges posed and the vulnerability of cultural assets. Local participation, national and international cooperation, as well as competent on-site management are essential tools in combating the effects of climate change and should be supported by the government. The paper concludes that climate change is an emergency that calls for a rapid, equitable and realistic transition. A firm management policy is required to guide the future implementation of the management practices of priceless patrimonies within the milieu of climate change.

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Keywords:
Climate change
Cultural heritage sites
Management policy
Heritage resilience.

THE REVITALISATION OF THE TEPELENA FORCED LABOUR CAMP IN THE MUSEUM OF COLLECTIVE MEMORY

ID151

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The revitalisation of heritage sites and dictatorship-era buildings offers an opportunity to preserve and revive cultural heritage while acknowledging a difficult part of history. This paper explores the revitalisation of the Tepelena Forced Labor Camp as a case study of the potential for transforming negative historical heritage into a museum of collective memory.

The research methodology includes a comprehensive review of the history of the Tepelena Forced Labor Camp and the analysis of its facilities. Investigation of shared memory and how heritage artefacts influence its development follows. The main topics of the study are the process of regeneration and the difficulties encountered in turning the camp into a museum of shared memory.

The rehabilitation project will include a wide range of operations that will help preserve historical relics from the camp, plan artefact exhibitions and refresh the space. The research results show that revitalising the Tepelena Forced Labor Camp into a museum of collective memory significantly impacts visitors. The museum evokes strong emotions related to Albania's history and collective memory. In conclusion, revitalising the Tepelena Forced Labor Camp into a museum of collective memory is essential for preserving the history of suffering in the communist dictatorship and educating future generations about the past. This study provides valuable insights into the revitalisation of historic sites and their transformation, providing a roadmap for other countries and institutions facing similar challenges.

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Keywords:
Heritage preservation
Revitalisation
Lost memory
Forced Labour Camp
Museum.

CONSOLIDATION AND RESTORATION INTERVENTIONS IN KRUJA CASTLE AFTER THE 2019 EARTHQUAKE

ID152

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This research focuses on the restoration and valorisation of fortification heritage in Albania. Kruja Castle, selected as a case study, was built in the 5th-6th century. It is an elliptical castle. During the period of Skanderbeg, it became the stronghold of the resistance of the Albanians against the Ottoman occupation. Even today, it is known as one of the most popular and most visited places by tourists. The Clock Tower preserves all stages of the construction of the castle. The tower is built of irregular stone masonry, bound with mud mortar. The thickness of the walls varies from 85 cm at the top of the parapet and up to 2 m at its base. The surrounding stone walls go around the entire perimeter of the castle, where they are sometimes not visible due to the construction inside the building. The work started with preliminary research and analysis of this building's typology. A critical stage was the collection of information, the study of archival materials and the historical analysis of the castle. The studied materials are made available by the National Institute of Cultural Heritage. The research deals with the analyses of the castle pathology and the proposals for the necessary restoration interventions after the earthquake damages. A factual survey and analysis of material degradation are made at the beginning of the article. The earthquakes of the year 2019 further damaged its structure, increasing the size of the existing cracks and creating new cracks; for this reason, there was a need to carry out restoration interventions along the entire walls of the castle. The survey with a total station and drones was carried out to document the current configuration and state of conservation. Then the proposal of the necessary conservation interventions came after a consolidated process of theoretical and factual study of the materials. As part of the knowledge of the current state of conservation, the analysis and documentation of the pathologies that affected the castle walls and the tower were important.
At the end of the paper, all necessary interventions are recommended to preserve and conserve this important fortification heritage. It tries to lay the foundations for later research.

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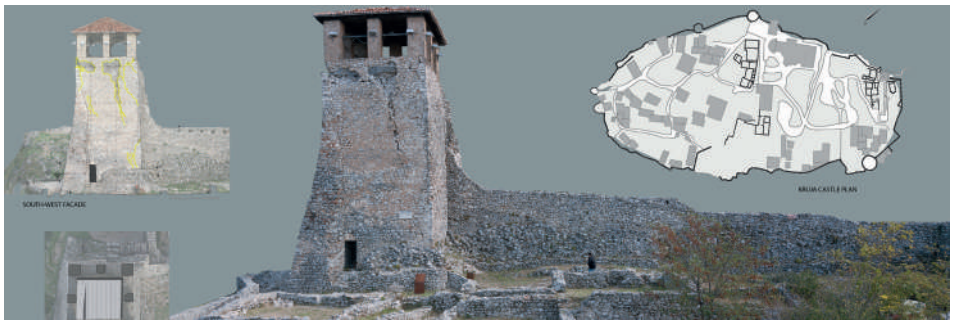

Keywords:
Cultural Heritage
Survey
Restoration
Archaeology
Kruja Castle.

COLOURED RENOVATION OF VLORA HISTORIC DISTRICT

ID153

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In Albania, Bazaar was one of the traditional city's significant social-economic and cultural focal points.
During the communist period, they were deprived of their spatial importance, partly destroyed and forgotten. From the year 2010 forward, there has been a growing interest in renovating these urban spaces and making them places of social interaction. By renovating the built space, the authors aim to revive old memories of the cities. These streets and plazas were the main attraction of the city. The markets and cafes displayed a whole rainbow of products and fabrics. People of various origins in their traditional clothing mixed with the brightly painted facades surrounding the space. The authors use Color as a tool to restore the visual memory of the historic district. This paper aims to analyze the use of colour in the rehabilitation of the building facades surrounding the bazaar. Also, the paper will try to draw a line between the painted faces and the recreation of spatial memory of the old bazaar.
Urban space in the historic parts of the city has unique values, which have impacted the redesigning of the area. The human mind perceives colour faster than shape and volume. The configuration of the coloured facades helps us recreate the memory traces of a forgotten space.

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Keywords:
Color
Memory
Renovation
Facades
Vlora Historic District.

LOST MEMORY AND REVITALISATION OF SPAÇ PRISON

ID156

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Albania has inherited a considerable number of objects which, during the communist dictatorship, served as places of suffering for political convicts and opponents of the regime. From the overthrow of communism in the 90s until today, very little has been done to preserve and highlight this critical part of the collective memory. Facilities such as the infamous Spaçi Prison are left at fate's mercy and in danger of destruction. Spaçi prison was a forced labour camp for political prisoners in the communist regime. Today, the complex of buildings remains a symbol of the horror and violence perpetrated during the years of communism in Albania. The paper's focus is the study and evidence of the institutions of suffering during the period of the communist dictatorship, as well as the proposal to preserve Spaçi Prison and turn it into a museum of collective memory. The article deals with the project for the restoration and adaptation of the building and the identification of materials and technologies that will be used to create a suitable environment for visitors. The methodology consists of the study and evaluation of the conservation policy used in the restoration processes of the Spaçi Prison, which will focus on several aspects of this concept, including an investigation of the environment and the architectural style of the Spaçi Prison. The measures will be taken to turn Spaçi prison into a complete museum of collective memory. It will also be addressed how a project like this can affect the growth of tourism and the local economy, opening new employment prospects and stimulating local infrastructural development. The conclusions emphasise the necessity of preserving and reviving the objects of suffering from the period of the communist dictatorship, turning them into places of remembrance for the regime's victims. The proposal for revitalising Spaçi prison as a museum of collective memory would promote the awareness and education of the new generations and act as a catalyst for local tourism and cultural promotion, attracting visitors from Albania and abroad.

Keywords:
Lost Memory
Preservation of Heritage Revitalisation
Museum of Memory
Spaç Prison.

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GEODESIC AND AERO-PHOTOGRAMMETRIC SURVEYS FOR THE RESTORATION OF THE DURRES AMPHITHEATRE

ID157

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The Amphitheatre of Durres (beginning of the 2nd century AD) is the most significant monument of the Roman period and one of the most visited monuments of the city of Durres. The amphitheatre has been listed as a national cultural monument since 1973 and part of the tentative list of UNESCO World Heritage sites since 1996. It is a unique example of its kind in the entire Balkan region for its size and a rare example among Roman theatres due to its partial location on the natural slope of the hill of Durres.

Ancient places of performance, such as theatres, amphitheatres and circuses, are among the few monuments still – in some cases – serving the purpose they originally designed. As ancient cultural landmarks, they form a heritage encompassing not only the monuments of Greco-Roman times but also the history of the alterations made to them, the successive uses to which they were put, and the cultural and artistic traditions associated with them. Today, the objective is to preserve a store of scientific information, manage the monuments in the perspective of development, and, where circumstances permit, infuse ancient sites once more with their full role of places of artistic creation, shared enjoyment, and emotion. The archaeological heritage constitutes the primary record of past human activities. Therefore, its protection and proper management are essential for archaeologists and other scholars to study and interpret it on behalf of and for the benefit of present and future generations. The protection of this heritage cannot be based upon the application of archaeological techniques alone. It requires a broader basis of professional and scientific knowledge and skills. Some elements of the archaeological heritage are components of architectural structures and, in such cases, must be protected according to the criteria for safeguarding such structures laid down in the 1966 Venice Charter on the Conservation and Restoration of Monuments and Sites. For these and other reasons, protecting the archaeological heritage must be based upon effective collaboration between professionals from many disciplines. It also requires the cooperation of government authorities, academic researchers, private or public enterprises, and the public. These include the responsibilities of public authorities and legislators, principles relating to the professional performance of the processes of incentivisation, survey, excavation, documentation, research, maintenance, conservation, preservation, reconstruction, information, presentation, public access and use of the heritage, and the qualification of professionals involved in the protection of the archaeological heritage.

To fully preserve the authenticity of the Durres Amphitheatre, a combined photogrammetric study should be applied. The outcomes of the aerial photogrammetric survey will be the following: Georeferenced Orthophoto with at least 10 cm/px resolution; Digital Elevation Model (DEM); Texturised 3d Model; Point Cloud (Scanning with Lase Scanner); Georeferenced Vectorial Planimetry; and Photoplans with 5 cm/px resolution. The density of the scanning points with the laser scanner will be no more than 15 mm, and the error will be no more than ± 0.2 cm. The Archaeological and Architectural Assessment will be based on a depth analysis of the document and information collected during survey activities (partially overlapped with this task) and on-site direct observation.

Keywords:
Archaeology
Photoplan
Georeferenced
Photogrammetry
Laser Scanner.

KRITIA:
AN ASPECT OF HYDROGEOLOGICAL INSTABILITY IN ANCIENT GREECE

ID159

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As is known, the Greek world does not have a univocal vision of the environmental problem, and negative attitudes are generally traced back to a morally reprehensible assessment, hybris. The exception is instead an interesting passage from Plato, which, in the Critias, attests, in a timely and significant way, the environmental degradation present in the heart of Greece (Cr. 110D ss.).
The philosopher attributes the deforestation of Attica, which took place in prehistoric times, to natural causes and, in particular, to violent cataclysms which dragged down from the mountains an enormous quantity of soil which, far from settling, slid uninterruptedly until it disappeared into the depths of the sea. In the times that Plato defines as "ancient", the barren mountains of Attica were imposing hills, covered with forests, while the plain was extremely fertile. Plato dates the beginning of these cataclysms to 9000 years before. The period of time that the philosopher provides coincides with that of the so-called "Neolithic Revolution". These events caused the consumption of the territory and the substantial modification of the landscape. The philosopher in fact describes the Attica in which he lives as an emaciated body and stripped to the bone. The Platonic passage is all the more interesting as it is inserted in the dialogue that outlines the myth of Atlantis and the fabulous golden age experienced by men well before the historical era. The ancients already considered Plato's story mythical, with the sole exception of Aristotle, who considered the description of Atlantis historical. In any case, the text is unique in the Greek world, where the prevailing attitude of the writers (Aeschylus, Xenophon) is to consider natural resources inexhaustible. For Plato, on the other hand, the environmental problem is a reality to which man contributes decisively and which, on an ideological level, marks the border between a golden age of humanity, one governed by reason, in which nature and man lived in symbiosis; and one of decadence, in which the first bears the signs of bad governance. He is therefore the first to establish a clear relationship between environmental instability and human policies.

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Keywords:
Plato
Atlantis
Deforestation
Policy
Kritias.

REUSE AND RECYCLE IN EARLY MODERN BUILDING SITE. SOME OBSERVATIONS AND EXAMPLES

ID160

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Climate Change depends primarily on the amount of greenhouse gasses emitted by our societies. Sustainable development, which includes the use of renewable materials, is crucial in reducing this impact. In a closed system, such as our planet, raw materials are finite, but present societies are acting as the resources were infinite, creating a system that endangers our existence and that of all living beings. Building sites are very revealing in this respect: raw and artificial materials are extracted and produced, used, then thrown away as rubble. But it wasn't always like this. In pre-industrial world, construction was conformed to the maximum saving and reuse of materials. Every element was recycled as much as possible: just think of the "noble" examples of reuse of ancient ruins, of marbles, of precious spolia, but nothing was thrown away, from nails to stones, bricks, plaster, tiles, timber. Different examples of reuse and recycle, mainly from early modern Venetian context, will be illustrated. Not only building materials, but also waste derived from other productive activities, such as shipbuilding or soap, glass, and iron production, were recycled in construction.
Since 2008 the European Union started to enact laws on the "End of Waste", to transform waste in product, construction rubble included. Very recently (2022) in Italy an important law update has been enacted, establishing how to use the waste from construction and demolition as a "raw material" instead of virgin materials still extracted from quarries and mines. The subject, thus, is particularly relevant at present and those early modern case studies have much to teach to today's societies, to make our built environment and cultural heritage a true "place of Life".

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Keywords:
Building Site
Early Modern Architecture
Recycle
Reuse
Venice.

ITALIAN TANNING DISTRICTS: A CONSCIOUS SYSTEM FOR AN ETHICAL AND SUSTAINABLE FASHION

ID161

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The art of tanning originated with man, coming immediately after hunting, before agriculture and handcrafts. So there is an ancestral connection with this material. The tanning industry triggers a circular system by recovering, every year, about 1,700 square kilometers of raw leather, the disposal of which would produce 5 million tons of greenhouse gases.
The high quality of Italian leather is the result of an ancient tradition and continuous research in innovation and sustainability to ensure minimization of environmental impact as well as respect for workers and animals. The model of the Italian tanning industry is based on a district pattern composed mostly of small, family-owned enterprises; therefore, it can be defined as a "craft-based" system. There are three main Italian tanning districts: the one in Veneto, which produces for the upholstery sector; the one in Tuscany, known for the quality of leathers destined for high fashion; and finally the district in Campania, which specializes in the tanning of small leathers for clothing, footwear and leather goods. The organization into districts is the key element for efficient production: the tanning process takes place within specialized supply chains that transform the by-products of leather processing into a resource, avoiding their disposal in landfills, and this is a big advantage for the circular economy. In addition, the intervention of certifying bodies increases society's trust in Italian tanneries.
Bodies such as ICEC, UNIC, LWG, ZDHC, EMAS verify not only the degree of traceability of leather, but also compliance with environmental management criteria, chemical waste management, occupational health and safety, the quality and Made in Italy guarantee of raw materials and manufactured goods. If we add to all this the blockchain technology that contributes to the traceability of information, we will have built a safe and conscious tanning environment/system for a more ethical and sustainable fashion.

Keywords:
Sustainability
Awareness
Tradition
Innovation
Tanning districts.

RECYCLING INDUSTRIAL LANDSCAPE. THE ROLE OF NATURE BASED SOLUTIONS FOR (PERI)URBANITY IN TRANSITION

ID163

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Acting on marginal parts of cities implies reflections on sustainable transformative modalities of urban contexts that act on their resilience, increasing it. The need to restore the integrity of environmental balances and to develop action strategies to contain risk exposure is reflected in the identification of unconventional, adaptive and flexible solutions aimed at the decontamination of compromised environmental matrices and at the innovative and creative reuse of urban contexts. Within the urban and landscape regeneration project this is expressed in the concept of Nature-Based Solutions – NbS, namely "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (IUCN, 2016:4). Their use allows to outline spatial development strategies useful to start new forms of regeneration and remediation of ecologically compromised contexts considering them as innovative hubs in which to test long-term, sustainable and circular solutions. In this sense, an example case has been developed by the Department of Architecture and Industrial Design in collaboration with the ASI Caserta Consortium and with the Department of Territorial Planning of the Campania Region during the workshops carried out with the students of the fourth year of the Laboratory of Urban Planning. The proposed case study concerns the industrial agglomeration called Caserta, a typically periurban area characterized by physical, functional and landscape degradation and by the presence of abandoned industrial artifacts, landfills, marginal areas and a strong agricultural component bordered by urban fringes and mountain reliefs to the east where there are several quarries. Particularly important within this framework is the presence of the landfill and storage sites of Lo Uttaro, the former industrial area of Saint Gobain, which is the subject of a partial conversion process, and the former municipal slaughterhouse, now decommissioned. The entire area is well connected with the road infrastructure network (urban, suburban, highway) and railway, both perceived as the origin of territorial fractures. The strategy for this area tries to fix the critical issues detected, generating new green infrastructure made of public space, new equipment, slow mobility routes, residential wedges, enhancement of agricultural areas and areas for temporary and informal uses. In particular, along the north-south axis is imagined the creation of a park system that from the area of the former Ma.C.Ri.CO. runs out the agglomeration keeping together the spaces of disposal and contamination, residual areas close to the infrastructure. The park system is configured as a filtering area between the urban agricultural industrial components in which to bring together a series of actions, including ecological, such as the creation of wetlands for the safety of soils, for the natural development of biodiversity and for the development of recreational activities.
The design strategy provides also for a rethinking of the main axes of connection, reinterpreting them as green infrastructure, equipped and cycling that, grafting into the urban fabric and industrial plate, generate new public space reserves.
Finally, the large equipment of the new Polyclinic, now isolated cluster in a predominantly agricultural area, becomes an integral part of the new system-park providing for new residences connected with hospital functions and open green spaces.

Keywords:
Urban planning
Industrial development areas
Regenerative city
Urban strategy
Nature based solution.

KNOWLEDGE FOR THE MANAGEMENT OF TOURIST FLOWS IN MEDITERRANEAN ISLANDS

ID165

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The research presents the results of the study conducted in the summer of 2021 with instrumental drone survey campaigns and the relative comparison of historical and iconographic sources with the results of current knowledge. The structures in the port of the village of Fiskardo are analysed, with particular reference to the urban sea-facing fifth. The study begins with the documentation found in historical archives where the archipelago is usually referred to as the Heptanese, "the seven islands", since it includes several other smaller islands in addition to the seven larger ones. An analysis of the few historical records found, such as Portolans, paintings, nautical charts, traveller's notebooks, shows that they were inhabited from 1800, from the time the islands acquired geographical unity through the European independence achieved from 1204, when at the end of the Fourth Crusade, they became a dependency of the Venetian Republic. The Kingdom of Greece, created as a result of the Greek uprising against the Turks that broke out in 1821, only had its current political-geographical borders defined after the Second World War, when Italy's custody of the twelve islands in the eastern Aegean was terminated. The survey, as a graphic technique for knowledge and documentation of the sites, made use of drone technology, the only method capable of documenting the current state of the sites in the presence of large crowds of tourists. Infact, the surveys were conducted in August 2021 in the presence of tourists, bathers and numerous boats entering and leaving the port. The activity of surveying the port by drone is configured as a graphic unicum both for the techniques used, typical of the discipline of drawing, and for the documentary analysis of the few sources found and compared. The drone used, which was small in size, facilitated filming even with a large number of tourists staying in the many port areas and crowding the boats in transit. The images taken were subjected to the photogrammetric post-production stages to arrive at digital models of knowledge of the places. This activity is configured as a search for identity characteristics through actions of knowledge of the places and geometries of the port through the use of UAV technologies.

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Keywords:
Mediterranean
Flows
UAV
Survey
Port.

THE POSSIBILITY OF THE PAST. A FIELD OF EXPERIMENTATION FOR CONTEMPORARY ARCHITECTURE

ID166

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PhD, Architect

The condition of our contemporaneity, with regard to the theoretical and constructive definition of architecture, brings into play a number of areas of complexity that make it necessary to define an extremely vast and heterogeneous modus operandi. Multiple, in fact, are the instances characterizing the architectural project, making it necessary to reflect in relation to the possibility of applying a strategy that is consistent both culturally and according to a necessary methodological practice. To this end, a reflection is proposed regarding an ongoing practice, Progetto Scavolo. In the area of the Rimini hinterland, under the specific cultural influence of a territory rich in history and tradition, stands the Borgo di Scavolo, a minute and stratified ancient settlement defined by the presence of a series of historical artifacts, immersed in the rural naturalness of northern Montefeltro. The design experience, starting from the client's requests, was based on the need for an architectural recovery capable of uniting the rich historicity of the complex consistently with the renewed needs of contemporary times.
A project that sought to combine, consistently with issues of primary regenerative need, a series of specific approaches aimed at restoring a unified and coherent image of the small village. Starting from purely technical issues, up to the definition of a culturally coherent design process, the Progetto Scavolo aims to stand as an exempla towards the construction of the architecture of our time, capable of confronting a rich historical palimpsest and at the same time projecting it within a dimension of renewed architectural contemporaneity.
It is in this sense that the proposal for this research is aimed, first and foremost, at elucidation concerning the cognitive, before the technical and architectural, process that formed the cultural basis for the redevelopment project, going on to interrogate the processes at the territorial scale and then at the scale of detail that define such work on the architecture of the near and distant past.

ARMANDO BRASINI: TIRANA'S MONUMENTAL AXIS

ID167

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Armando Brasini (Rome, 1879-Rome, 1967), a very well-known architect early in the twentieth century in Italy, despite studies on him from important academics such as Franco Borsi and Paolo Portoghesi in the sixties, is a character mainly studied for his monumental architectures. This paper gives a different point of view starting from a certain part of his work, through the study of archive material preserved at the Accademia di San Luca and at the Archivio Centrale dello Stato di Roma, examining for this purpose his work in Albania, in Tirana, characterized by the project for the layout of the urban center partially realized. The work is about the creation of an impressive axis, interesting from a practical and symbolic point of view, in north-south direction, with the purpose of splitting the old town, in the first half of the twentieth century still in Ottoman style, from the most recent administrative center, in a city which aimed at a European future. This project allows us reinterpreting the topic of monumentality also in relation to other contemporary points of view such as the caoutious reduction proposed in the same years by Gustavo Giovannoni. A project capable of connecting metaphorically Tirana's past, present and future, of separating but at the same time connecting and able to overtake city's dualism, halfway between East and West. The concept of this monumental boulevard was very modern and could satisfy, from a practical point of view, the needs of an urban center that first wanted to certify its status as a city and which would later aim at becoming a metropolis, representing also the cornerstone for the following development. The analysis of this less-known project, despite the critical studies about Brasini, will allow, not only, as said, to give a different point of view on a certain part of Brasini's work, but also to provide a debate on the development of modern cities with regard to the cultural and urban stratification problems, and also with regard to the the city center and suburbs comparison.

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Poster Session

IFAU CONFERENCE POSTER SESSION

Luigi Corniello
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The IFAU23 Conference Climate Change and Cultural Heritage included a Poster Session reserved for students and undergraduates of the Department of Architecture and Industrial Design of the Bachelor's Degree Courses in Design and Communication and the Bachelor's Degree Courses in Building Sciences and Techniques on the topics of climate change and knowledge of places.

The students participated with 82 Posters: Abete Teresa Gaia, Adamo Serena, Adinolfi Vincenzo, Aliperti Gelsomina, Amen Alessandro, Antonelli Gaia, Aspride Martina, Auletta Rosaria, Bellati Federica, Cafaro Giulia, Cammarosano Mariantonietta, Campoluongo Vincenza, Carbone Francesco, Carmellino Francesco, Casillo Michelangelo, Castaniere Giovanni, Castiglione Vito, Cepparulo Elisabetta, Chilimari Mansueto Giuliano, Ciotola Noemy, Ciurlia Paolo, Coppola Angela, D'Angelo Simona, De Angelis Dalila, De Luca Gloria, De Rosa Emanuele Maria, De Stavola Pierluigi, Dell'Imperio Pia, Della Valle Riccardo, Di Mauro Roberta, Diana Arianna, Dovere Emiliano, Esposito Emiliana, Esposito Jessica, Fabozzi Federica, Ferraro Antonietta, Fragliasso Carla Pia, Gaglione Sara, Galluccio Martina, Garofano Annunziata, Gerardi Katerina, Ginti Giuliana, Gondola Carmela, Guitto Alyssa Anna, Iannelli Camilla, Ianniello Valentina, Iervolino Daniel, Iovinella Gianfranco, Izzo Michele Benedetto, Lama Umberto, Lamagna Martina, Landolfi Paolo, Lanfreschi Giorgia, Limmatola Maria,Luongo Giulia, Marsili Giada, Massimo Francesco, Mastroianni Francesco, Migliaccio Maria Giovanna, Moccia Alessandro, Monte Federica, Nappa Simona, Nazzaro Gianluca, Panico Rosaria, Papa Enrico, Pardi Noemi Anna, Parisi Francesco, Perdonò Mariagrazia, Petrillo Dennis, Pisani Luca, Postiglione Maria Giovanna, Puleo Laura, Ruffo Martina, Russo Giuseppe, Salvati Francesca Maria, Scartaghiande Anna, Schiavone Pietro Antonio, Simonetti Sara, Trotta Antonietta, Viscardi Claudia, Volpe Ermelinda, Zannotti Marilena

Participants included 13 graduates from the Bachelor's Degree Course in Building Sciences and Techniques, 10 undergraduates enrolled in the Bachelor's Degree Course in Design and Communication who are completing their final dissertation, and 59 students from the Graphic Creation Laboratory of the Bachelor's Degree Course in Design and Communication.

IDP001

Teresa Gaia Abete
Degree Course in Design and Communication

Serena Adamo
Degree Course in Design and Communication

SERENA ADAMO

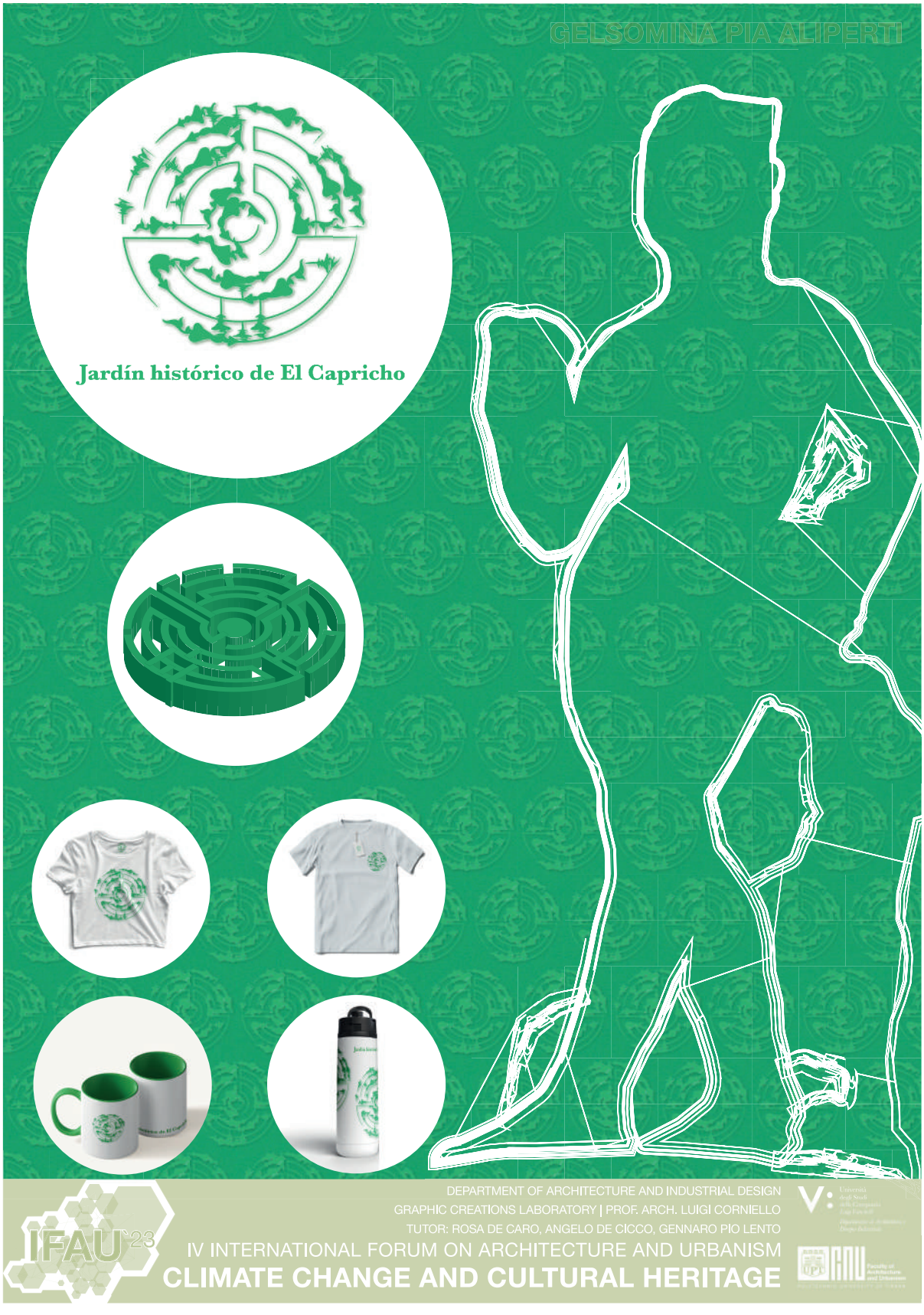
IDP003

Vincenzo Adinolfi
Degree Course in Design and Communication

VINCENZO ADINOLFI

Nacionalni park Krka

Gelsomina Aliperti
Degree Course in Design and Communication

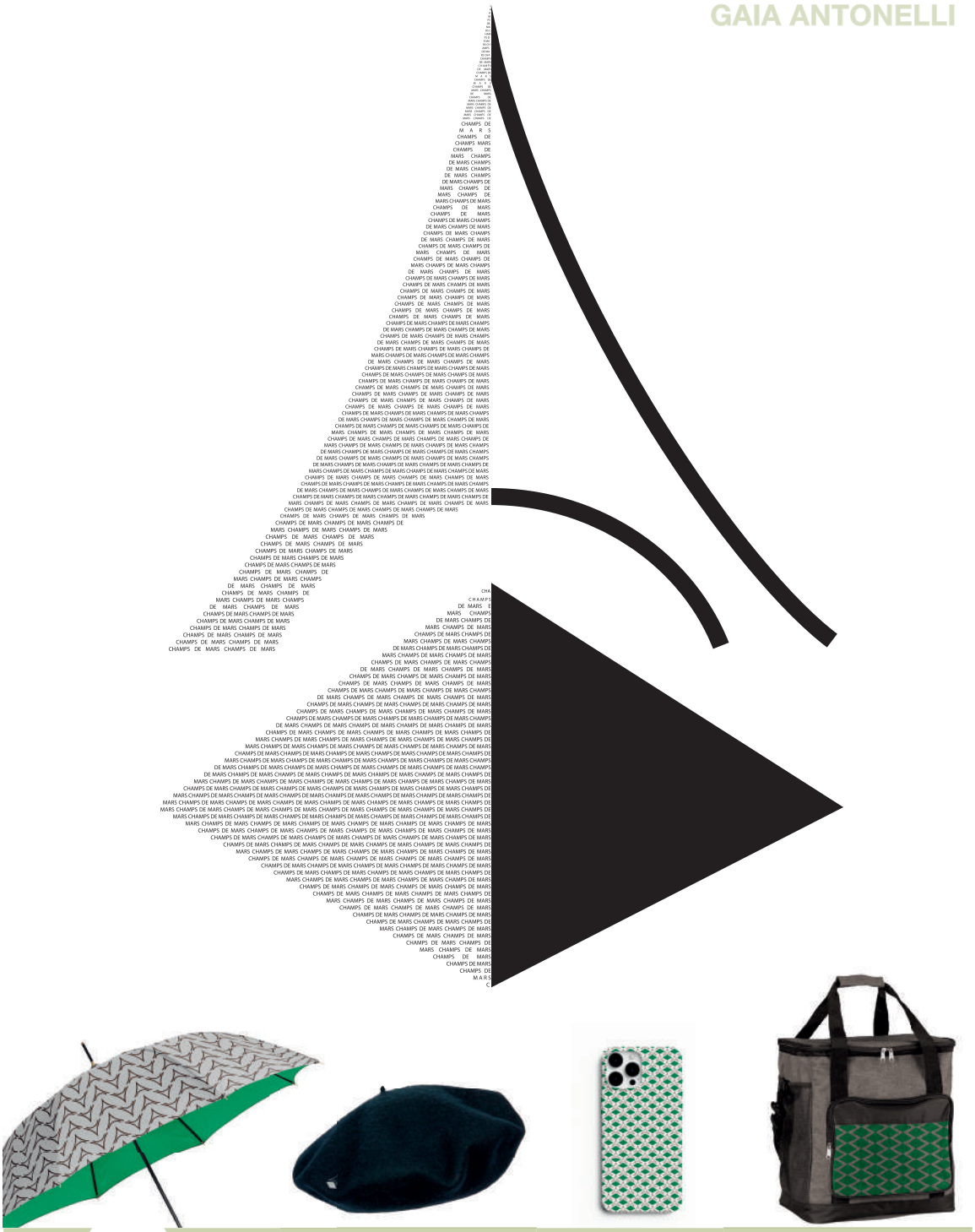


IDP005

Alessandro Amen
Degree Course in Design and Communication

Gelsomina Aliperti
Degree Course in Design and Communication

GAIA ANTONELLI



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CLIMATE CHANGE AND CULTURAL HERITAGE

IDP007

Martina Aspride
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Rosaria Auletta
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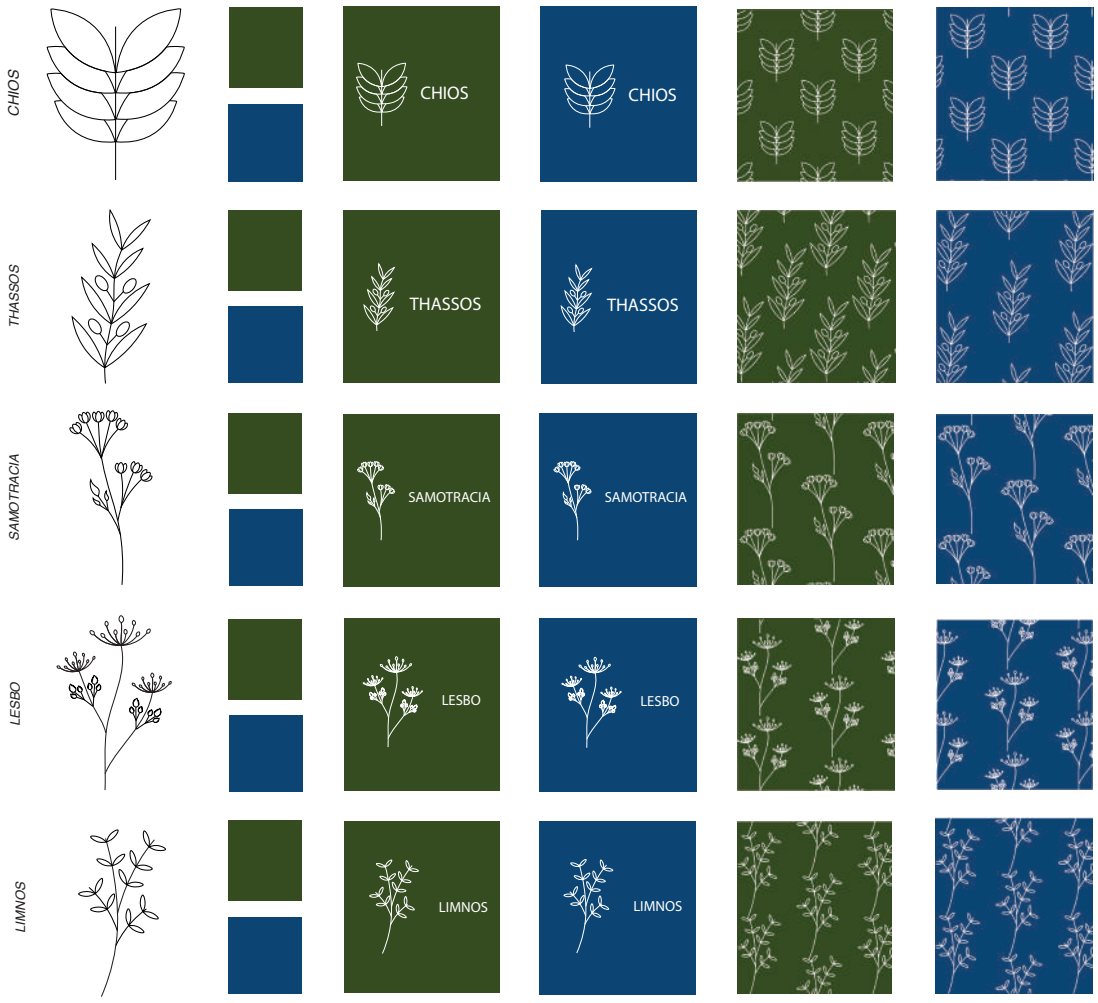
ROSARIA AULETTA



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BACHELOR DEGREE ICAR/17 DRAWING | PROF. ARCH. LUIGI CORNIELLO
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IDP009

Federica Bellati
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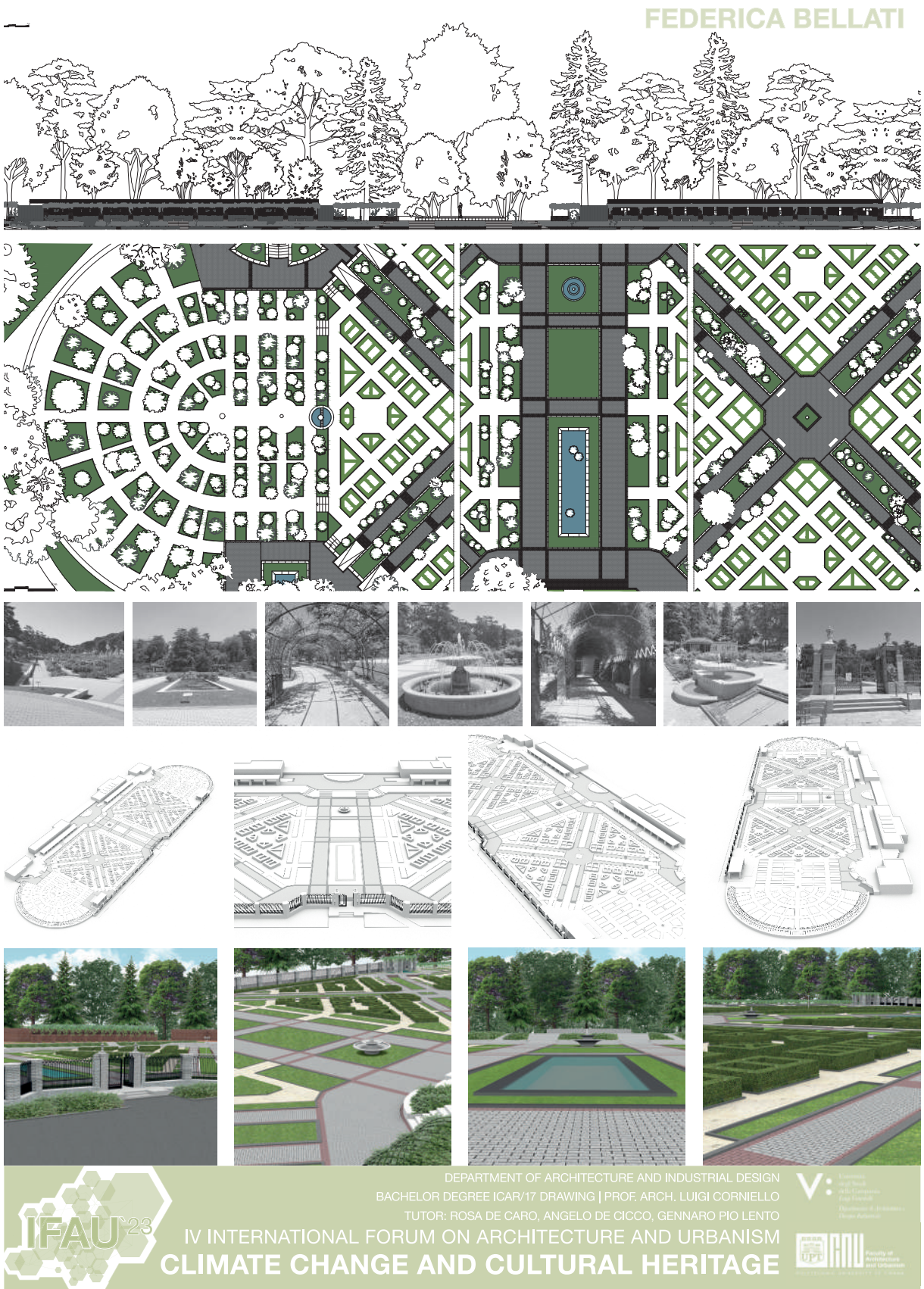
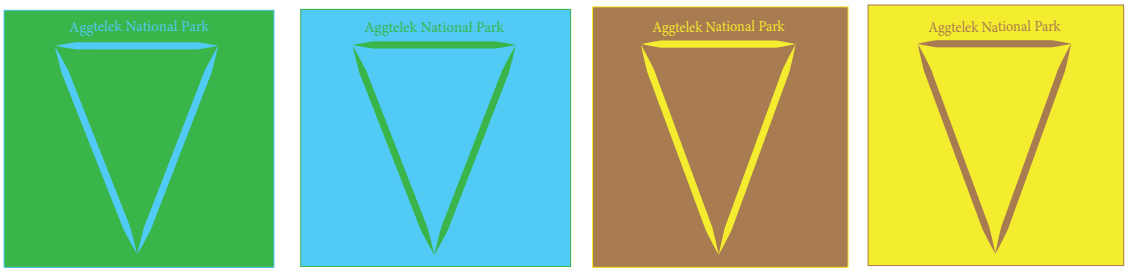


Giulia Cafaro
Degree Course in Design and Communication

GIULIA CAFARO



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IDP011

Mariantonietta Cammarosano
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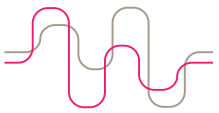
MARIANTONIETTA CAMMAROSANO



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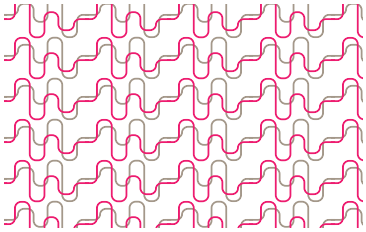

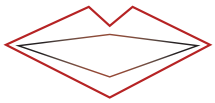

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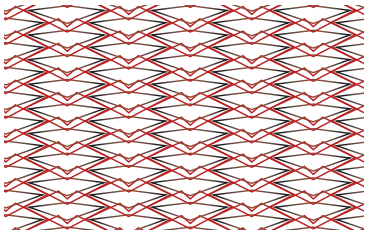

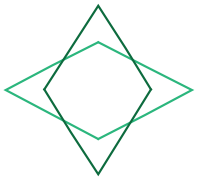

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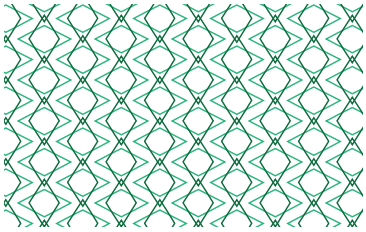

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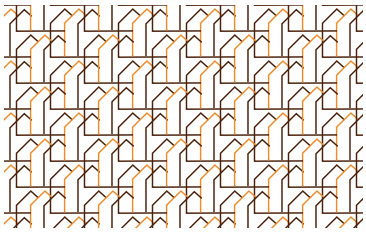

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BEŠKA

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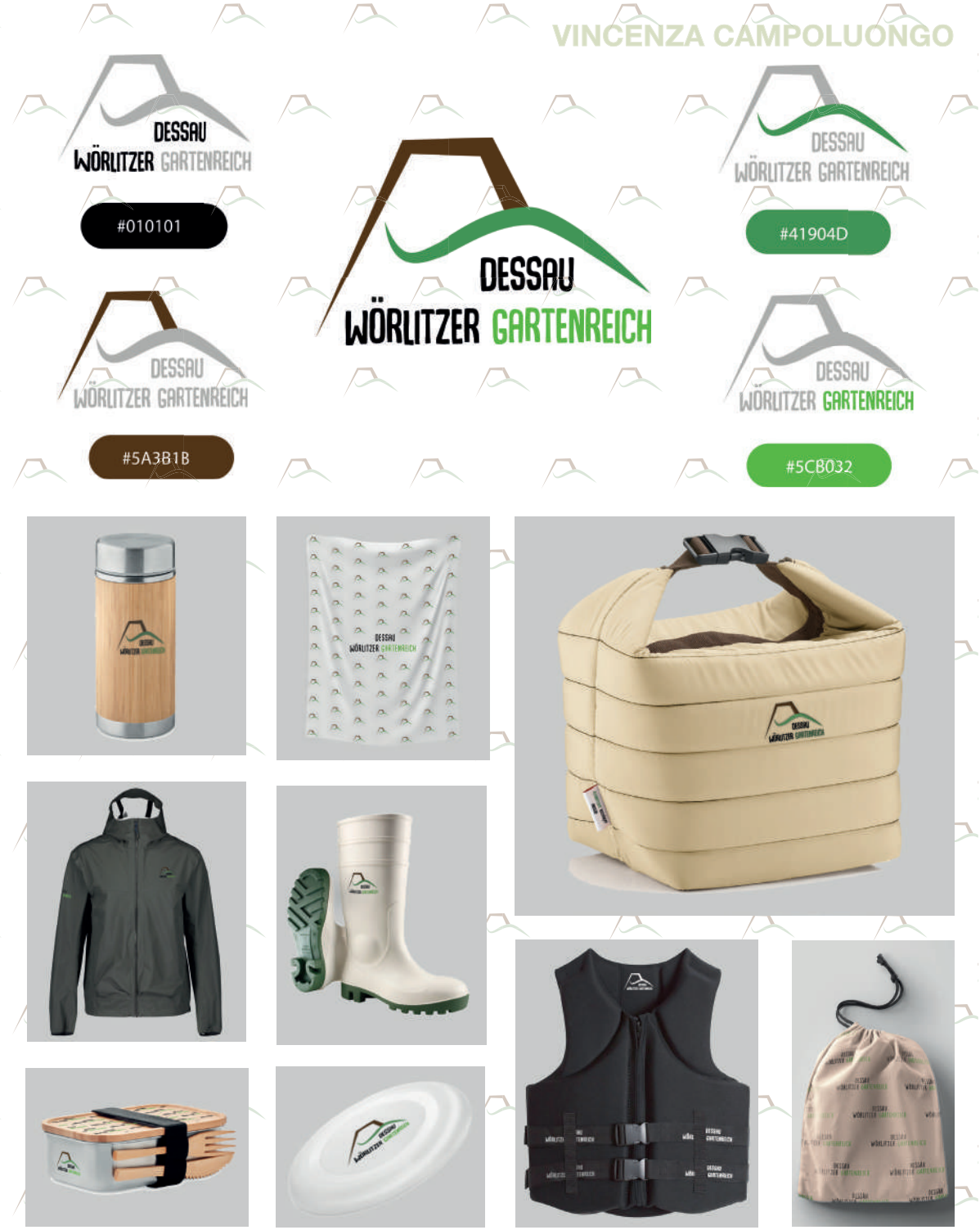
Degree Course in Design and Communication



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IDP013

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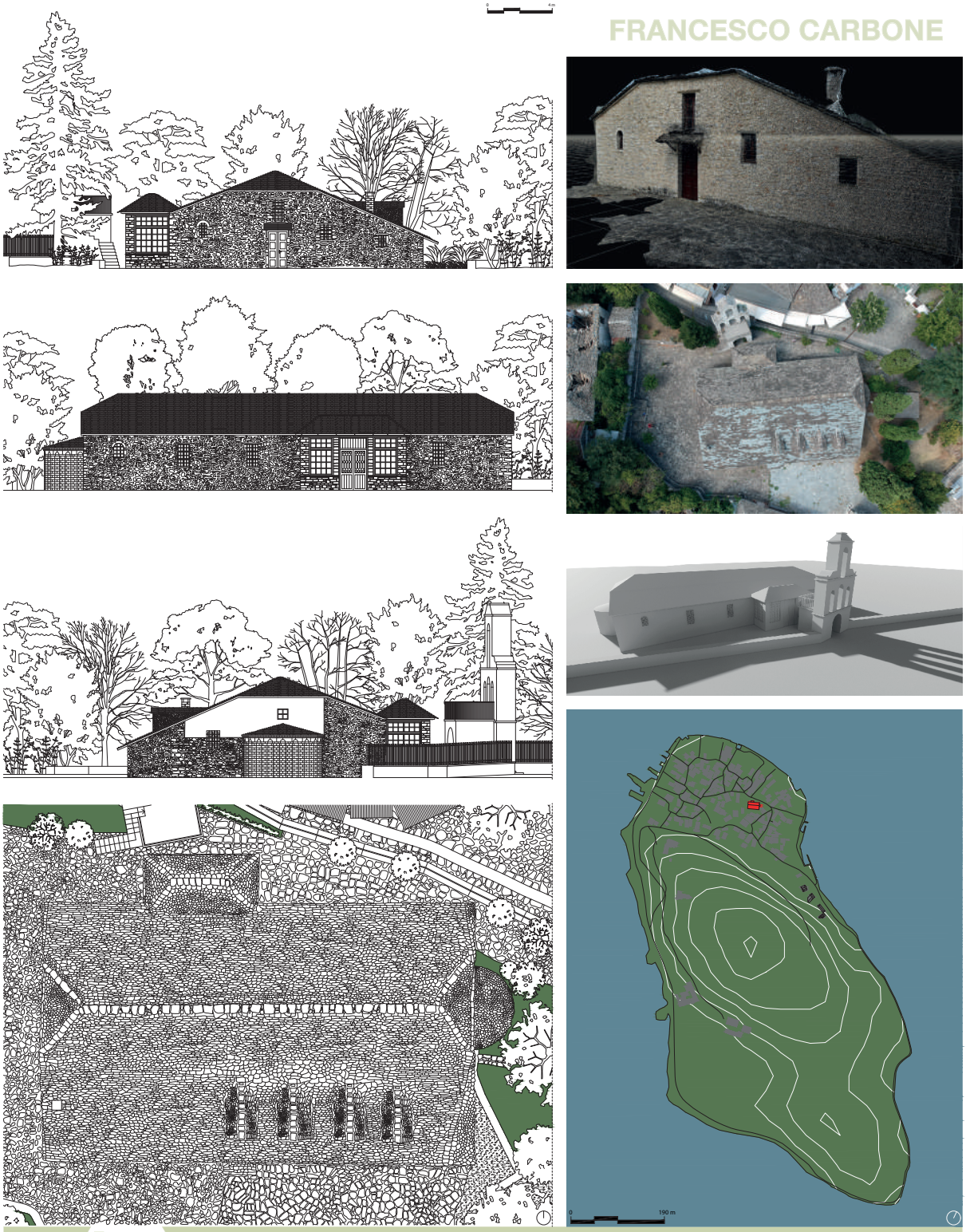

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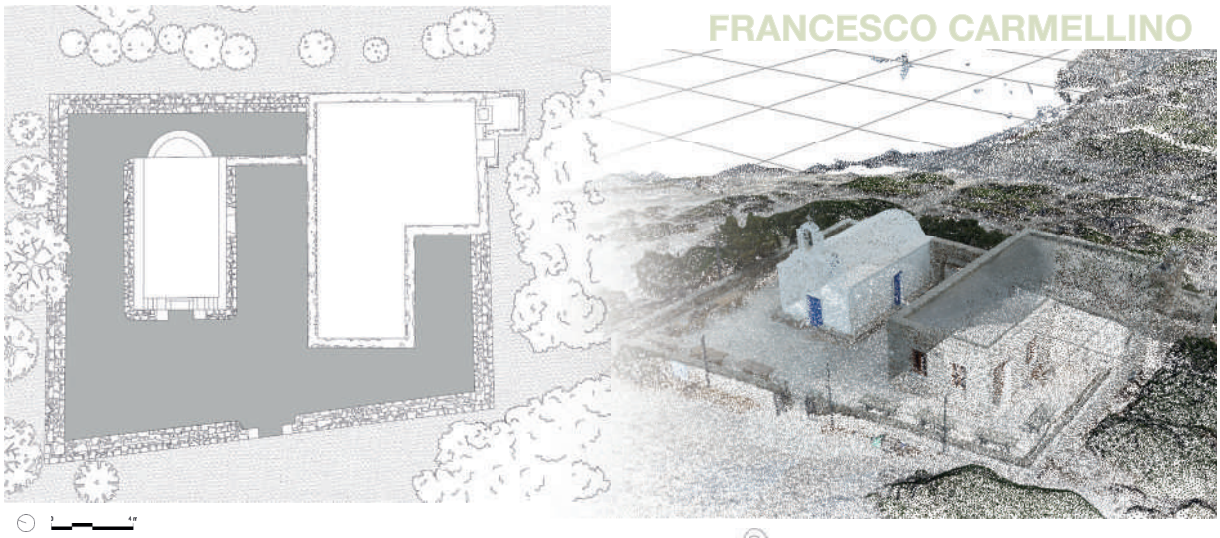

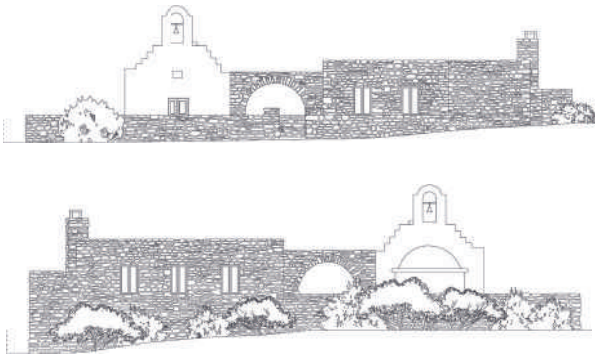

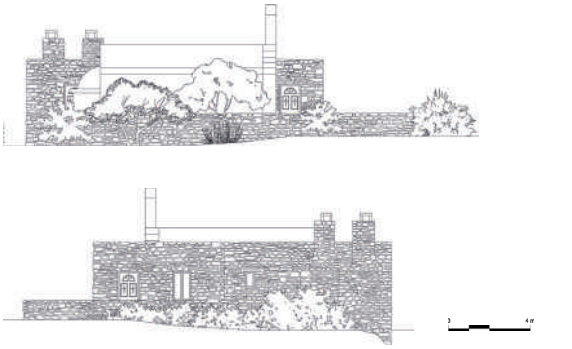

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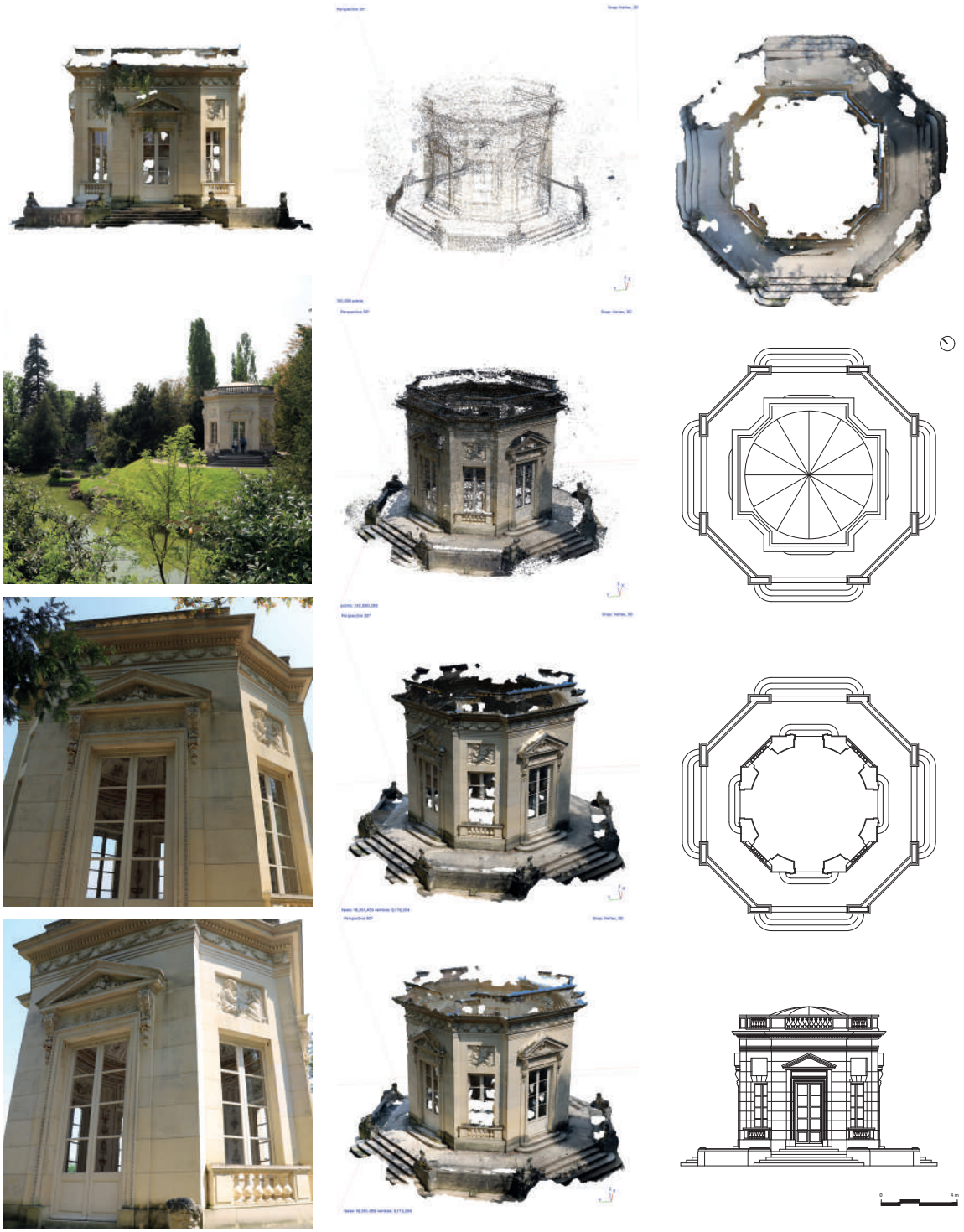

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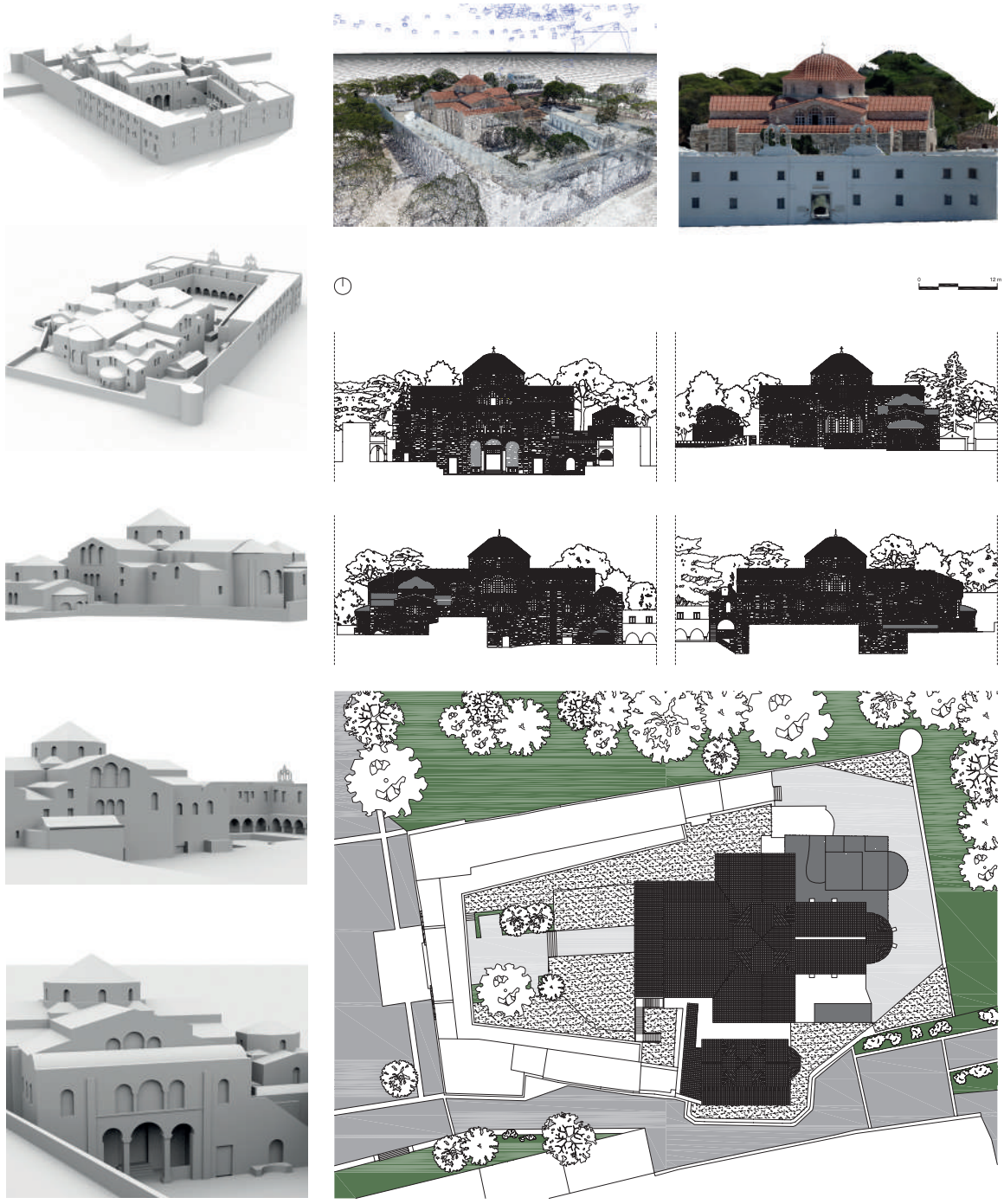
IDP017

Vito Castiglione
Degree Course in Building Science and Techniques

VITO CASTIGLIONE



Elisabetta Cepparulo
Degree Course in Design and Communication

ELISABETTA CEPPARULO

C= 90
M= 30
Y= 95
K= 30

C= 63
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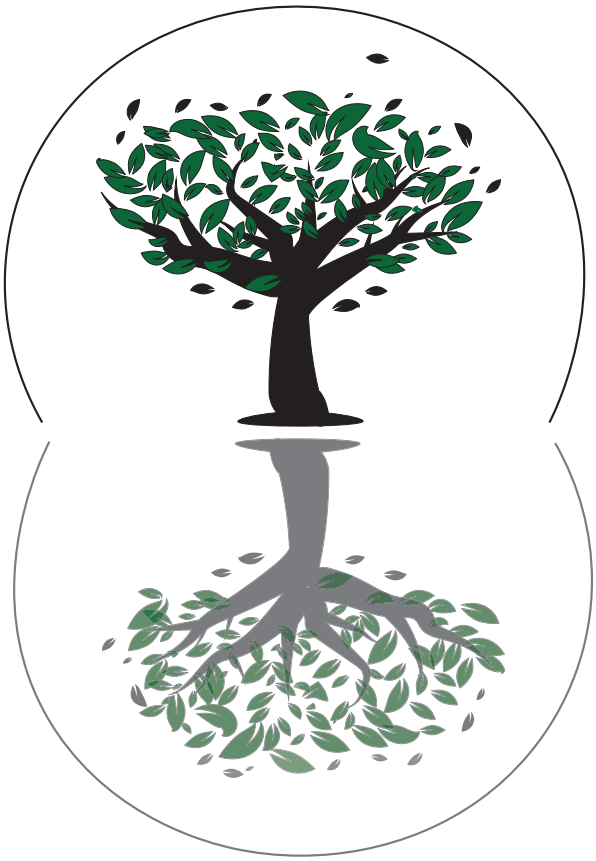

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IDP019

Giuliano Mansueto Chilimari
Degree Course in Design and Communication

Varosliget

CYMK:	#009FE3 #312783	#009640 #006633	#E30613 #BE1622	#CA9E67 #B17F4A

Noemy Ciotola
Degree Course in Design and Communication

NOEMY CIOTOLA

IDP021

Paolo Ciurlia
Degree Course in Design and Communication

Angela Coppola
Degree Course in Design and Communication

CA7E11	F7A424	FDC531
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	F7CB6B	
	F7CB6B	

ANGELA COPPOLA

Chateau de Fontainebleau

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IDP023

Simona D'angelo
Degree Course in Design and Communication

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Dalila De Angelis
Degree Course in Design and Communication

IDP025

Gloria De Luca
Degree Course in Design and Communication

Emanuele Maria De Rosa
Degree Course in Design and Communication

EMANUELE MARIA DE ROSA

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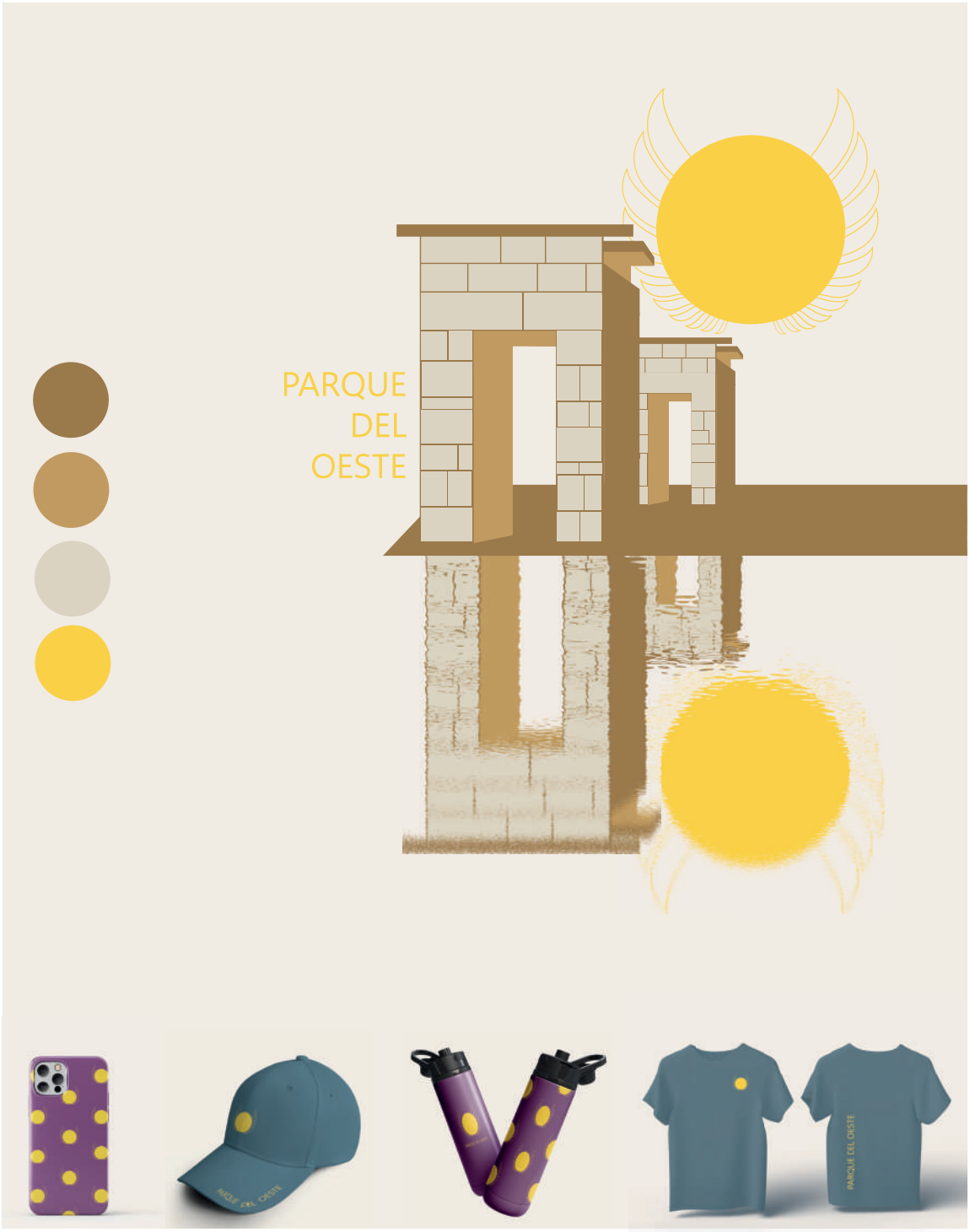
IDP027

Pierluigi De Stavola
Degree Course in Design and Communication

Pia Dell'Imperio
Degree Course in Design and Communication

PIA DELL'IMPERIO



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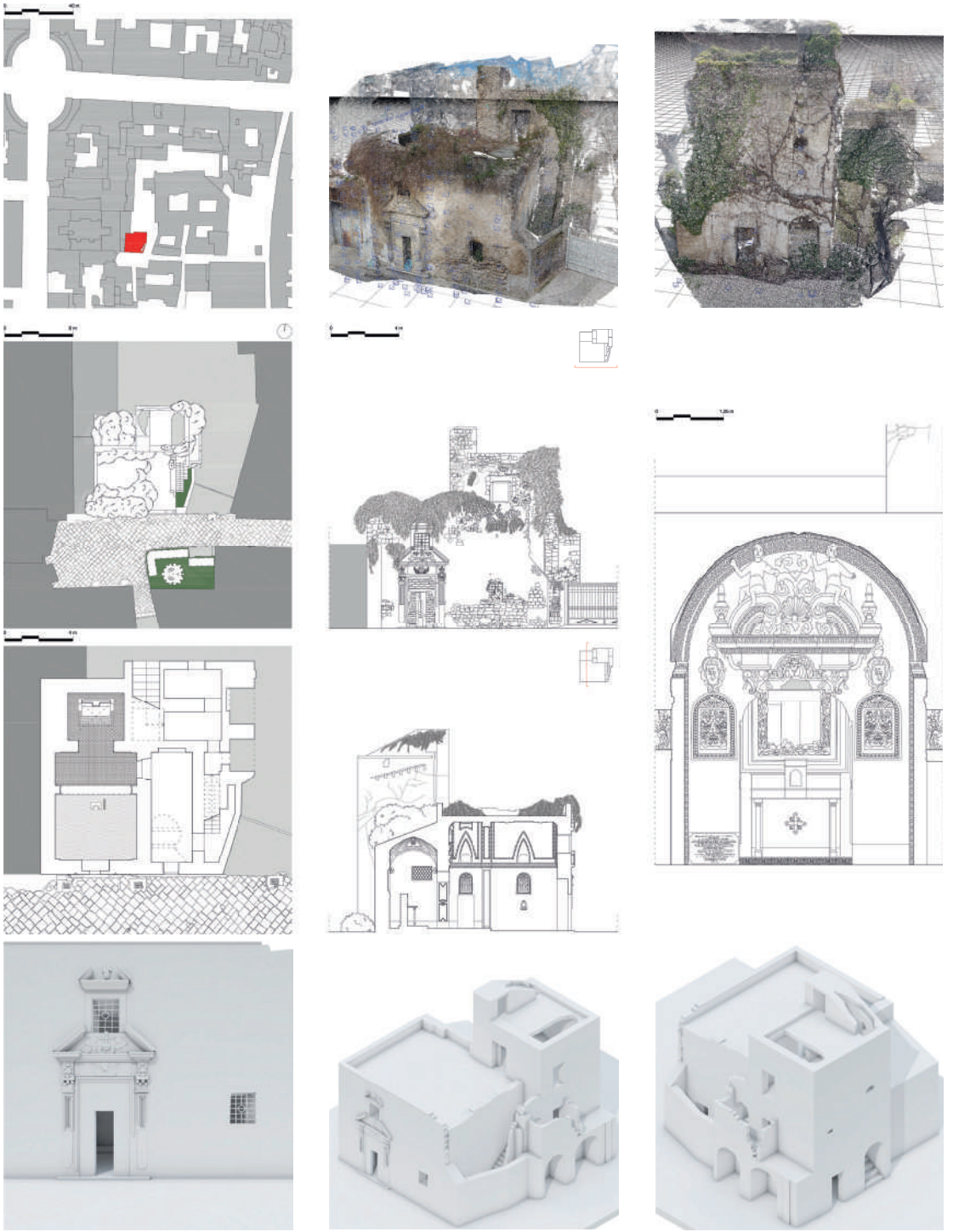
IDP029

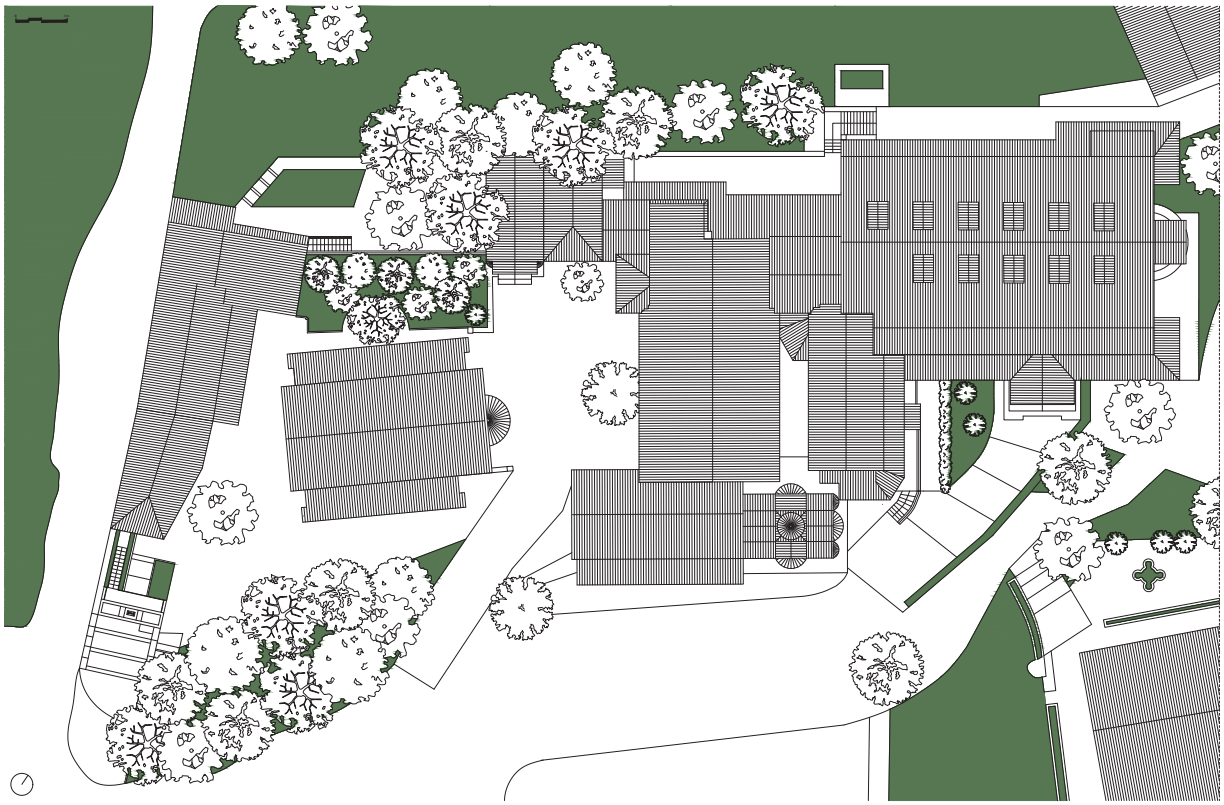
Riccardo Della Valle
Degree Course in Building Science and Techniques

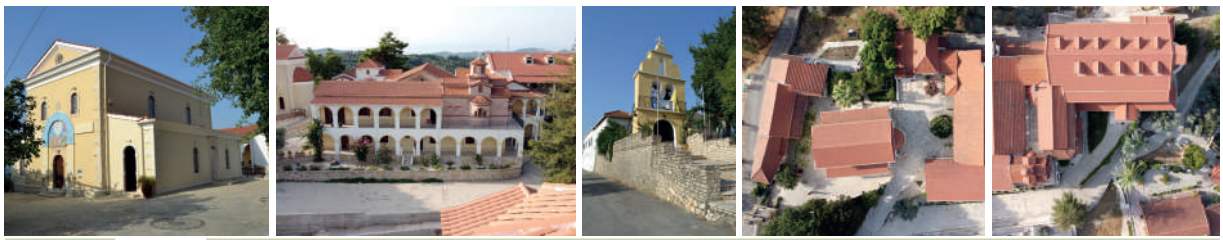
RICCARDO DELLA VALLE



Roberta Di Mauro
Degree Course in Building Science and Techniques

ROBERTA DI MAURO





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IDP031

Arianna Diana
Degree Course in Design and Communication

Emiliano Dovere
Degree Course in Design and Communication

EMILIANO DOVERE

HERRENHAUSER GARTEN

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IDP033

Emiliana Esposito
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Jessica Esposito
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IDP035

Federica Fabbozzi
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Antonietta Ferraro
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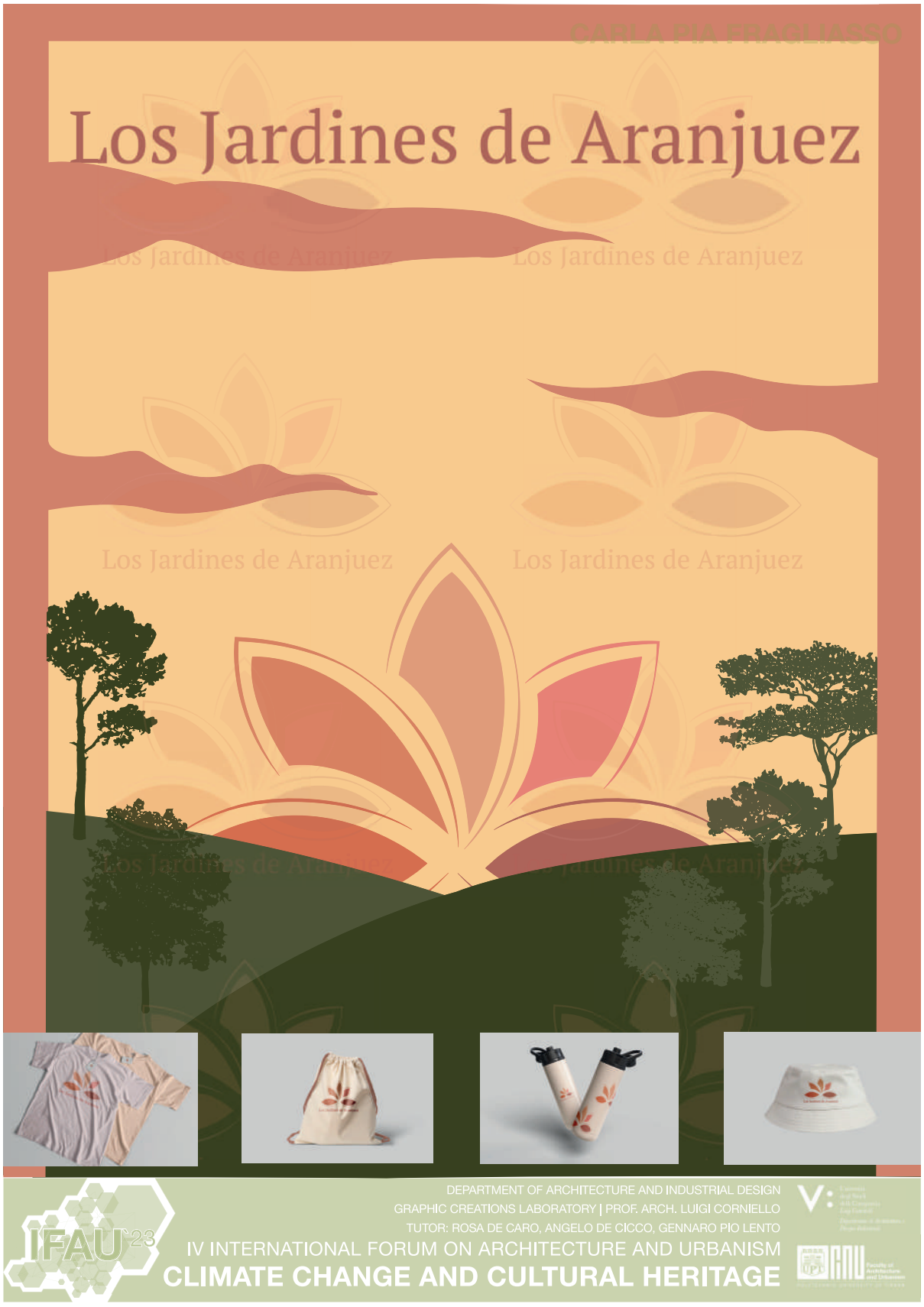
IDP037

Carla Pia Fragliasso
Degree Course in Design and Communication



Sara Gaglione
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IDP039

Martina Galluccio
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MARTINA GALLUCCIO

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Annunziata Garofano
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ANNUNZIATA GAROFANO

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IDP041

Katerina Gerardi
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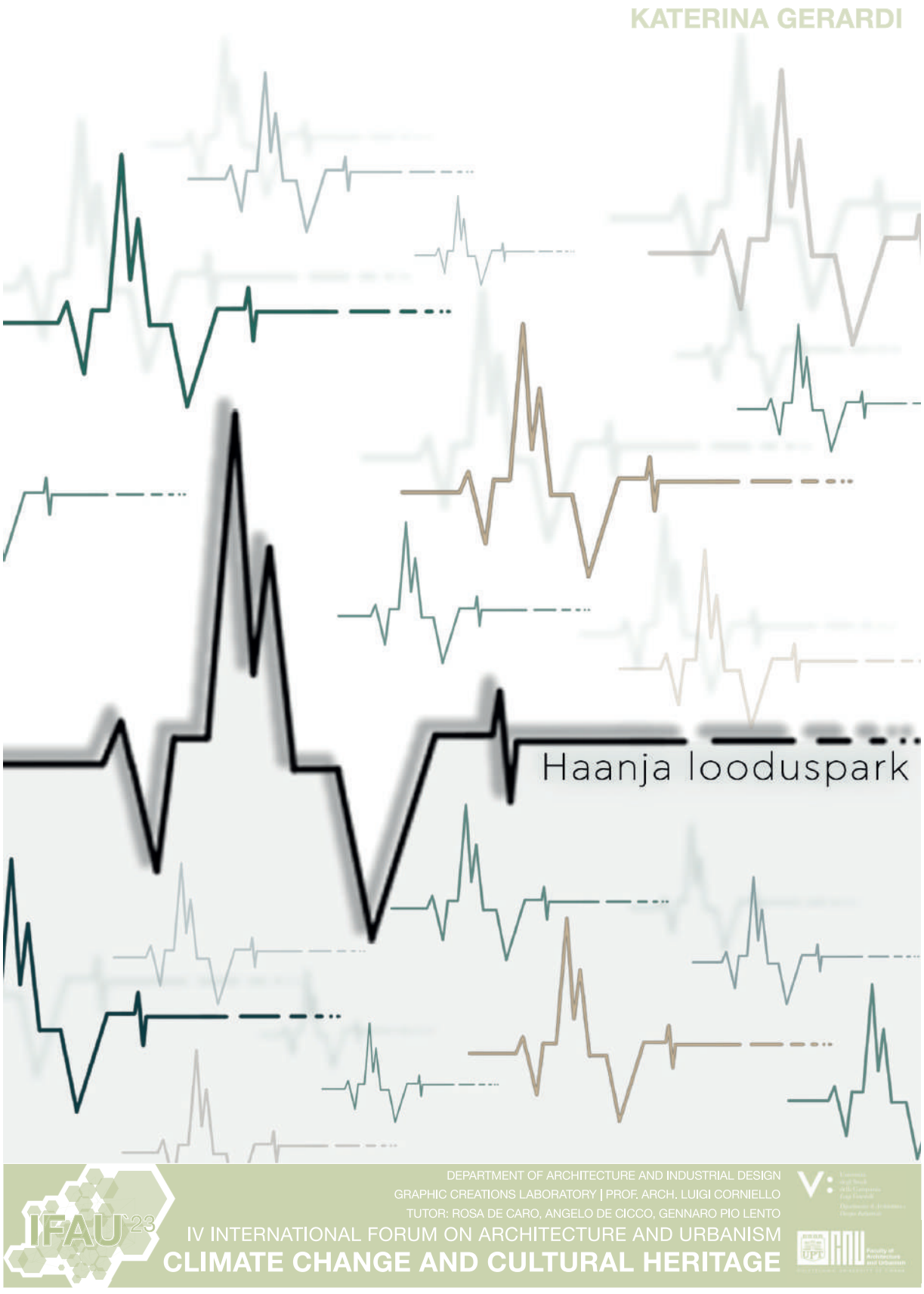

Giuliana Ginti
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IDP043

Carmela Gondola
Degree Course in Design and Communication

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Alyssa Anna Guitto
Degree Course in Design and Communication

ALYSSA ANNA GUITTO

parc de
ersailles

TIPOGRAFIA:

BASKERVILLE OLD FACE
REGULAR

ABCDEFGHILMNOPQRSTUVZ
abcdefghilmnopqrstuvz
123456789@()

COLORI PRIMARI

#000000 #ffffff

PALETTE COLORI

#ffde07 #c6a9a1 #228c4b

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IDP045

Camilla Iannelli
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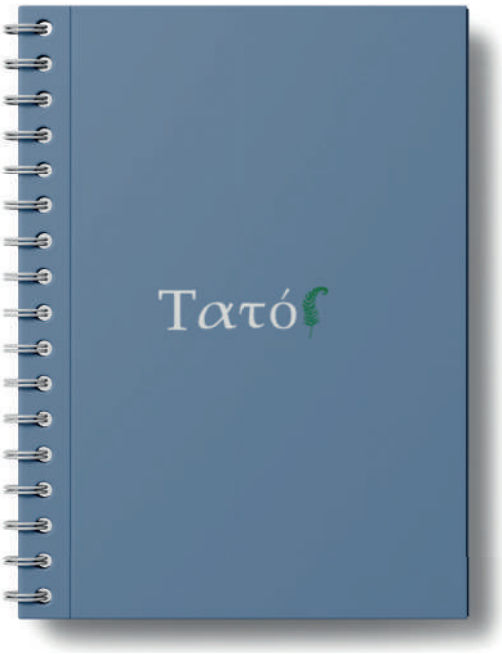
Valentina Ianniello
Degree Course in Design and Communication

VALENTINA IANNIELLO



Τατό

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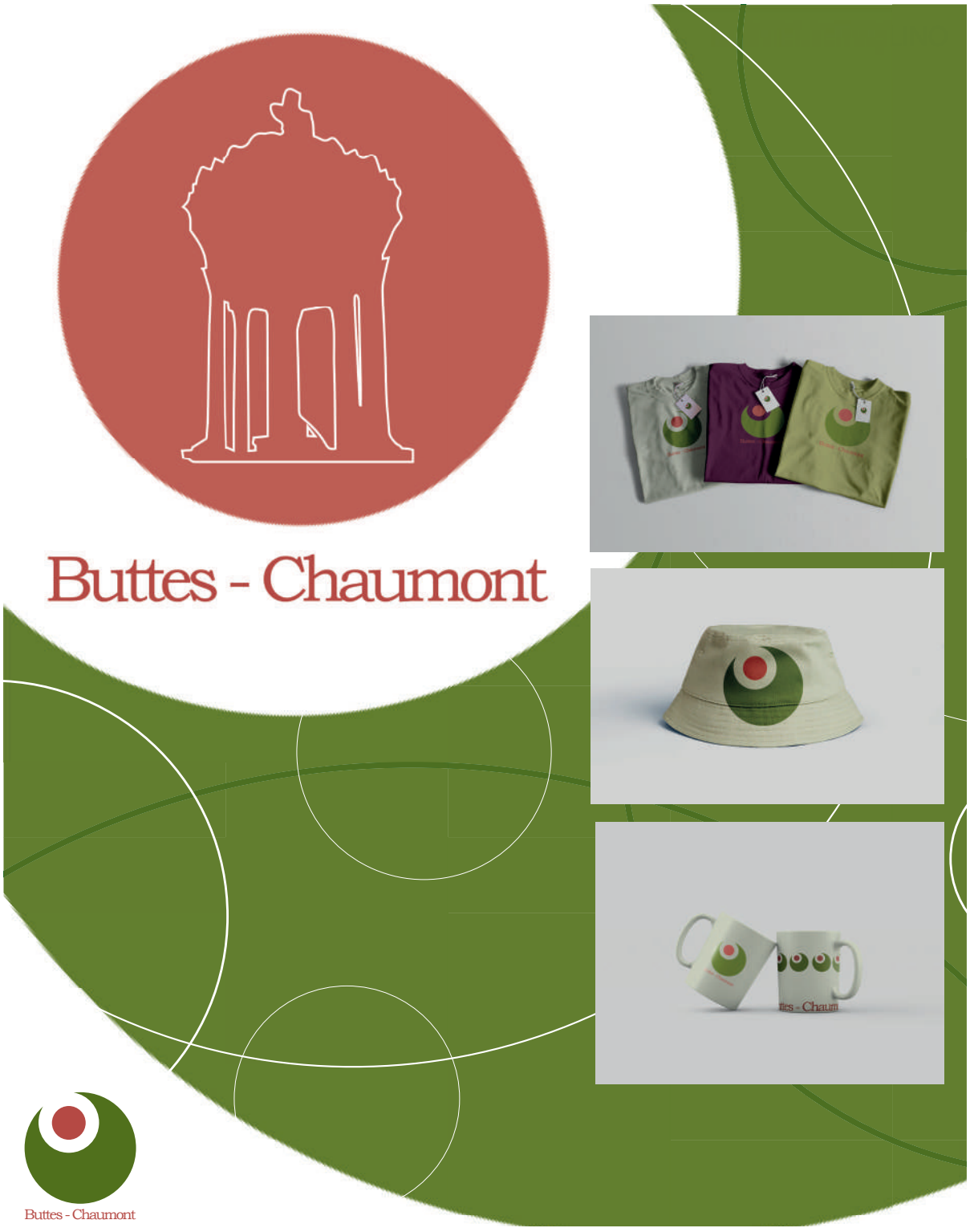
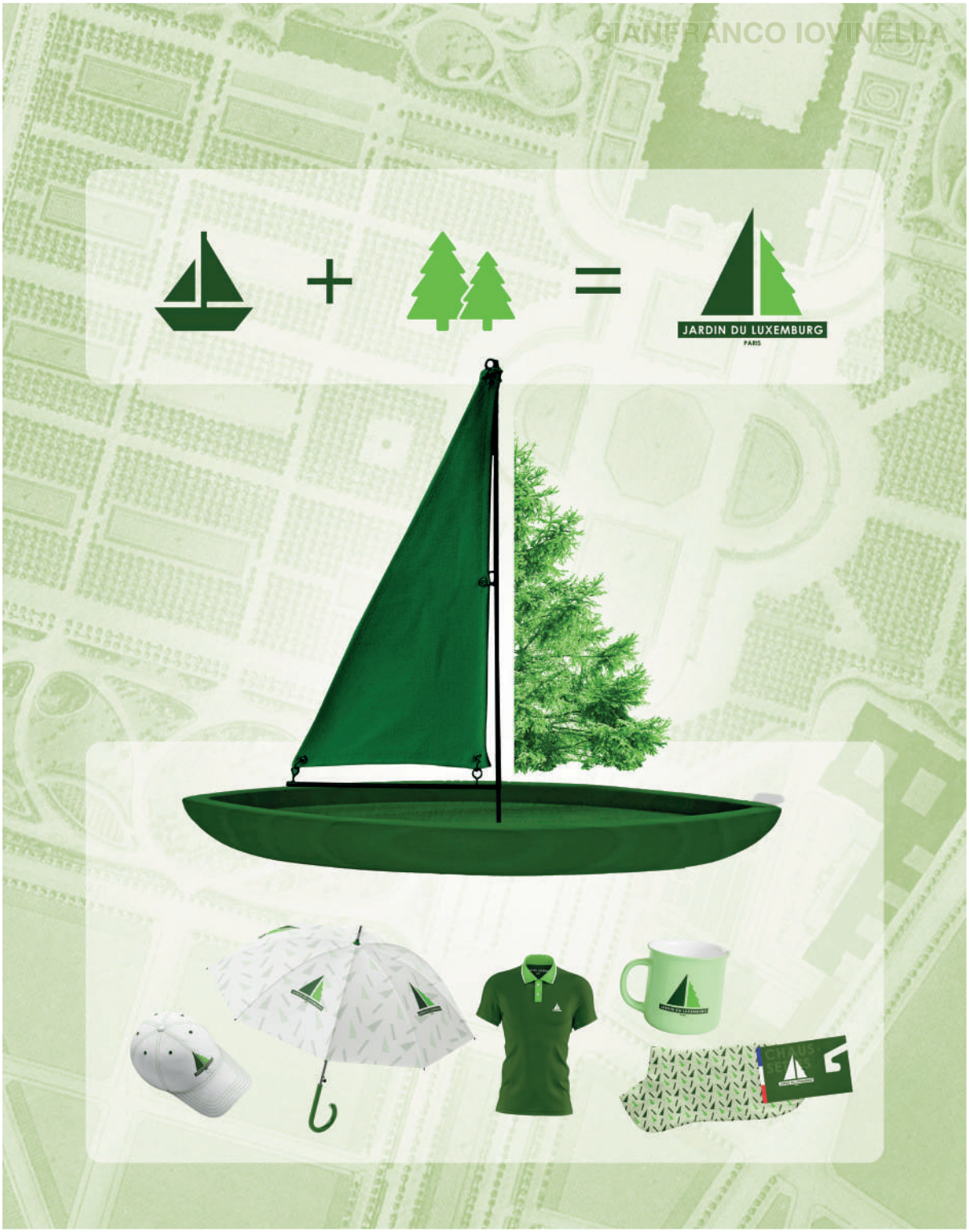
IDP047

Daniel Iervolino
Degree Course in Design and Communication



Gianfranco Iovinella
Degree Course in Design and Communication



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IDP049

Michele Izzo Benedetto
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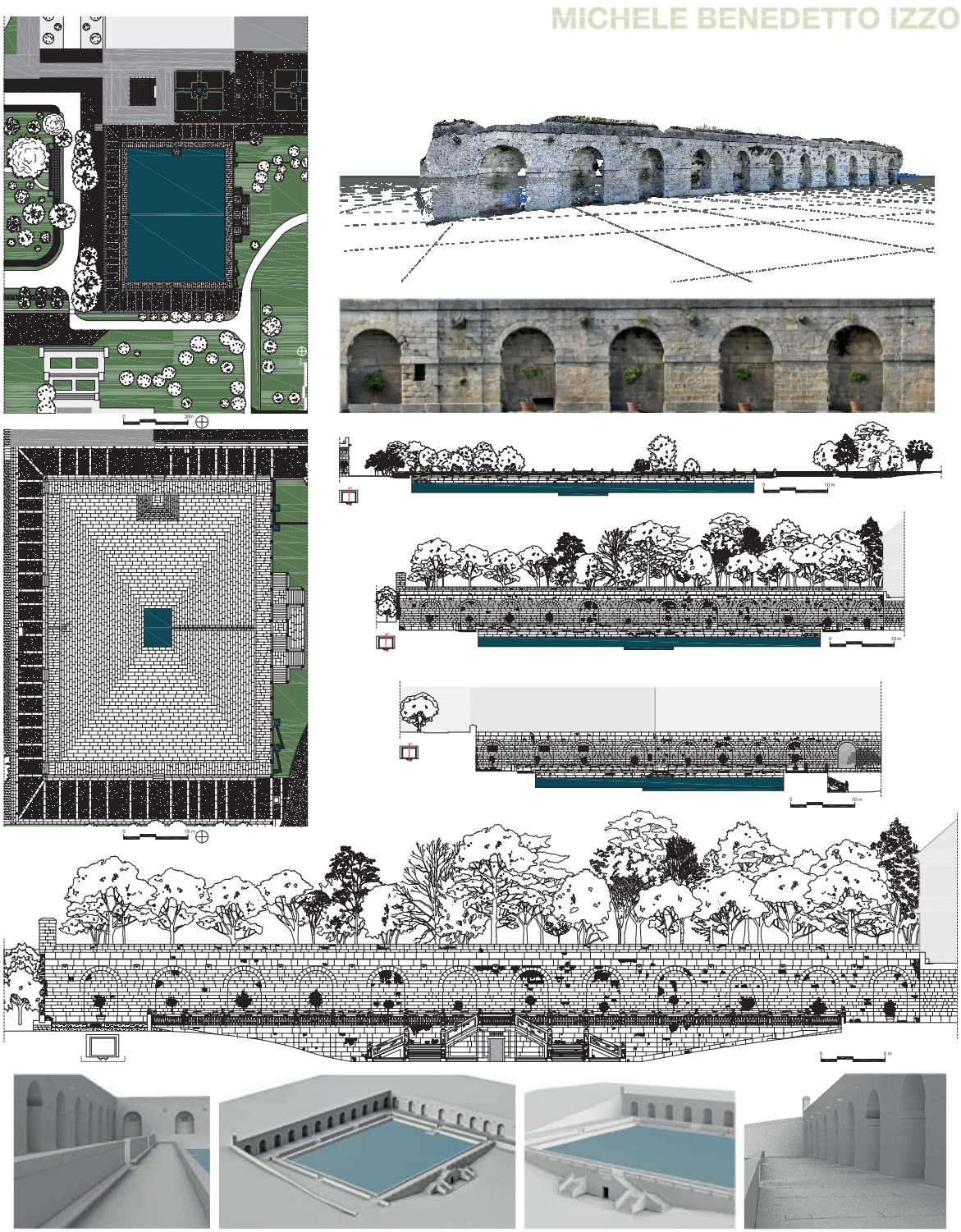

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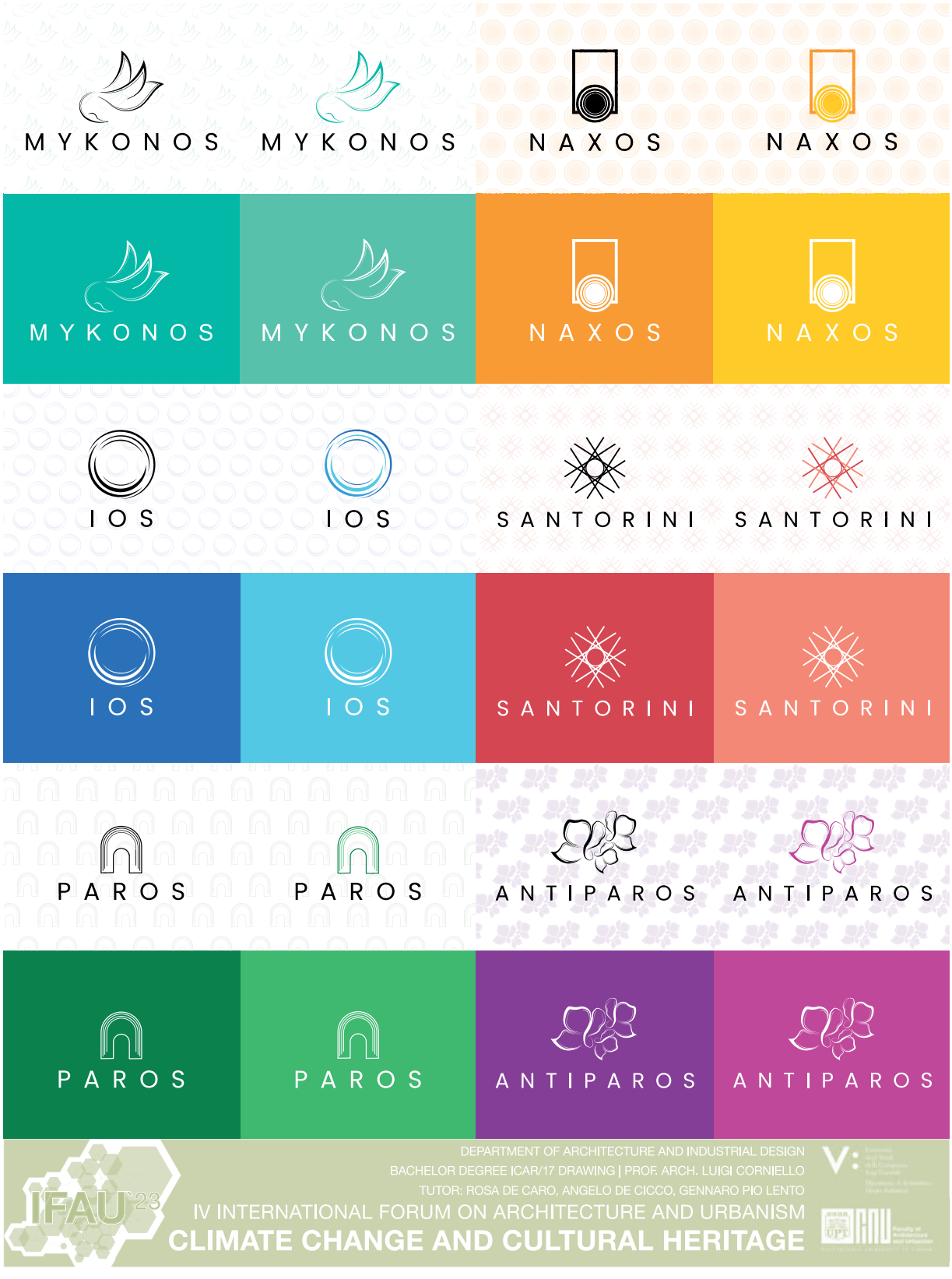
Umberto Lama
Degree Course in Design and Communication

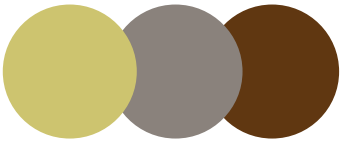
UMBERTO LAMA



IDP051

Martina Lamagna
Degree Course in Design and Communication

MARTINA LAMAGNA



Kopshti Mbretëror i Tiranës

Paolo Landolfi
Degree Course in Building Science and Techniques

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IDP053

Giorgia Lanfreschi
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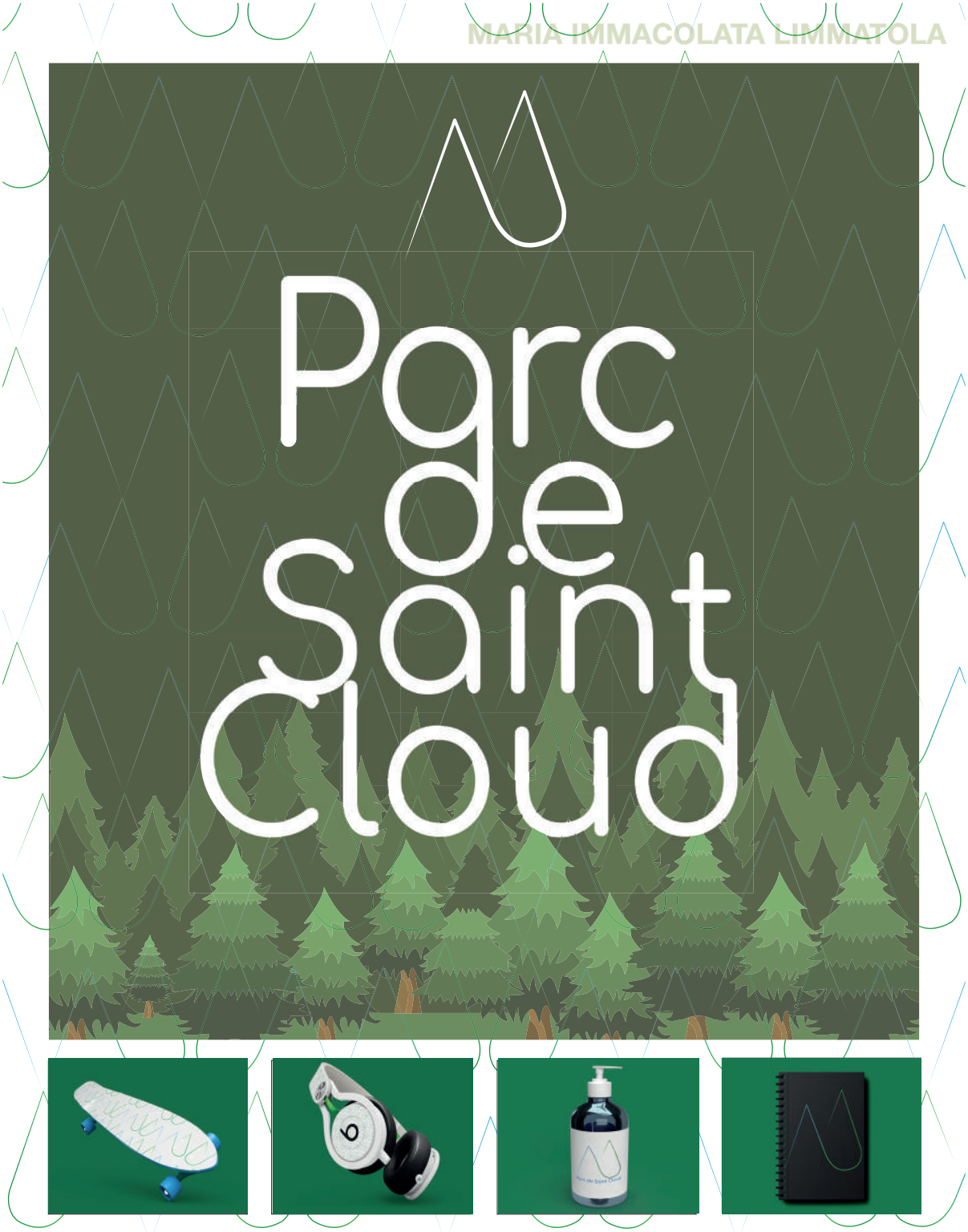
Maria Immacolata Limmatola
Degree Course in Design and Communication



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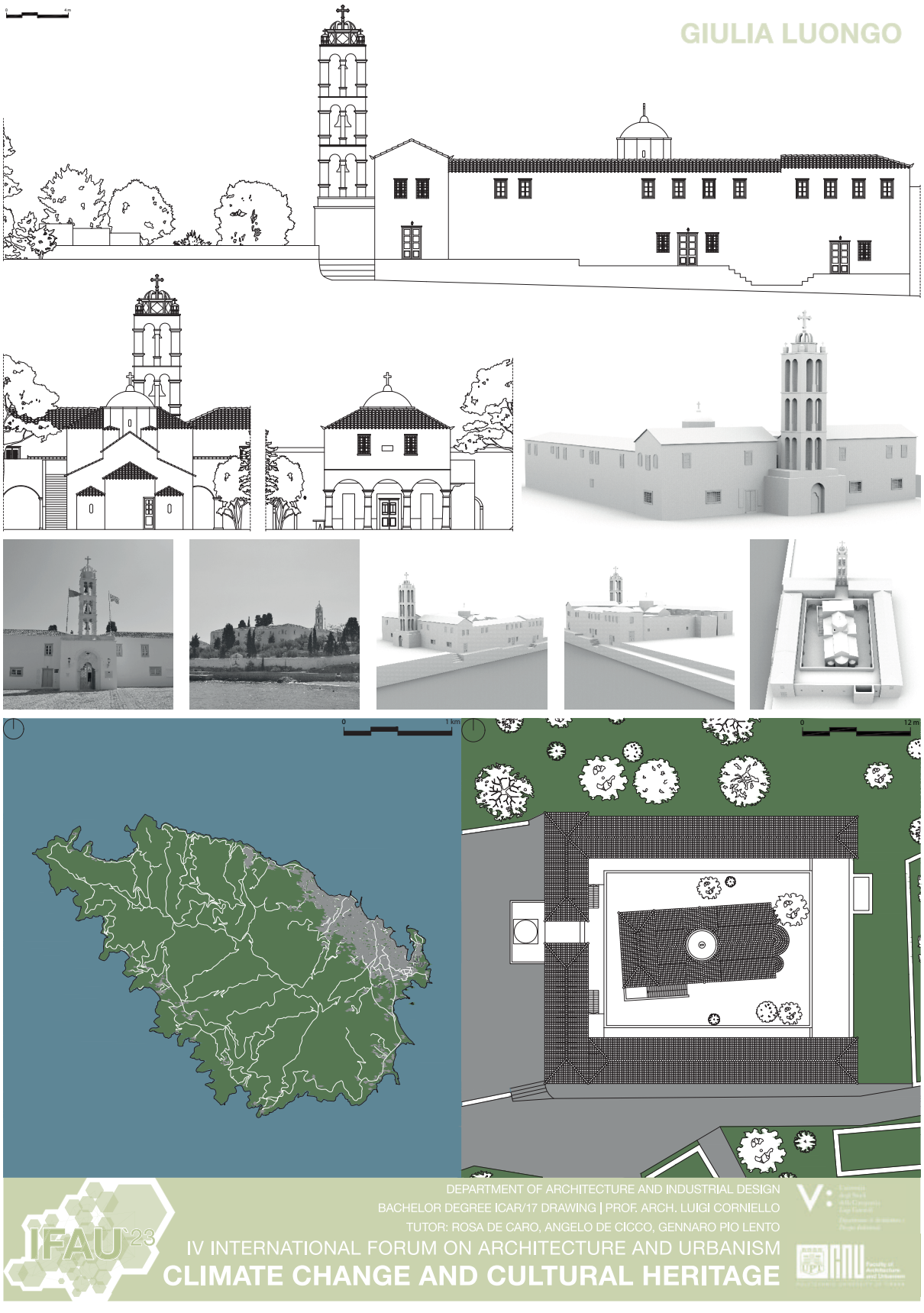
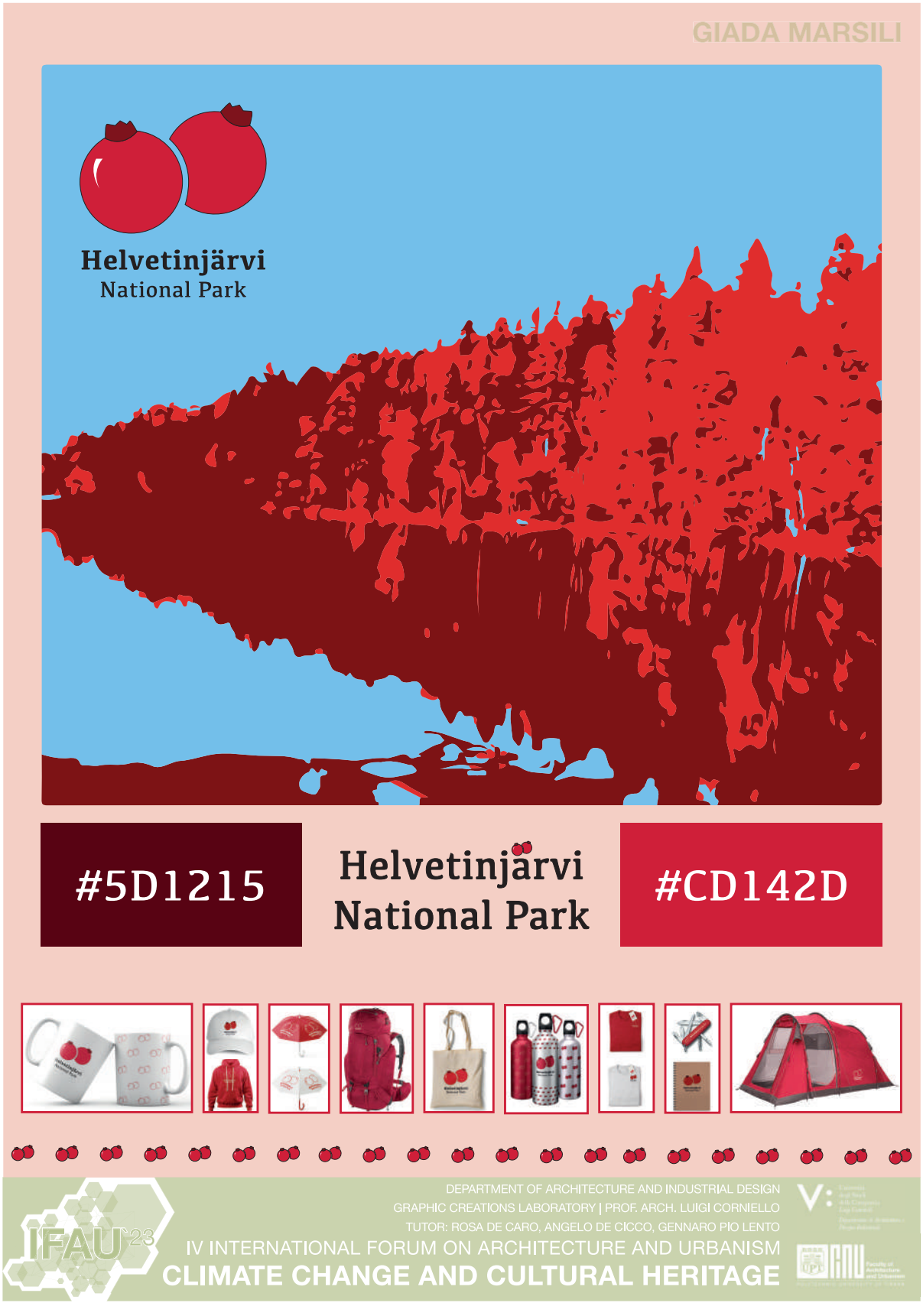
IDP055

Giulia Luongo
Degree Course in Building Science and Techniques



Giada Marsili
Degree Course in Design and Communication



IDP057

Francesco Massimo
Degree Course in Design and Communication

FRANCESCO MASSIMO

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878787

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M:0
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K:0
ffffff

C:100
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Y:100
K:100
000000

C:19
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aa332e

LAHEMAA RAHVUSPARK

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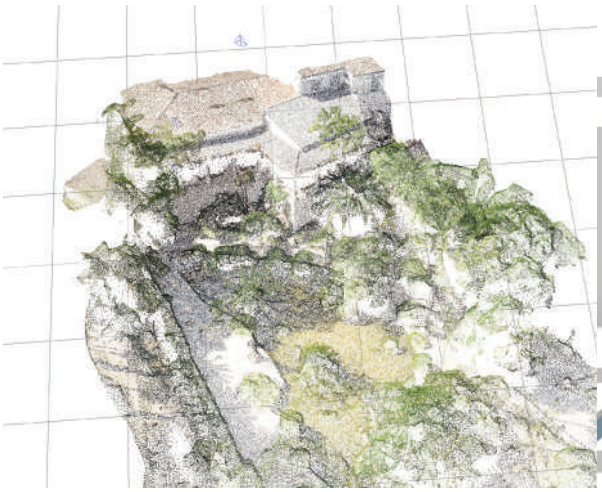
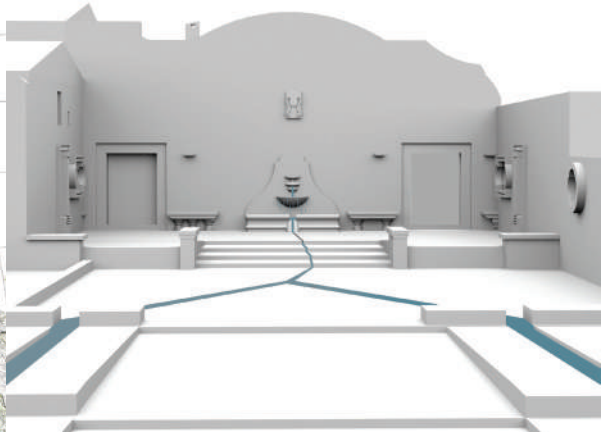
Francesco Mastroianni
Degree Course in Building Science and Techniques





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IDP059

Migliaccio Maria Giovanna
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Alessandro Moccia
Degree Course in Design and Communication

IDP061

Federica Monte
Degree Course in Design and Communication

Simona Nappa
Degree Course in Design and Communication

SIMONA NAPPA

#C46016
#4F355A
#2C2A38
#C28316
#4B411E
#641D0A




Jardin des Tuileries

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IDP063

Gianluca Nazzaro
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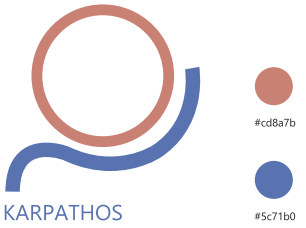
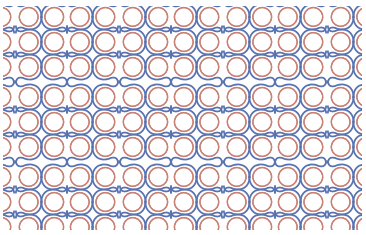
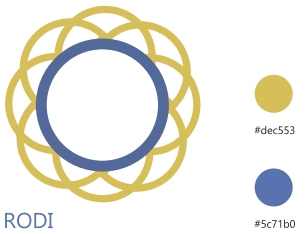
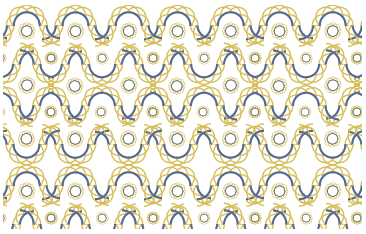
Rosaria Panico
Degree Course in Design and Communication

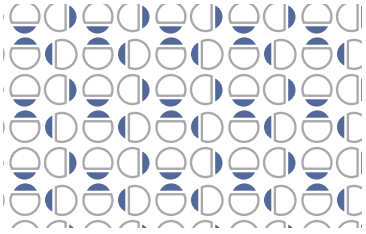
ROSARIA PANICO

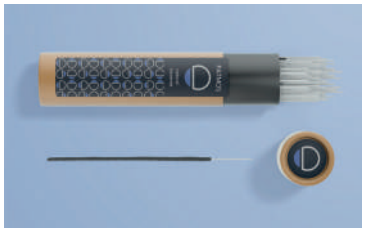


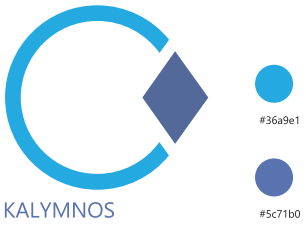


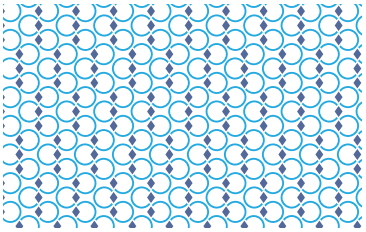


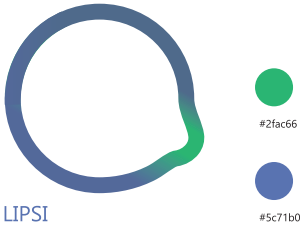


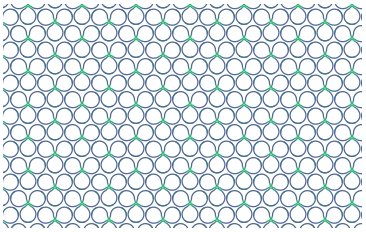


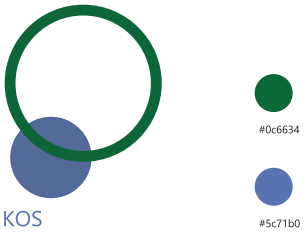


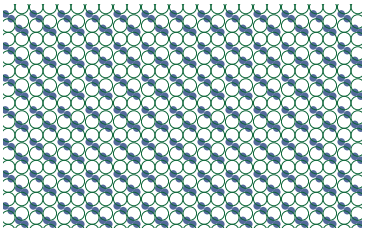












IDP065

Enrico Papa
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ENRICO PAPA

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Noemi Anna Pardi
Degree Course in Design and Communication

IDP067

Francesco Parisi
Degree Course in Design and Communication

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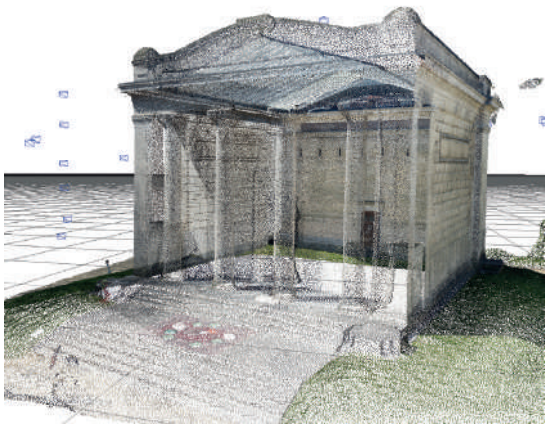
Maria Grazia Perdonò
Degree Course in Design and Communication

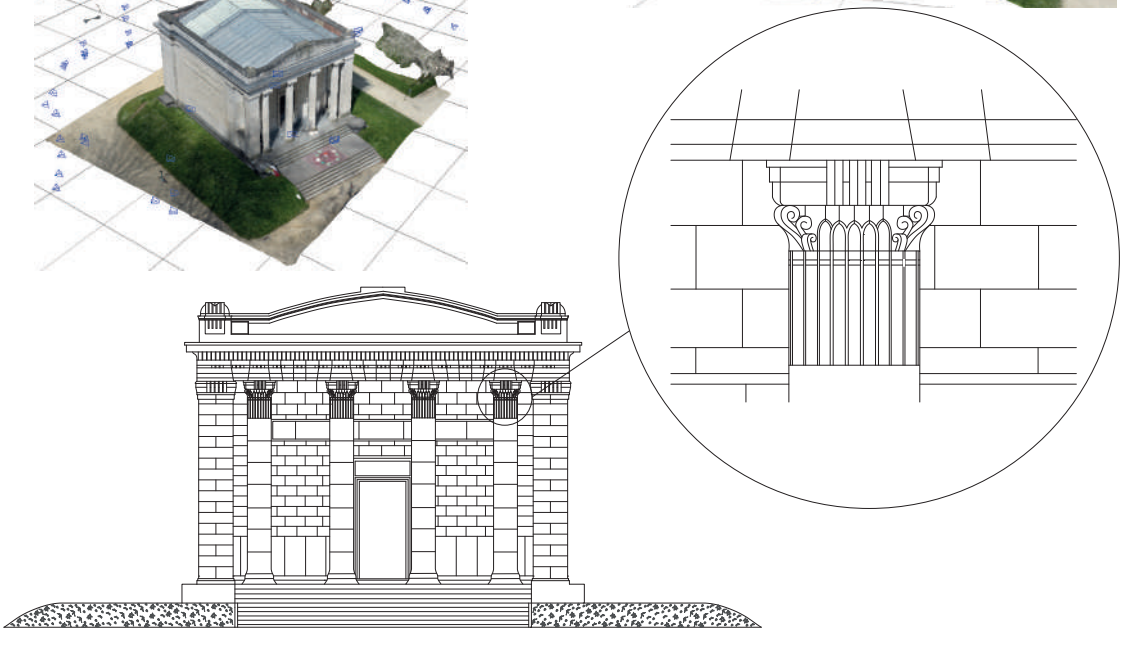
MARIA GRAZIA PERDONO'

IDP069

Dennis Petrillo
Degree Course in Building Science and Techniques

DENNIS PETRILLO





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Luca Pisani
Degree Course in Design and Communication

LUCA PISANI

C: 11% M: 19% Y: 75% K: 1%
R: 233 G: 200 B: 85
#E9C855

C: 37% M: 79% Y: 64% K: 54%
R: 102 G: 47 B: 46
#662F2E

C: 26% M: 100% Y: 63% K: 24%
R: 156 G: 23 B: 56
#9C1738

#398B35
C: 79% M: 21% Y: 100% K: 6%
R: 57 G: 139 B: 53

C: 18% M: 50% Y: 73% K: 7%
R: 202 G: 135 B: 77
#CA874D

C: 42% M: 0% Y: 99% K: 0%
R: 170 G: 201 B: 24
#aac918

Kungsparken

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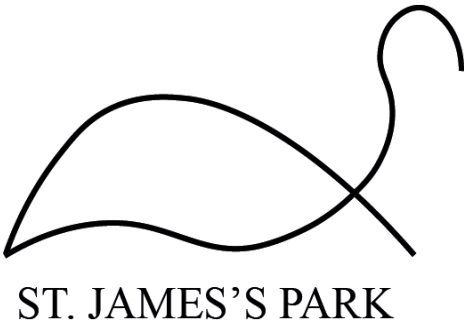
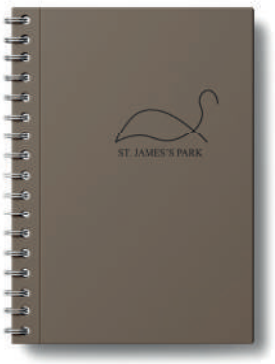
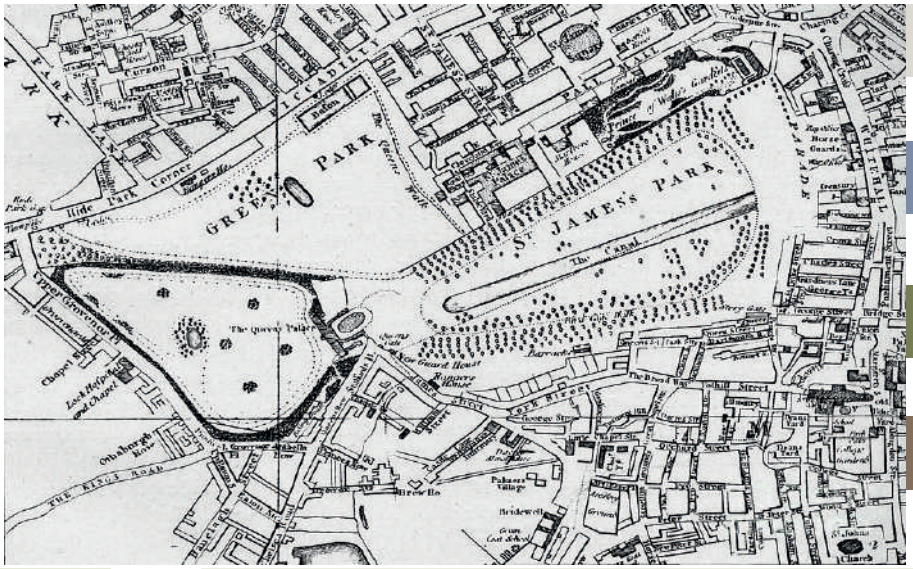
IDP071

Maria Giovanna Postiglione
Degree Course in Design and Communication

MARIA GIOVANNA POSTIGLIONE







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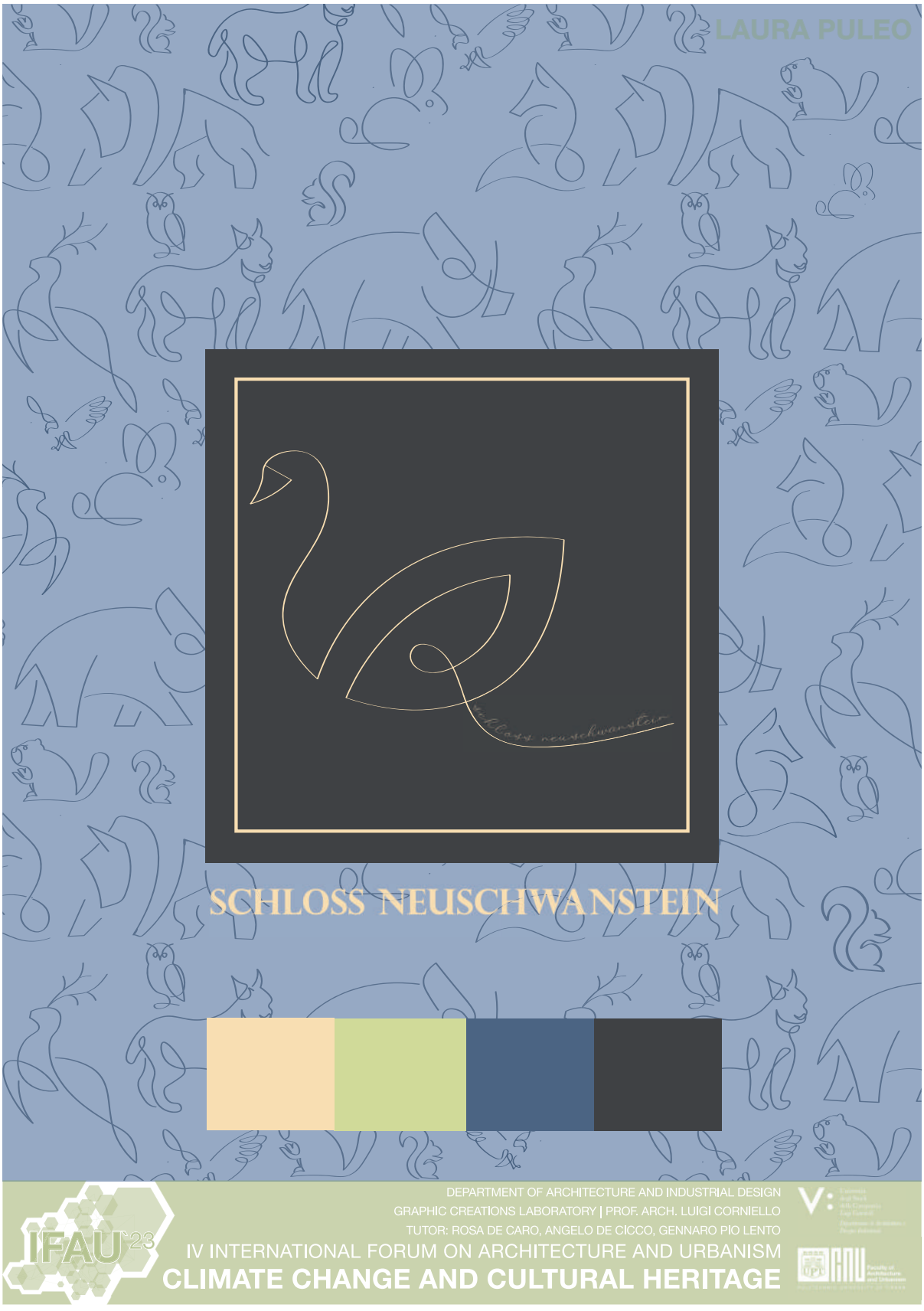
Laura Puleo
Degree Course in Design and Communication



IDP073

Martina Ruffo
Degree Course in Design and Communication

MARTINA RUFFO

PARQUE DE EL RETIRO

PARQUE DE EL RETIRO

00543E	CASTLETON GREEN
009460	SHAMROCK GREEN
96A13A	MOSS GREEN
741D07	BARN RED
000000	BLACK
FFFFFF	WHITE

FONT:

BODONI MT
ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789



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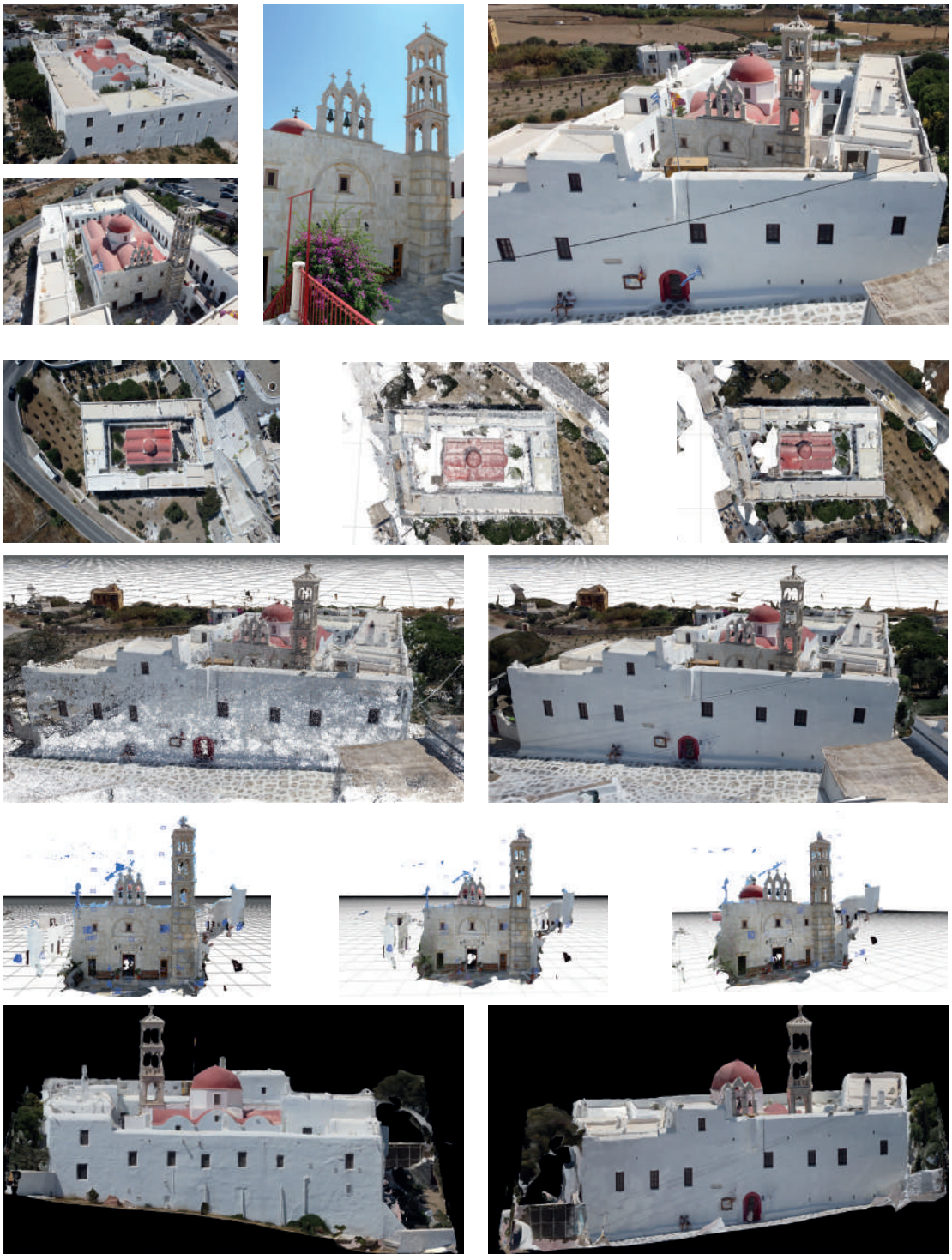
Giuseppe Russo
Degree Course in Building Science and Techniques

GIUSEPPE RUSSO



IDP075

Francesca Maria Salvati
Degree Course in Design and Communication

Anna Scartaghiande
Degree Course in Design and Communication

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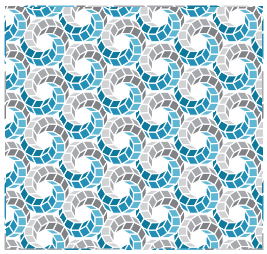
IDP077

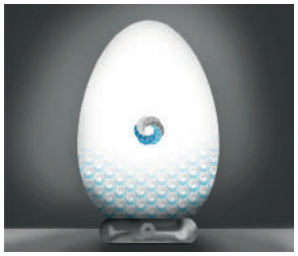
Pietro Antonio Schiavone
Degree Course in Design and Communication

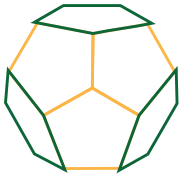
Sara Simonetti
Degree Course in Design and Communication

SARA SIMONETTI

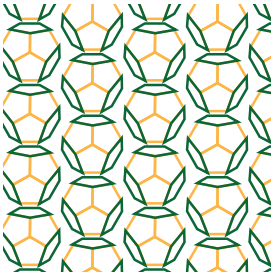
Gospa od Skrpjela
Nostra Signora delle Roccie



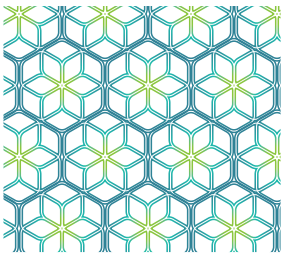


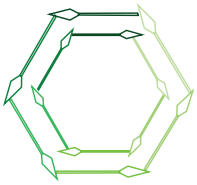


Sveti Dorde
San Giorgio

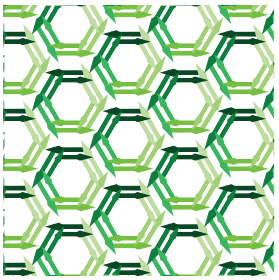


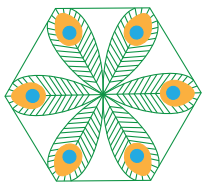
Ostrovo Cvijeca
San Michele



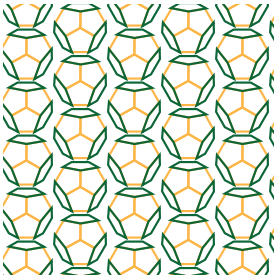


Sveti Marko
San Marco





Gospa od Milorsda
Soglio del Convento



IDP079

Antonietta Trotta
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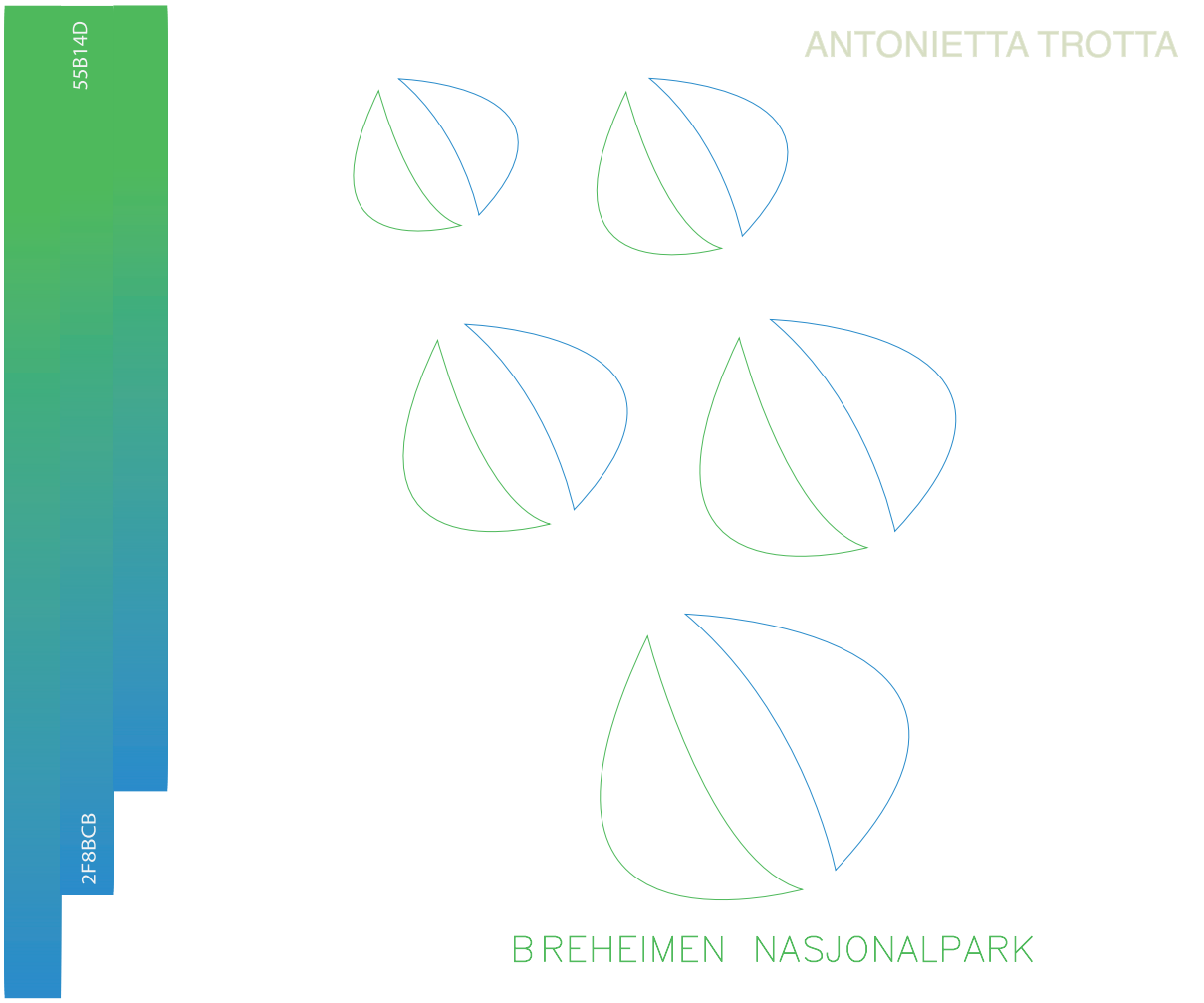
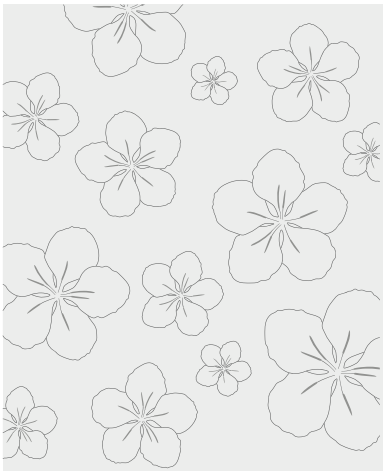


Claudia Viscardi
Degree Course in Design and Communication

CLAUDIA VISCARDI

Jardin
des
plantes



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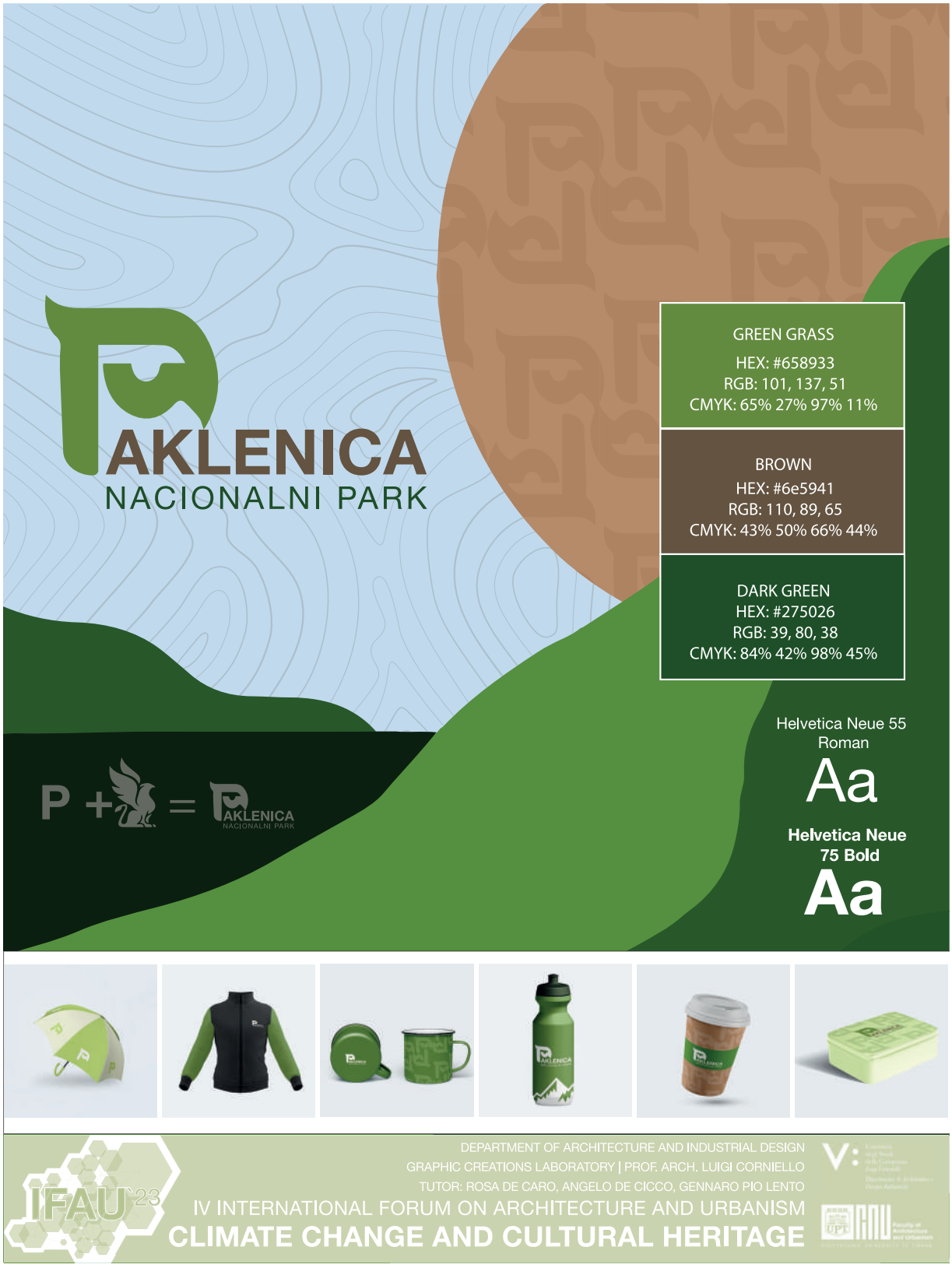
IDP081

Ermelinda Volpe
Degree Course in Design and Communication

Marilena Zannotti
Degree Course in Design and Communication

MARILENA ZANNOTTI



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ANONYMOUS REVIEWERS

Burda Andronira
Capone Mara
Cennamo Claudia
Ciampi Giovanni
Cirillo Vincenzo
Corniello Luigi
D'Auria Saverio
Forte Fabiana
Frettoloso Caterina
Fundo Akli
Jacazzi Danila
Janeiro Pedro António
Maliqari Andrea
Meunier Paul Luis
Nepravishta Florian
Palmieri Alice
Palomba Daniela
Pascariello Maria Ines
Ricciotti Laura
Scorpio Michelangelo
Serraglio Riccardo
Shehu Elfrida
Tavoletta Concetta
Thomai Gjergj
Zerlenga Ornella